

CHAPTER 5

RESULTS ANALYSIS AND DISCUSSIONS

5.1 Introduction

This chapter aims to report the results of the analysis so as to obtain objectives and hypotheses. Generally, it focuses on the background data, data analysis and defaulted model formulation, results in interpretation, discussion and conclusions. More so, three types of methods are used in this study (preliminary analysis, logistic regression and decision tree). First part of the chapter presents result from descriptive analysis method, while the second parts present results from logistic regression analysis and decision tree method from two different software (SPSS and WEKA). These softwares are relevant in predicting *sukuk* defaulted firms. The results ascertain the indicators that contributed to the failures of *sukuk* firms in Malaysia. The contribution of each indicators are discussed into four parts; (i) analysis on liquidity risk, (ii) analysis on solvency ratio, (iii) analysis on corporate governance and analysis on liquidity, and (iv) solvency ratio (full model). Furthermore, the indicators that consist of predictive variables are used to explain *sukuk* defaulted firms, these include; quick ratio and cash ratio for liquidity risk, debt to equity ratio and interest coverage ratio for solvency ratio, independent director and audit committee for corporate governance characteristics and dummy variable for the predictability of *sukuk* default and the data are analysed using SPSS Version 23 and WEKA 3.8.

5.2 Descriptive Analyses

For this study, the data used are panel logit that were gathered from the firms' financial statements for *sukuk* defaulted firms and via Bloomberg for *sukuk* non-defaulted firms that has been discussed in the previous chapters. A lot of information can be gathered from hundreds of annual reports of the firms. These dataset were then processed and transformed into the following analyses.

The next discussions are based on the following descriptive analyses on (i) Analysis on *Sukuk* Defaulted and Non-Defaulted Firms, (ii) Analysis on Type of *Sukuk* Defaulted and Amount from 2006-2011, (iii) Analysis on Number of *Sukuk* Defaulted Based on Year, (iv) Analysis on Ratings on *Sukuk* Defaulted Firms (v), Analysis on *Sukuk* Type and Number of *Sukuk* Type Default (vi), Analysis on Average Number of Years Before Default and Before/After 2007-2008 Financial Crisis, and (vii) Analysis on Types of Industries and Economic Sectors.

5.2.1 Analysis on *Sukuk* Defaulted and Non-Defaulted Firms

The dataset for the *sukuk* defaulted firms is described and discussed in the following paragraphs. The dataset consists of 30 *sukuk* defaulted firms while another 30 were *sukuk* non-defaulted firms as in Table 5.1. The rationale of six years is as a result of the requirement for six consecutive years of *sukuk* defaulted years that would be used as dependent variables. Table 5.1 shows 60 firms from various sectors such as property (21.67 per cent), securitisation (1.67 per cent), consumer product (13.33 per cent), construction (1.67 per cent), industrial (26.67 per cent), exchange (1.67 per cent), trading service (6.67 per cent), printing and publication (3.33 per cent), SPV (6.67 per cent), investment (13.33 per cent), shipping (1.67 per cent) and port (1.67

per cent). Most of the firms are in industrial and property sectors. Next analysis is on type of sukuk defaulted firms and amount from 2006 to 2011.

Table 5.1: Sukuk Defaulted and Non-Defaulted Firms, 2006-2011

No.	Firms	Sectors	Year	No.	Firms	Sectors	Year
1.	Perspektif	Property	2006	31.	Hong Leong Inds	Consumer product	2008
2.	Maxisegar	Property	2006	32.	Straight A's	SPV	2009
3.	Ahmad Zaki Res	Property	2006	33.	Petronas Gas	Industrial	2009
4.	Europlus	Property	2006	34.	MITP	Port	2009
5.	Dutaland Bhd	Property	2006	35.	Perdana Petroleum	Industrial	2009
6.	Damansara Realty	Property	2006	36.	Oilcorp	Investment	2009
7.	Century Logistic	Property	2006	37.	Naim Holdings	Property	2009
8.	Ambang	Securitisation	2006	38.	Ingress	SPV	2009
9.	J_Niaga	Property	2007	39.	Mulpha	Trading-Services	2009
10.	Damansara Realty	Property	2007	40.	Englotech	Investment	2009
11.	Stenta	Consumer product	2007	41.	Malaysia Steel	Industrial	2009
12.	Degem	Consumer product	2007	42.	Tracoma	Industrial	2009
13.	Royal_M	Consumer product	2007	43.	Straight	SPV	2009
14.	Peremba	Property	2007	44.	PSSB	Shipping	2009
15.	Paradyam	Industrial	2007	45.	Petronas Gas Bhd	Industrial	2009
16.	Memory_T	Industrial	2007	46.	Oxbridge	Property	2009
17.	Lingkar	Construction	2007	47.	Oilcorp	Investment	2009
18.	EP Manufacturing	Industrial	2007	48.	M-Trex	Investment	2009
19.	DRB-Hicom Bhd	Industrial	2007	49.	Malaysia Marine	Industrial	2009
20.	Chemical Co Mala	Industrial	2007	50.	Leader Steel	Industrial	2009
21.	Bursa Malaysia	Exchange	2007	51.	Vastalux	SPV	2010
22.	Atlan Hldg Bhd	Industrial	2007	52.	Sime Darby	Consumer product	2010
23.	Alam Maritim Res	Trading-Services	2007	53.	Nam Fatt	Investment	2010
24.	Adventa Bhd	Industrial	2007	54.	Top Glove	Industrial	2010
25.	ACE Polymers	Consumer product	2007	55.	MMMB	Investment	2010
26.	Evermaster	Industrial	2008	56.	Symphony Life	Trading-Services	2010
27.	BSA	Investment	2008	57.	Tomei	Consumer product	2010
28.	Hubline Bhd	Trading-Services	2008	58.	UMW	Consumer product	2010
29.	Lafarge Malaysia	Industrial	2008	59.	Dawama	Printing, Publication	2011

5.2.2 Analysis on Type of *Sukuk* Defaulted Firms and Amount from 2006-2011

Table 5.2 describes that the types of *sukuk* defaulted firms are mostly from *Bai’Bithaman Ajil* Islamic Debt Securities (BaIDS) and *Murabahah*. From the table, it is shown that most of the types of *sukuk* issued are the mixture of one type of *sukuk* issued or more than one types of *sukuk* issued. Therefore, the amount from the mixture of *sukuk* types *Murabahah* were RM110 million. The highest amount issued from one type of *sukuk* was *sukuk* type *Bai’Bithaman Ajil* Islamic Debt Securities (BaIDS) which was RM986 million and the lowest was *sukuk* type *Murabahah* Multi-Option Notes Issuance Facility (MONIF) which was RM40 million. *Sukuk* type *Bai’Bithaman Ajil* Islamic Debt Securities (BaIDS) recorded the highest amount which was RM2,506 billion. Referring to Table 5.2 and Table 5.4, the total cost losses and incurred to the government were more than RM4.12 billion.

Table 5.2:Type of *Sukuk* Defaulted Firms and Amount from 2006-2011

No.	Issuer Firms and Activities	Issuance Date	Date of Default	Type of <i>Sukuk</i> and Amount (RMmillion)
1.	Europlus Corporation Sdn Bhd- Property development and construction activities	3 Oct 2000	10-Mar-2006	<i>Bai’Bithaman Ajil</i> Islamic DebtSecurities (BaIDS) RM250million
2.	Maxisegar Sdn Bhd- Property development and investment holding	22 Feb 2001	10-Mar-2006	<i>Bai’Bithaman Ajil</i> Islamic DebtSecurities (BaIDS) RM300million
3.	Perspektif Perkasa Sdn Bhd- Property development and investment holding	24 July 2003	10-Mar-2006	<i>Murabahah</i> Underwritten NotesIssuance Facility (MUNIF) RM188million
4.	Ambang Sentosa Sdn Bhd- Implementation of asset-backed securitisation services involves investment, management and monitoring of a pool of assets to ensure collectibility of the assets	28 July 2003	28-Jul-2006	<i>Bai’Bithaman Ajil</i> Islamic DebtSecurities (BaIDS) RM986million

No.	Issuer Firms and Activities	Issuance Date	Date of Default	Type of Sukuk and Amount (RMmillion)
5.	Peremba Jaya Holdings Sdn Bhd- Property development and investment holding	14 Jan 2005	16-Apr-2007	Islamic Medium Term Notes Facility (IMTN)/Murabahah Underwritten Notes
6.	Memory Tech Sdn Bhd- Manufacturing of data storage products such as computer diskettes, video cassette tapes, compact disc recordables (CD-Rs), digital versatile disc recordable (DVD-Rs), plastic computer parts and turnkey project consultancy	28 Oct 2005	07-Jun-2007	<i>Bai' Bithaman Ajil</i> Islamic DebtSecurities (BaIDS) RM320million
7.	The Royal Mint of Malaysia Sdn Bhd-Business of minting of monetary coins including descriptions of commemorative coins and other related products.	12 Nov 2004	08-Jun-2007	<i>Murabahah</i> Multi-Option Notes Issuance Facility (MONIF) RM55million
8.	Paradym Resources Industries Sdn Bhd-Manufacturing of copper rods, copper wire and copper strips for the power and telecommunication industries.	17 July 2004	13-Jun-2007	<i>Murabahah</i> Medium Term Notes Facility (MMTN)/Murabahah Commercial Paper (MCP)
9.	Sistem-Lingkaran Lebuhraya Kajang Sdn Bhd- Under privatisation, Company responsible for the construction the Ring Road involves upgrading and widening of existing roads, designed and construction of new alignment, and thereafter its operations, including deriving toll revenue and maintenance for 33 years	23 Aug 2001	23-Aug-2007	<i>Bai' Bithaman Ajil</i> Islamic DebtSecurities (BaIDS)
10.	ACE Polymers (M) Sdn Bhd- Manufacturing and trading plastic products	15 Sep 2004	14-Sep-2007	<i>Bai' Bithaman Ajil</i> Islamic DebtSecurities (BaIDS)
11.	Stenta Films (M) Sdn Bhd- Manufacture and sale of flexible packaging materials	19 Sep 2003	20-Sep-2007	<i>Murabahah</i> Underwritten NotesIssuance Facility (MUNIF) RM90 million
12.	Jana Niaga Sdn Bhd-Developer and facilities management	4 Nov 2004	15-Nov-2007	<i>Murabahah</i> Underwritten NotesIssuance Facility (MUNIF) RM100 million
13.	Intelbest Corporation Sdn Bhd- Investment holding and property development	28 Feb 2005	29-Feb-2008	<i>Bai' Bithaman Ajil</i> Islamic DebtSecurities (BaIDS)
14.	BSA International Bhd- Investment holding	19 Oct 2004	28-May-2008	<i>Murabahah</i> Medium Term Notes Facility (MMTN)/Murabahah Commercial Paper (MCP) RM150million
15.	Evermaster Group Bhd- Investment holding and	30 Dec 2003	31-Dec-2008	<i>Al Bai' Bithaman Ajil</i> Islamic DebtSecurities (BaIDS)/Murabahah

No.	Issuer Firms and Activities	Issuance Date	Date of Default	Type of Sukuk and Amount (RMmillion)
	integrated timber activities such as manufacturing and trading, timber and timber related products			Multi-Option Notes Issuance Facility (MONIF) RM50million and RM40million
16.	Tracoma Holdings Bhd-Investment holding and the provision of management services	28 Jan 2005	29-Jan-2009	<i>Bai' Bithaman Ajil</i> Islamic Debt Securities (BaIDS) RM100million
17.	Englotech Holding Bhd-Investment holding and providing management services	26 Sep 2005	27-Mar-2009	<i>Murabahah</i> Medium Term Notes Facility (MMTN) RM50million
18.	Oxbridge Height Sdn Bhd-Property development	29 Apr 2005	06-Apr-2009	Islamic Medium Term Notes Facility (IMTN)/ <i>Murabahah</i> Underwritten Notes Issuance Facility (MUNIF) RM104million/RM50million
19.	M-Trex Corporation Sdn Bhd-Investment holding	8 Mar 2005	21-May-2009	<i>Murabahah</i> Medium Term Notes Facility (MMTN)/ <i>Murabahah</i> Commercial Paper (MCP) RM60million
20.	Ingress Sukuk Bhd- To act as a special purpose vehicle (SPV) for the issuance of RM160 million sukuk	9 July 2004	13-Jul-2009	<i>Sukuk Ijarah</i> RM160million
21.	Oilcorp Bhd-Investment holding	7 Oct 2004	07-Oct-2009	Islamic Medium Term Notes Facility (IMTN)/ <i>Murabahah</i> Underwritten Notes Issuance Facility (MUNIF) RM70million
22.	Malaysian International Tuna Port Sdn Bhd-Develop, operate and maintain port	17 May 2007	18-Nov-2009	<i>Bai' Bithaman Ajil</i> Islamic Debt Securities (BaIDS) RM240million
23.	Straight A's Portfolio Sdn Bhd- A special purpose vehicle (SPV) incorporated for sole purpose of issuing RM200 million nominal value private debts securities on behalf of Oil-Line Engineering & Associates Sdn Bhd (OLEA), the immediate holding company under a trust relationship	13 Apr 2007	11-Dec-2009	<i>Murabahah</i> Underwritten Notes Issuance Facility (MUNIF) RM200million
24.	PSSB Ship Management Sdn Bhd.	15 Dec 2004	15-Dec-2009	<i>Bai' Bithaman Ajil</i> Islamic Debt Securities (BaIDS) RM40million
25.	Malaysian Merchant Marine Bhd- Investment holding and the provision of management services	28 Nov 2003	02-Apr-2010	<i>Bai' Bithaman Ajil</i> Islamic Debt Securities (BaIDS) RM120million

No.	Issuer Firms and Activities	Issuance Date	Date of Default	Type of Sukuk and Amount (RMmillion)
26.	Nam Fatt Corporation Bhd- Investment holding and construction of bridges, heavy concrete foundation, roads, factory complexes and other similar construction	10 Feb 2006	06-Apr-2010	<i>Murabahah</i> Medium Term Notes Facility (MMTN)/ <i>Murabahah</i> Commercial Paper (MCP) RM250million
27.	Vastalux Capital Sdn Bhd- A special purpose (SPV) entity to undertake the financing requirements of its holding company	23 Dec 2005	23-Dec-2010	Sukuk <i>Musyarakah</i>
28.	Tomei- Consumer product	12 Nov 2004	08-Jun-2007	<i>Murabahah</i> Multi-Option Notes Issuance Facility (MONIF) RM55million
29.	UMW- Consumer product	17 Apr 1997	21 Nov 2003	<i>Bai' Bithaman Ajil</i> Islamic Debt Securities (BaIDS) RM150million
30.	Dawama Sdn Bhd- Engaged in pre-press, design,type-setting, printing, distribution, and marketing of textbooks and other publications	27 Apr 2009	29-Apr-2011	Sukuk <i>Musyarakah</i>

Source: RAM and MARC database (2012) and Researcher's Analysis

5.2.3 Analysis on Number of Sukuk Defaulted Based on Year

This following descriptive analysis is based on Table 4.1 in Chapter 4 (page 96). The table shows that the number of default started to increase in 2006 with 8 cases (13.33 per cent). Then it increased more than 2 times to be 17 cases (28.3 per cent) in 2007. However in 2008, the cases decreased to 6 cases (10 per cent). This condition was not stable due to the number of *sukuk* default recorded in 2009 was 19 cases as the highest number. It increased 3 times compared to cases in 2008. This was because in 2008-2009, there was a market slowdown. However, in the following year of 2010 and 2011, *sukuk* default reduced significantly to 2 cases (3.34 per cent). Therefore, results show that *sukuk* default events occurred in 2009 coincided with the 2007-2008 global financial crisis that caused highest number of *sukuk* default.

5.2.4 Analysis on Sukuk Ratings of the Sukuk Defaulted Firms

Table 5.3 shows the initial rating and final rating of the 34 *sukuk* default firms under study.

Table 5.3: Sukuk Ratings of the Sukuk Defaulted Firms

Issuer Firms	Initial Rating	Final Rating	Year of Default	Rating Agency
Johor Corporation	BBB3	D	2002	RAM
Moccis Trading Sdn Bhd	BBB3	D	2003	RAM
Hualon Corporation (M) Sdn Bhd	A2	D	2003	RAM
Perak-Hanjoong Simen Sdn Bhd	AA+ _{ID(bg)}	D _{ID(bg)}	2004	MARC
ABI Malaysia Sdn Bhd	A _{ID}	D _{ID}	2005	MARC
Pesaka Astana (M)SdnBh	A+ _{ID}	D _{ID}	2005	MARC
Europlus Corporation Sdn Bhd	A _{ID} MARC-2 _{ID}	D _{ID} /D- _{ID}	2006	MARC
Maxisegar Sdn Bhd	A _{ID}	D _{ID}	2006	MARC
Perspektif Perkasa Sdn Bhd	MARC-3 _{ID}	D- _{ID}	2006	MARC
Ambang Sentosa Sdn Bhd	A+ _{ID}	D _{ID}	2006	MARC
Peremba Jaya Holdings Sdn Bhd	A _{ID} /MARC-2 _{ID}	D _{ID} /D- _{ID}	2007	MARC
Memory Tech Sdn Bhd	A2	D	2007	RAM
The Royal Mint of Malaysia Sdn Bhd	A2/P2	D	2007	RAM
Paradym Resources Industries Sdn Bhd	A- _{ID} MARC-2 _{ID}	D _{ID} /D- _{ID}	2007	MARC
Sistem-Lingkaran Lebuhraya Kajang Sdn Bhd	A _{ID}	D _{ID}	2007	MARC
ACE Polymers (M) Sdn Bhd	A _{ID}	D _{ID}	2007	MARC
Stenta Films (M) Sdn Bhd	MARC-3 _{ID}	D- _{ID}	2007	MARC
Jana Niaga Sdn Bhd	MARC-3 _{ID}	D- _{ID}	2007	MARC
Intelbest Corporation Sdn Bhd	A+ _{ID}	D _{ID}	2008	MARC
BSA International Bhd	A3/P2	D	2008	RAM
Evermaster Group Bhd	A _{ID} MARC-2 _{ID}	D _{ID} /D- _{ID}	2008	MARC
Tracoma Holdings Bhd	A _{ID}	D _{ID}	2009	MARC
Englotech Holding Bhd	A _{ID}	D _{ID}	2009	MARC
Oxbridge Height Sdn Bhd	A1/P1	D	2009	RAM
M-Trex Corporation Sdn Bhd	MARC-2 _{ID}	D- _{ID}	2009	MARC
Ingress Sukuk Bhd	A+ _{ID}	D _{IS}	2009	MARC
Oilcorp Bhd	A _{ID} /MARC-2 _{ID}	D _{ID} /D- _{ID}	2009	MARC
Malaysian International Tuna Port Sdn Bhd	A+ _{ID}	D _{ID}	2009	MARC
Straight A's Portfolio Sdn Bhd	MARC-1 _{ID}	D- _{ID}	2009	MARC
PSSB Ship Management Sdn Bhd	AA _{ID}	D _{ID}	2009	MARC
Malaysian Merchant Marine Bhd	AA _{ID}	D _{ID}	2010	MARC
Nam Fatt Corporation Bhd	A+ _{ID} /MARC-1 _{ID}	D _{ID} /D- _{ID}	2010	MARC
Vastalux Capital Sdn Bhd	AA- _{IS}	D _{IS}	2010	MARC
Dawama Sdn Bhd	A+ _{IS}	D _{IS}	2011	MARC

Source: RAM and MARC

Some of the firms' initial rating was high, AA+_{ID(bg)} down graded to D_{ID(bg)} the final rating, some of the firms initial rating was, A+_{ID} down graded to D_{ID} the final rating, some of the firms initial rating was A+_{ID} down graded to D_{IS} the final rating, some of the firms initial rating was A+_{ID}/MARC-1_{ID} down graded to D_{ID}/D-_{ID} the final rating, some of the firms initial rating was A+_{IS} down graded to D_{IS} the final rating, and some of the firms initial rating was AA_{ID} down graded to D_{ID} the final rating. RAM's and MARC's rating symbols and definition are as stated in Appendix I.

As reported by the Rating Agency Malaysia Berhad (RAM) in 2004, the Malaysian corporate *sukuk* market continuously expanded and became matured in the year of 2004, proclaiming the fact that Islamic finance played an imperative role in mobilizing the capital required by corporate sectors. Reported was also the entry of 51 corporates *sukuk* issues, which also came with an aggregate value of RM15.03 billion. These vast amounts represent 55 per cent of total Ringgit Malaysia that denominated corporate bonds issued which grossed up to RM27.37 billion. These phenomenon of encouraging response in *sukuk* issuances illustrated that *Shariah* compliant financial instruments were in high demand and had gained the trust as well as confidence from the investors. In summary, the Rating Agency Malaysia Berhad (RAM) (2004) report showed that *sukuk* issuance had been a popular choice among private or public sectors to gain profit for their organizations. Further to that, Bank Negara Malaysia's Governor also mentioned that Islamic finance's role has been widened in mobilising and channelling funds to different kinds of investment activities across borders, which had given vital impact to allocate funds not only in Malaysia but assisted in international trades and investments as well. As of recent, the Islamic finance plays a significant role as the *sukuk* market is becoming an essential component to develop

the global *sukuk* market. There have been impressive growth of interest in the *sukuk* issuance by corporations, sovereigns and multinational corporations. It is clear that the demand for *sukuk* significantly exceeds the supply of the financial instrument.

5.2.5 Analysis on *Sukuk* Type and Number of *Sukuk* Type Default

The study reveals that the highest incidence of *sukuk* default *murabahah* registered in Malaysia during the period of 2006 to 2011. *Sukuk Bai Bithaman Ajil* (BBA) recorded the second highest default during the same period. Both this *sukuk* is based on sales and assets-based structure. This finding is in line with findings by other researchers such as Ahmad and Wahab (2012) and (Zakaria et al., 2013). Coincidentally, BBA and *Sukuk Murabahah* are two of the most popular *sukuk* structures that have been released since the year 2006.

Table 5.4 shows that the highest number of type of *sukuk* default were *sukuk* type *Bai' Bithaman Ajil* Islamic Debt Securities (BaIDS) which were 16, followed by *Murabahah* Underwritten Notes Issuance Facility (MUNIF) and *Murabahah* Medium Term Notes Facility (MMTN)/*Murabahah* Commercial Paper (MCP) which were 4 and *sukuk* type *Musyarakah* were 2. The rest were the mixture type of *sukuk* which was 1 respectively. By referring to Table 5.2 and Table 5.4, *sukuk* type of *Bai' Bithaman Ajil* Islamic Debt Securities (BaIDS) which were 16, represented 59.98 per cent. Subsequently, for type of *Murabahah* Underwritten Notes Issuance Facility (MUNIF) and *Murabahah* Medium Term Notes Facility (MMTN)/*Murabahah* Commercial Paper (MCP) which were 8, represented 26.04 per cent from the total amount. It is shown that *Bai' Bithaman Ajil* Islamic Debt

Securities (BaIDS) and *Murabahah* were the dominant types of *sukuk* issued with 24 issuances, represented 86.02 per cent.

Table 5.4: *Sukuk* Type and Number of *Sukuk* Type Default

No.	<i>Sukuk</i> Type	Number of <i>Sukuk</i> Type Default	Total Amount (RM)	Percentage (%)
1.	<i>Bai' Bithaman Ajil</i> Islamic Debt Securities (BaIDS)	16	2,506	59.98
2.	<i>Murabahah</i> Underwritten Notes Issuance Facility (MUNIF)	4	578	13.83
3.	<i>Murabahah</i> Medium Term Notes Facility (MMTN)/ <i>Murabahah</i> Commercial Paper (MCP)	4	510	12.21
4.	<i>Murabahah</i> Islamic Debt Securities (MIDS)	1	N.A	N.A
5.	<i>Sukuk Musyarakah</i>	2	N.A	N.A
6.	Islamic Medium Term Notes Facility (IMTN)/ <i>Murabahah</i> Underwritten Notes	1	N.A	N.A
7.	<i>Murabahah</i> Multi-Option Notes Issuance Facility (MONIF)	1	110	2.63
8.	<i>Al-Bai' Bithaman Ajil</i> Islamic Debt Securities (BaIDS)/ <i>Murabahah</i> Multi-Option Notes Issuance Facility (MONIF)	1	90	2.15
9.	<i>Murabahah</i> Medium Term Notes Facility (MMTN)	1	N.A	N.A
10.	Islamic Medium Term Notes Facility (IMTN)/ <i>Murabahah</i> Underwritten Notes Issuance Facility (MUNIF)	1	N.A	N.A
11.	<i>Sukuk Ijarah</i>	1	160	3.83
12.	Islamic Medium Term Notes Facility (IMTN)/ <i>Murabahah</i> Underwritten Notes Issuance Facility (MUNIF)	1	224	5.36
TOTAL			4,178	100

5.2.6 Analysis on Average Number of Years Before *Sukuk* Default and Before/After 2007-2008 Financial Crisis

Table 5.5 depicts that 1 firm (2.8 per cent) came into default after 1 year. There were 6 firms (17.1 per cent) reported to be default after 2 years followed by 10 firms (28.6 per cent) after 3 years. Then, 7 firms (20 per cent) were default after 4 years and 5 years. Another 3 firms (17.1 per cent) were default after 6 years and lastly 1 firm (2.8 per cent) was default after 8 years of issuance. Following the analyses, the statistics indicates that the survival of *sukuk* issuer firms in Malaysia was in between 1

to 6 years. Furthermore, the survival rate of *sukuk* issuer firms was mostly just 3 years which means that public unlisted *sukuk* firms were exposed to default after just a few years of issuance.

Table 5.5: Average Number of Years Before *Sukuk* Default and Before/After 2007-2008 Financial Crisis

Firms	Issuance Date	Default Date	Number of Years before Default	Number of Years Before/After 2007-2008 Financial Crisis
1	25 Jan 1999	27 Jun 2002	3 years	5 years before
2	11 Dec 2000	3 Jun 2002	3 years	5 years before
3	17 Apr 1997	21 Nov 2003	6 years	4 years before
4	15 Nov 2001	30 Nov 2004	3 years	3 years before
5	30 May 2003	04-Aug-2005	2 years	2 years before
6	1 April 2004	30-Sep-2005	1 year	2 years before
7	3 Oct 2000	10-Mar-2006	6 years	1 year before
8	22 Feb 2001	10-Mar-2006	5 years	1 year before
9	24 July 2003	10-Mar-2006	3 years	1 year before
10	28 July 2003	28-Jul-2006	3 years	1 year before
11	14 Jan 2005	16-Apr-2007	2 years	2007-2008 Financial Crisis
12	28 Oct 2005	07-Jun-2007	2 years	2007-2008 Financial Crisis
13	12 Nov 2004	08-Jun-2007	3 years	2007-2008 Financial Crisis
14	17 July 2004	13-Jun-2007	3 years	2007-2008 Financial Crisis
15	23 Aug 2001	23-Aug-2007	6 years	2007-2008 Financial Crisis
16	15 Sep 2004	14-Sep-2007	3 years	2007-2008 Financial Crisis
17	19 Sep 2003	20-Sep-2007	4 years	2007-2008 Financial Crisis
18	4 Nov 2004	15-Nov-2007	3 years	2007-2008 Financial Crisis
19	28 Feb 2005	29-Feb-2008	3 years	2007-2008 Financial Crisis
20	19 Oct 2004	28-May-2008	4 years	2007-2008 Financial Crisis
21	30 Dec 2003	31-Dec-2008	5 years	2007-2008 Financial Crisis
22	28 Jan 2005	29-Jan-2009	4 years	1 year after
23	26 Sep 2005	27-Mar-2009	4 years	1 year after
24	29 Apr 2005	06-Apr-2009	4 years	1 year after
25	8 Mar 2005	21-May-2009	4 years	1 year after
26	9 July 2004	13-Jul-2009	5 years	1 year after
27	7 Oct 2004	07-Oct-2009	5 years	1 year after
28	17 May 2007	18-Nov-2009	2 years	1 year after
29	13 Apr 2007	11-Dec-2009	2 years	1 year after
30	15 Dec 2004	15-Dec-2009	5 years	1 year after
31	28 Nov 2003	02-Apr-2010	7 years	2 years after
32	10 Feb 2006	06-Apr-2010	4 years	2 years after
33	23 Dec 2005	23-Dec-2010	5 years	2 years after
34	27 Apr 2009	29-Apr-2011	2 years	3 years after
35	23 Aug 2006	1 Mar 2014	8 years	3 years after

1 year = 1 firms (2.8%); 2 years= 6 firms (17.1%); 3 years=10 firms (28.6%); 4 years=7 firms (20%); 5 years=7 firms (20%); 6 years=3 firms (17.1%); 8 years=1 firms (2.8%)

5.2.7 Analysis on Type of Industries and Economics Sector

Table 5.6 shows the comparison between the number of *sukuk* defaulted firms and number of *sukuk* non-defaulted firms in terms of type of industries and economics sector in this *sukuk* default study. Leading in business activities were from industrial sector (7 firms or 23.33 per cent), followed by property sector and consumer products sector (5 firms or 16.67 per cent) respectively. Besides that, in investment sector were 4 firms or 13.32 per cent, Special Purpose Vehicles (SPV) and trading services sector (2 firms or 6.67 per cent) respectively, and sector in construction, exchange, port, printing and publication, as well as shipping sector (1 firm or 3.33 per cent) while none involved in securitisation for *sukuk* defaulted firms.

Meanwhile, for *sukuk* non-defaulted firms, the types of industries and economics sectors involved in this study are mainly from industrial sector (10 firms or 33.33 per cent), property sector (8 firms or 26.67 per cent), investment sector and consumer product sector (3 firms or 10 per cent) respectively, while Special Purpose Vehicles (SPV) and trading services sector (2 firms or 6.67 per cent), printing and publication sector, and securitisation sector (1 firms or 3.33 per cent) and none for construction sector, exchange industries, port sector and shipping sector, for *sukuk* non-defaulted firms. From the table, there are 12 industries and economics sectors that had been classified from 60 *sukuk* defaulted and non-defaulted firms as in Table 5.6 below and Figure 5.1.

Table 5.6: Types of Industries and Economics Sector

No.	Sectors	No.of Defaulted Firms	%	No. of Non-Defaulted Firms	%
1.	Industrial	7	23.33	10	33.33
2.	Property	5	16.67	8	26.67
3.	Investment	4	13.32	3	10
4.	Consumer products	5	16.67	3	10
5.	Construction	1	3.33	-	-
6.	Exchange	1	3.33	-	-
7.	Port	1	3.33	-	-
8.	Printing and publication	1	3.33	1	3.33
9.	Securitisatation	0	0	1	3.33
10.	Shipping	1	3.33	-	-
11.	SPV	2	6.67	2	6.67
12.	Trading service	2	6.67	2	6.67

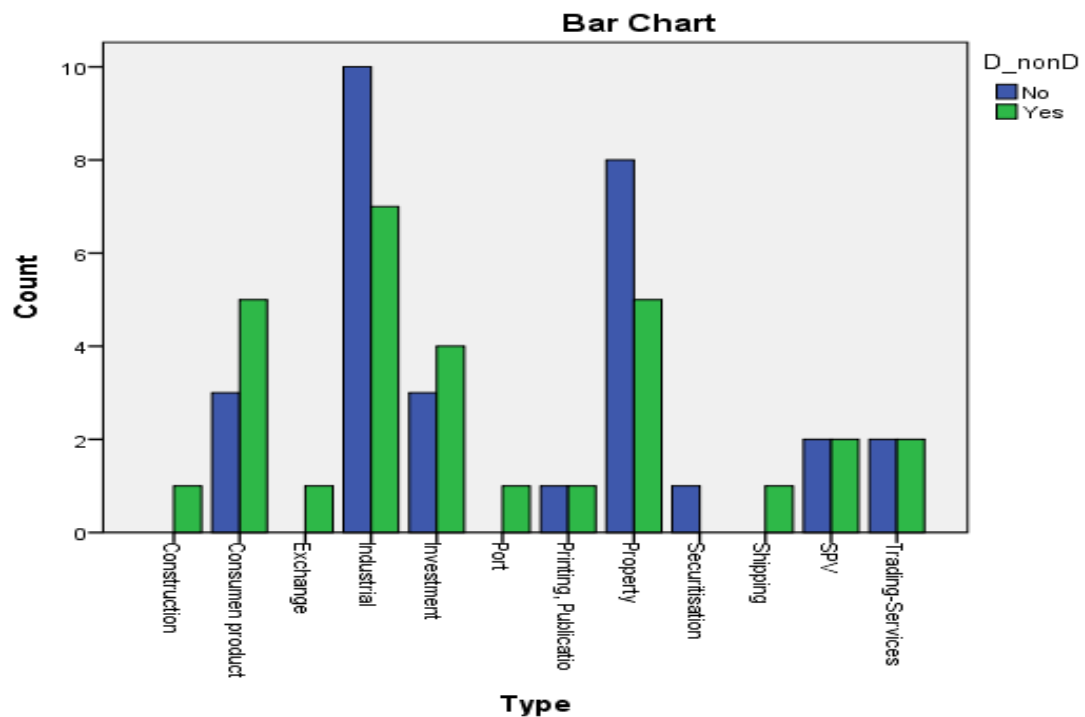


Figure 5.1: Default Non Default *Sukuk* Firms

Sukuk default by sector that highlighted in Table 5.6 with the industrial holdings sector recorded the highest number of default firms in the period under review, followed by property sectors and consumer products. Next was investment sector. However, the pattern is surprisingly similar for *sukuk* non-defaulted firms in terms of industrial and property sectors that appeared to be the most resilient. This is proof which industrial and economic sectors that offered unstable operating environment, and similarly industrial and economic sectors that were resilient during crisis in Malaysia. Eventhough the number of industrial and property sectors of default *sukuk* firms were lower (12 firms) than non-default *sukuk* firms (18 firms), but in terms of industries and economic sectors, both indicated the same. Industries and economic sectors offered unstable environment as well as resilient for unhealthy and healthy firms. However, it also indicated from the result that industrial sector and property sector were also stable firms during the 2007-2008 financial crisis.

Having said that, based on this scenario, it could be suggested that the most unstable and the most resilient industrial firms and property were industrial and property sector. Those sectors are primary sectors in Malaysia.

5.3 Analysis on Liquidity Risk Indicators

This section is conducted to obtain the first objective of this study, which is to investigate the relationship between liquidity risk to the default and non-default *sukuk* issuing firms under study. In this study, liquidity risk involves two aspects; which are quick ratio (QR) and cash to asset ratio (CR), that investigated its relationship towards default and non-default *sukuk* firm. As such, this section will provide answers to Hypothesis H1 (page 16) in Chapter 1. The finding is shown in Table 5.7.

Table 5.7: Analysis on Quick Ratio and Cash to Asset Ratio of Liquidity Risk

		B	S.E.	Wald	df	Sig. (p)	Exp(B)
Step 1	Quick ratio	-1.539	.557	7.621	1	.006	.215
	Cash to asset ratio	1.288	.559	5.316	1	.021	3.625
	Constant	1.534	.800	3.677	1	.055	4.635

From sig. or p value in the Table 5.7 above, it shows that the quick ratio ($p = 0.006$) and cash to asset ratio ($p = 0.021$) have p value and less than 0.05 ($p > 0.05$). This means the quick ratio influences the *sukuk*'s default significantly. Thus H1a is accepted. Cash ratio also influences the *sukuk*'s default significantly. Thus H1b is accepted. Liquidity risk influences the *sukuk*'s default significantly. Thus, H1 is accepted.

Furthermore, Nagelkerke R square (Nagelkerke $R^2 = 0.272$) from model summary shows that the contribution of quick ratio and cash to asset ratio are only 27.2 per cent to the default and non-default *sukuk*. Result of a Tree from WEKA software also showed path analysis towards the default and non-default *sukuk* as presented in Figure 5.2 below. It shows *sukuk* default and non default firms' characteristics.

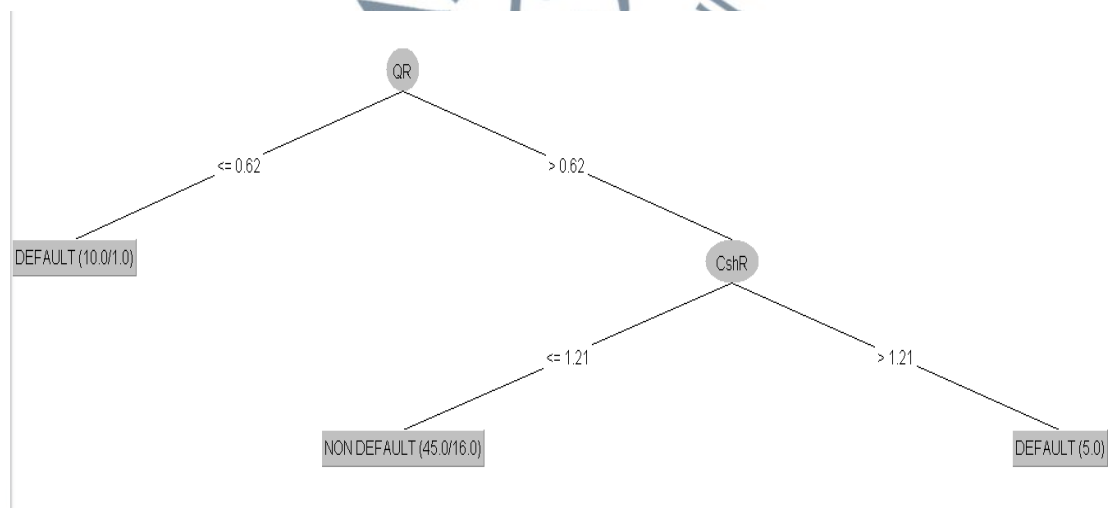


Figure 5.2: Tree Analysis *Sukuk* Default and Non-Default Firm Characteristics

Post pruning node from the tree was conducted in this analysis. As result, Quick ratio (QR) shows the levels of cash and other current assets that are readily convertible to cash than short-term obligations of an organisation. A Tree Analysis shown that firm with $QR \leq 0.62$ classified as default *sukuk* firm. However, quick ratio of 0.5 would recommend that a firm is able to settle half of current liabilities immediately. Quick ratio is seen as indicator of entity's ability and should be analyzed over a period of time. It was also analyzed towards the context of industrial firms.

Therefore, firms need to maintain a leverage ratio quickly enough against liquidity risk given the level of predictability and volatility in certain business sector among other considerations. The more uncertainty in the business environment, the more than likely that the firm will maintain a higher quick ratio. However, where cash flow is stable and predictable, the firm will endeavour to ensure the quick ratio at a low level. In each case, firms must achieve the right balance between liquidity risk arising from low quick ratio and risk of loss resulting from the high quick ratio.

In the situation where the quick ratio is greater than industry average, it is suggested that when firms are investing too much of working capital resources, more profitable business can be used elsewhere, on one hand. If firms have too much spare cash, it can consider investing surplus funds in new ventures and in the case of a firm, investment options may be carefully chosen to return surplus funds to shareholders in the form of dividend increase.

Apart from that, quick ratio lower than industry average recommends that the firm's risk is too much and do not maintain appropriate buffer liquid resources.

Alternatively, a firm may have lower quick ratio due to better credit conditions with suppliers compared to competitors. When several periods of quick ratio were

analyzed, it is needed to consider account seasonal variation in some industries that may cause the ratio to be higher or lower at specific times of the year. As a seasonal business full experience with irregular activities that led to the current level of assets and liabilities that will vary from time to time. Quick ratio must be evaluated in the context of industry-specific organization. As for retail sector being studied in this research where the consumer products is a specific business sector, the quick ratio was very low.

In addition, firms leading the retail sector or consumer products supposedly capable to negotiate credit terms with suppliers due to their authority in the market that leads to high current liabilities relatively against their liquid assets. Business environment is also quite stable in the retail sector or consumer products, and the expansion of operations is increased which allows the firms to maintain lower quick ratio without risking too much. Previous literature has revealed that liquidity is stable in the stock price. However this study indicated that liquidity was in an unstable market conditions due to the financial crisis.

The 2007-2008 financial crisis also showed that liquidity risk is important in predicting *sukuk* default firms (Aziz, 2008; Bernanke, 2009; Mersch, 2009; Mirakhor & Krichene, 2009; OECD, 2009). During 2009, liquidity risk became one of the most critical risks that was faced by financial institutions and Islamic banks, according to Iqbal (2008). The importance of liquidity risk is because of its role in keeping up firms and systemic resilience in the face of shocks and, on the other hand, because the whole system of contagion due to liquidity shocks to a firm single (Adel, 2010).

Investors usually seem to have limited concern to the occurrence of costs or liquidity risk when investing in the equity market, probably because of the 'liquidity'

that is inconceivable, imperceptible, and difficult to measure, does not denote a serious problem in this most active market. However, some research papers revealed that liquidity is considered by investors in the stock market and there are significant positive returns on premium occurrence in stock. During the extreme market environment, such as the financial turmoil at the end of year 2008, liquidity generally became a greater focus. The unpredictable liquidity problem was proven to disperse so deeply into the financial markets and degenerated for so long with such unpleasant impacts that some record breaking detriments were renewed several times in just a few months from September 2008. On the contrary, liquidity has always been a crucial pricing factor. With increasing interest in liquidity issues and newly accepted data, it is a convenient time to re-examine liquidity price in the stock market (Xia, 2016).

5.4 Model of the Liquidity Risk Indicators

From B value in the Table 5.7, analysis on liquidity risk indicator proposes a model of the default and non-default *sukuk* firms as below:

$$\text{Logit} \left(\frac{\pi}{1-\pi} \right) = 1.534 - 1.539X_1 + 1.288X_2 \dots\dots\dots (i)$$

Where:

$\text{Logit} \left(\frac{\pi}{1-\pi} \right)$ = default and non-default *sukuk* firms

X_1 = Quick Ratio

X_2 = Cash to Asset Ratio

5.5 Analysis on Solvency Ratio Indicators

Solvency ratio is formed by Debt To Equity (DtER) and Interest Coverage Ratio (ICR). The results are presented in Table 5.8.

Table 5.8: Analysis on Solvency Ratio toward the Default and Non-Default *Sukuk*

		B	S.E.	Wald	df	Sig. (p)	Exp(B)
Step 1	DtER	1.683	0.528	10.142	1	0.001	5.381
	ICR	-0.352	0.299	1.390	1	0.238	0.703
	Constant	-2.044	0.914	5.002	1	0.025	0.130

From sig. or p value in the Table 5.8, results of analysis show that DtEr has sig. less than 0.05 ($p = 0.001$). ICR have sig value more than 0.05 ($p=0.238$). Thus, debt to equity ratio influences the *sukuk* default, meanwhile ICR does not influence the *sukuk*'s default. Thus, hypothesis H2 that the solvency ratio influences the *sukuk*'s default is not fully accepted. H2a that the debt to equity ratio influences the *sukuk* default is accepted. However, H2b that ICR influences the *sukuk*'s default is denied. It confirmed a positive and significant effect of debt to equity ratio on *sukuk* default-non-default firm. This finding is in covenant with prior empirical studies of Abdeljawad et. al., (2013), as well as Salawu & Agboola (2008). However this was contrary to the outcome of the study of Abubakar et al., (2015) which found insignificant association between debt to equity ratio and default firm.

Solvency ratio is the degree to which investors use borrowed money. Therefore, solvency ratio is expected to be related inverse to bond rating. Klock et al., (2005) also found that strong anti-takeover provisions are closely related to a lower cost of debt financing during the anti-takeover provisions weakness has been associated with a higher cost of debt financing. Previous studies found mixed evidence on the effects of solvency ratio over the relationship between the financial

ratio and yield *sukuk* as well as rating of *sukuk*. It has significant negative correlation with ratings. However, Purwaningsih (2013) showed that solvency ratio has no significant impact to the bond rating. That study showed that solvency ratio does not affect the relationship between the ratio of financial revenue and *sukuk* (*sukuk* rating).

Result of logistic regression is also supported by Tree Analysis using J48. Post pruning node from the tree was conducted in this analysis. It is shown that only debt to equity ratio has significant effect in path analysis in classifying default non default *sukuk* firm as presented in Figure 5.3. It shows the default and non default firms' characteristics.

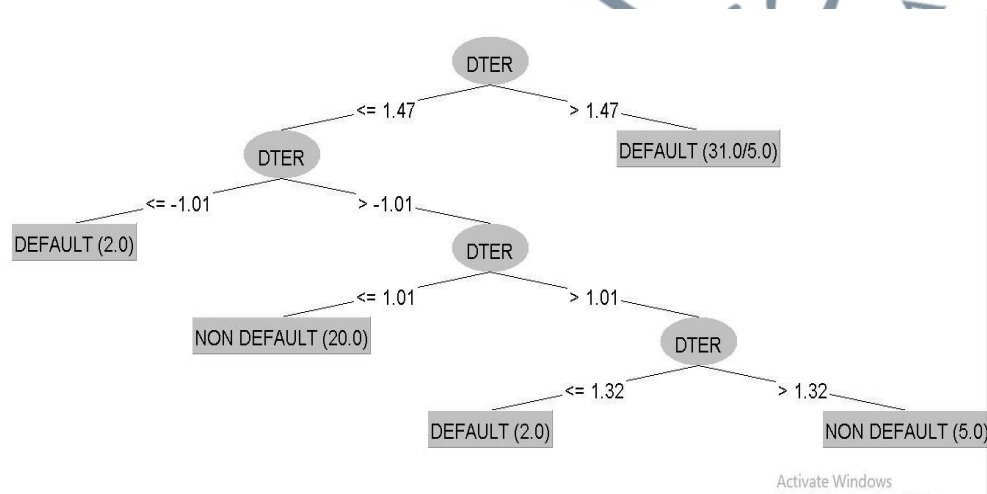


Figure 5.3: A Tree Analysis Result of Debt to Equity Ratio Toward Default Non Default *Sukuk* Firm Characteristics

Figure 5.3 shows that if firm has Debt to Equity Ratio above 1.32 to 1.47, then the firm is non defaulted *sukuk*. If the firm has Debt to Equity Ratio between -1.01 and 1.32 ($-1.01 \leq \text{DtER} \leq 1.32$) and more than 1.47, thus the firm is defaulted *sukuk*. The recent financial system is primarily debt-driven and interest-based. Debt and interest are the two principle factors in banking instability and, as such, principle factor of the recent financial crisis (Mirakhor, 2009). Minsky's ideas in Smolo (2010) described the

financial instability that although default cases were increasing in 2006, banks did not decelerate on loans.

As soon as the beginning of the financial crisis in Malaysia, panic scattered national wide. It impacted the uncertainty and insolvency of many firms that made banks became more conscious to risk, because they were afraid of contagion. Moreover, the situation were worsen with the severeness and gloom of interbank market froze, credit instruments, stressing financial firms to debt repayments (Bordo, 2008; Mirakhor & Krichene, 2009; Sarkar, 2009).

Further, Islamic finance refers to financial activities that are guided by Islamic law (*Shariah* principle), which rigidly forbids the interest compensation and acceptance. In addition, not only must the investment be activities in accordance with the principles of ethics in the *Shariah*, they should also take into account public interest considerations (*masalih*). Islamic finance at present is the sincere excuse to the IFI insulation of the crisis in the basic prohibition of the *Shariah* of *riba* (interest) and *gharar* (non-essential ambiguity) on a side and restricted of Islamic finance on other side. It can be destructive to the future development of IFI. IFI only plays the role of the ordinary (conventional) financial system and converge towards the ordinary systems.

These critics show Fuzzy copy of IFI products but ordinary products (Ahmed, 2009; Brant, 2009; Hassan & Kayed, 2009b). Due to its similarities to the ordinary financial system, IFI includes deficiencies similar to the principal of the recent global financial crisis and it is therefore exposed to the crisis themselves (Ahmed, 2009).

These deficiencies consist lack of regulatory surveillance systems/products, haze,

number of risk these products have in banks and financial firms as well as restricted risk sharing in the products characteristic produced so far.

Markets perform more effectively when business is funded by another choice of the banking systems, or diverse method to perform banking system. Islamic finance system has appropriate inspection and control measure that presents more discipline into economy and credit link to increase into real economic growth. It is able to reduce the frequency and severity of financial crises. The Islamic system does not authorize the establishment of debt through direct loans and borrowing. It rather demands the existence of debts through the sale or real assets lease through sales-based modes of financing as well as *murabahah*, *ijarah* and *sukuk*.

Take for example the Subprime mortgage crisis in the US that was a result of surplus and negligent loans. Securitization or initiate to disseminate model of funding played an important role in this crisis. Owner of mortgage collateralized debts by mixing the prime and subprime debts. By selling collateralized debt obligation (CDOs), they passed the overall risk of default to major buyers, therefore, less incentive needed to be considered (Ghafour, 2008). Therefore, some banks have either failed or been bailed out or nationalized by the governments in the US, UK, Europe and some other countries. Absolutely, *riba* (interest and usury) and *maysir* (gambling and speculative activities equal gambling) are the main factors that led to the said financial crisis. Prohibition of *riba* and *maysir* in Islam along with Islamic values and morale, and identification of other interest in any one economic fate, if adhered to, could not have brought the world to the current financial crisis. To prevent individuals and communities that are independent from the financial and economic crisis are clearly visible as one of the objectives of the firms.

The disorders that strike world financial markets currently have a significant questions on the needs for industries to find preferences in financing their businesses and maintaining them. The answer is business financing conducted by Islamic finance method based on profit and loss sharing mode (PLS) which is not based on interest (interest-based). Islamic finance has penetrated a new stage of developments, appears bright after the global financial crisis that brought insolvency towards many firms as an alternative that is fairer and more efficient compared to the western approaches (interest-based). Due to the fact that interest-based transactions are forbidden, Islam promotes businesses and trade activities to raise fair and coherent profits. It always has a close link between financial flow and productivity in Islamic finance. It assists to the isolation from the prospect risks that generates from overage impact and financial activities. Another main principle of Islamic finance is the risk and profit-sharing feature transactions (*mudharabah* contracts). It requires disclosure in high level and transparency in the Islamic finance system. These disclosures permit the market to provide compatible risk premiums to firms, therefore gaining the prospect for market discipline to react. The features that are requisited by *Shariah* order (Islamic law), assign built-in checks and balances that oblige to confirm the financial stability of the Islamic finance system. Due to the features, Islamic finance has undergone a huge transformation and development especially since the year 2000, and the amount has increased tremendously (Ahmed, 2010).

5.6 Model of the Solvency Ratio Indicators

The proposed model of *sukuk* default is expected as below:

From Exp(B) value in the Table 5.9, debt to equity ratio (Exp(B) = 5.381) is the most dominant solvency ratio indicator in contributing to the default and non-default *sukuk* firms subsequently followed by interest coverage ratio (Exp(B) = 0.703).

Analysis on solvency ratio proposes a model of the default and non-default *sukuk* firms as below:

$$\text{Logit} \left(\frac{\pi}{1-\pi} \right) = -2.044 + 1.683X_1 - 0.352 X_2 \dots\dots\dots (ii)$$

Where:

$\text{Logit} \left(\frac{\pi}{1-\pi} \right)$ = default and non-default *sukuk* firms

X_1 = debt to equity ratio

X_2 = interest coverage ratio

5.7 Analysis on Corporate Governance Characteristics

Corporate governance characteristic is formed by two variables; Independent Director (ID), and Audit Committee (AC) by using data from firms' annual reports and database. The results are presented in Table 5.9.

Table 5.9: Result of Analysis on Corporate Governance

		B	S.E.	Wald	df	Sig. (p)	Exp(B)
Step1	ID	0,734	1,158	0,402	1	0,526	2,083
	AC	4,554	1,501	9,206	1	0,002	0,011
	Constant	0,875	0,376	5,410	1	0,020	2,400

From sig value (p), result shown that only existence of audit committee (AC) has significant relationship towards default or non default *sukuk* firms. However,

detail results are presented by using Tree Analysis J48 method WEKA software as shown in Figure 5.4 below. It also shows firm characteristics.

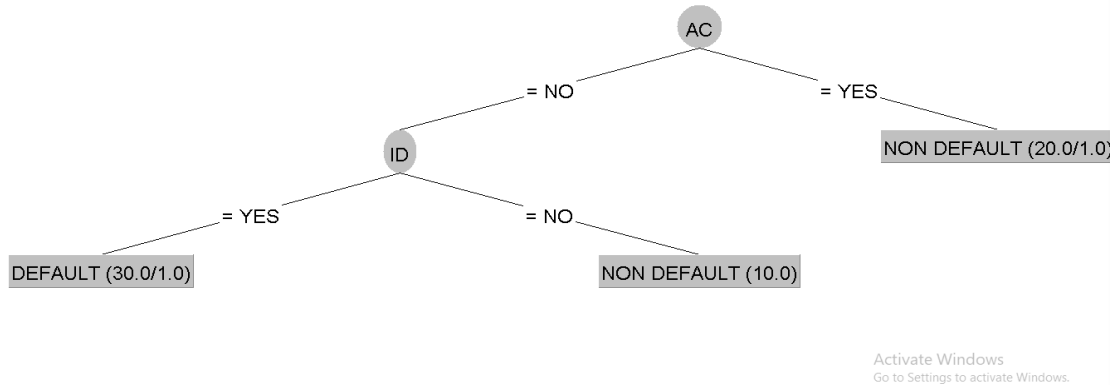


Figure 5.4: A Tree Analysis of Corporate Governance towards Default Non Default *Sukuk* Firms Characteristics

Post pruning node from the tree was conducted in this analysis. As result, a Trees Analysis result shown that audit committee and independent director have significant effects towards default non default *sukuk* firms. Presence of independent director affect significantly if the firm has no audit committee. An independent director that form less than one third of the board's membership impact the *sukuk* default firms, while independent director that form at least one third of the board's membership impact the *sukuk* non-default firms. H3a that mentions the audit committee influences the *sukuk*'s default is accepted while H3b the independent director influences the *sukuk* default is denied. Thus, H3 that mentions the corporate governance influences the *sukuk*'s default is accepted. It is supported by Ashbaugh-Skaife et al., (2006) that corporate governance has significant effect to the *sukuk* default firm.

i. Malaysian Code on Corporate Governance (MCCG)

This study uses MCCG 2000-2007 and *Shariah* Committee (SC) 2004 and *Shariah* Governance Framework 2011, since these years fell within the period of 2006-2011. Balance of Board uses categorical data to measure corporate governance characteristics based on Logit Model. The SC released the MCCG that assembles the desired corporate governance view. The aim of the code is reinforcing the responsibilities and roles such as the board of directors, management and auditors. The revised issuance of the MCCG is designed to strengthen the board's structure and composition. The principles provided in the MCCG must be embraced by institutions or corporations to attain not only competitiveness in the capital market industry but also to be used as an ethical and justifiable governance record. The salient features of MCCG 2007 Part II are as follows:

1. The Board of Directors

It should obviously discharge its responsibilities by examining and applying a strategic plan for the firms, supervising the organization of the firms, implementing relevant investor programmes for the company, identifying and managing risks, supervising and controlling management including its appointment and remuneration and lastly, by ensuring proper rules and applicable laws for enhancing the integrity of the firm's internal control systems.

2. Composition of the Board

There should be an obvious division of responsibilities between the chairman and the chief executive officer (CEO). This is to confirm a stability of power and authority. It is recommended that if there is a consolidation of powers borne by both the chairman and CEO, it should be notified and defined publicly. It can consist of

non-executive directors as well, who should be competent and able to give independent judgement. They need to compose at least one-third of the membership.

3. Appointments to the Board

A committee of directors should be appointed, comprising mainly of independent non-executive directors. It is liable for proposing new nominees to the board and occasionally evaluating directors. Its duty needs to be clearly delineated as to whether it has to act on behalf of the board or is merely assigned to examine a particular issue and revert to the board with its findings. As for appointing new directors, training and relevant orientation should be provided by every corporation.

4. Board Structures and Procedures

The board should meet regularly with due notice of the issues to be deliberated. It should record details and findings of meeting held. The frequency of meetings should be disclosed including the attendance of each member.

5. Relationship of the Board to Management

The Board, in conjunction with CEO, should promote descriptions of position for itself and for the CEO, covering definition of the limits to management's responsibilities. Furthermore, it should legitimize or promote, with the CEO, the corporate objectives for which the CEO is liable to be responsible to satisfy.

6. Rights of Directors

Directors are given the privilege to access all information related to the corporation's matters in furtherance of their duties. Besides that, they also have the right to access the advice and services of the firm secretary.

The Audit Committee is one of the crucial elements and organs of leadership. It must be established by the board and comprise leastwise three members. Majority of

members are independent and should be non-executive directors. They must have knowledge of finance and leastwise one member must be a member of an accounting association body.

The MCCG has specifically laid out inter alia the functions and duties of the audit committee, which are:

- i. To analyse the financial statements of the board (quarterly or yearly);
- ii. To examine problems and requirement emerging from the temporary and final audits;
- iii. To consider the primary findings of internal investigations and management's response. Investigations are to be conducted for any necessary matter and have complete access to information; and
- iv. To meet regularly and record any discharging of its duties and responsibilities.

There are two kinds of auditors; external and internal auditors. Both of them are necessary to work and communicate closely with the committee. It is recommended that the committee should organize meetings with external auditors without the presence of the executive board members. It should be conducted leastwise every six months.

Internal audits need to report regularly to the committee and should be independent and impartial in giving its decisions and findings. A transparent correlation between the audit committee and the board is imperative whereby all information obtained by the audit committee must be disclosed to the board. The board subsequently will disclose such information to shareholders. This is due to the fact that the interest of shareholders should be of paramount consideration and thus,

the board as well as management must ensure and maintain an effective communication with shareholders.

ii. Committee Governance Guidelines to Financial Institutions of Islamic Shariah (GPSI) in 2004 and Shariah Governance Framework 2011 (SGF 2011)

It is important for a spacious regulatory and supervisory infrastructure of the Islamic banking and finance system. Corporate governance guidelines are generally more focused on the functions of the Board as a whole as well as effective management. Introduction of Committee Governance Guidelines to Financial Institutions of Islamic *Shariah* (GPSI) in 2004 has focused on the duties and responsibilities of the Committee's jurisdiction at the industry level. The objectives of the framework are (i) To provide an outline of expectations; (ii) To form comprehensive; and (iii) To outline the respective functions.

Seven (7) principles were outlined by SGF 2011 in order to ensure institutions to be able to establish a blast framework of *Shariah* governance. Requiring a strong and efficient administration of the *Shariah* system as a fundamental part of corporate governance in Islamic financial institutions (IFIs), however it was found that a lot have been written on the subject. In view of the lack of literature, this study is considered to be a small effort towards contributing to the development of the *Shariah* system by current governance practices and jurisdiction throughout the country. This study uses survey questionnaire methods in obtaining input State facts of *Shariah* framework and practices.

This study aims to form the *Shariah* governance practices by identifying current regulatory framework (composition, functions, role, independence, efficiency,

disclosure, and transparency of *Shariah* Board structure) to provide awareness on some of the important issues relating to the administration of the *Shariah* IFIs and to promote a better acceptance of the *Shariah* governance practices. Thus, enabling the IFIs to protect the interests of stakeholders better. The result shows the IFIs' perception on the roles of the Board's jurisdiction and significant influence over them.

The survey results defined that some IFIs had different perspectives on the role and responsibilities of the *Shariah* board. Around 85 per cent of IFIs consider the *Shariah* board as supervisory and advisory while a minority of them (10 per cent) perceive it as supervisory and 17 per cent as advisory. Interestingly, 4 per cent of IFIs consider the *Shariah* board to have executive power. The majority of IFIs consider their *Shariah* board to have advisory and supervisory powers in which they have a responsibility to undertake ex-ante and ex-post responsibilities. There is inconsistency to the responses relating to *Shariah* review. Meanwhile, majority of the *Shariah* boards have a role of conducting the *Shariah* analysis, only 23 per cent of IFIs indicate that their *Shariah* board undertook *Shariah* review responsibilities. In the event that the *Shariah* board did not undertake the *Shariah* review task, 58 per cent of IFIs granted authority to the *Shariah* board to hand over its function of the *Shariah* analysis to an internal *Shariah* fulfillment unit. This position performs that many *Shariah* boards only focus on ex-ante of *Shariah* governance and did not conduct *Shariah* analysis.

Studies on the roles of the board's jurisdiction over countries showed a number of interesting surveillance. Majority of the IFIs in Malaysia (45 per cent), GCC countries (32 per cent) and the UK (3 per cent) insisted that the *Shariah* Board has only advisory authority while 3 per cent of IFIs in GCC considered to have executive

authority. It indicates that the *Shariah* Board is an independent body that has only advisory and supervisory authorities on the IFIs. Executive authority is still on board of directors. Overall, the whole findings show that most of IFIs' *Shariah* boards perform ex-ante tasks. Meanwhile, only 12 per cent of IFIs in Malaysia, 16 per cent of IFIs in GCC countries and 3 per cent in the UK conduct *Shariah* analysis ex-post tasks of *Shariah* governance process.

From the percentages above, verifies a poor *Shariah* governance custom in the kind of the *Shariah* analysis process especially in GCC and the UK. Regarding this, even IFIs' *Shariah* boards in Malaysia and the UK do not execute *Shariah* analysis but that role had been handed over to an internal *Shariah* fulfillment unit (55 per cent). In GCC countries that have different situation from Malaysia and the UK, 16 per cent of IFIs' *Shariah* board denoted that the role had been handed over to an internal *Shariah* fulfillment unit.

5.8 Model of the Corporate Governance Characteristics

Based on Table 5.9, the model proposed for Corporate Governance Characteristics is:

$$\text{Logit} \left(\frac{\pi}{1-\pi} \right) = 0.875 + 0.734X_1 + 4.554X_2 \dots\dots\dots (iii)$$

Where:

$\text{Logit} \left(\frac{\pi}{1-\pi} \right)$ = default and non-default *sukuk* firms

X_1 = Independent Director

X_2 = Audit Committee

5.9 Analysis on *Sukuk* Default and Non-Default Firm Characteristics

Logistic regression proposed a model for *sukuk* default and non-default firm characteristics as described in Table 5.10.

Table 5.10: Analysis on *Sukuk* Default and Non-Default Firm Characteristics

		B	S.E.	Wald	df	Sig.	Exp(B)
Step 1 ^a	IDI	1,337	1,558	0,737	1	0,391	3,808
	AC	7,086	2,888	6,021	1	0,014	0,001
	QR	1,867	0,852	4,800	1	0,028	0,155
	CshR	3,202	1,818	3,103	1	0,078	24,573
	DtER	1,008	0,541	3,472	1	0,062	2,741
	ICR	-,377	0,389	0,938	1	0,333	0,686
	Constant	1,599	1,354	1,396	1	0,237	4,949

a. Variable(s) entered on step 1: IDI, AC, QR, CshR, DtER, ICR.

From sig value (p), result shown that audit committee and quick ratio have significant relationship toward default non default *sukuk* firms.

Based on Table 5.10, the model proposed for *sukuk* default and non-default firm characteristics is:

$$\text{Logit} \left(\frac{\pi}{1-\pi} \right) = 1.599 + 1.337X_1 + 7.086X_2 + 1.867X_3 + 3.202X_4 + 1.008X_5 - 0.377X_6 \dots \text{(iv)}$$

Where:

$\text{Logit} \left(\frac{\pi}{1-\pi} \right)$ = default and non-default *sukuk* firms

X_1 = Independent Director

X_2 = Audit Committee

X_3 = Quick Ratio

X_4 = Cash to Asset Ratio

X_5 = Debt to Equity Ratio

X_6 = Interest Coverage Ratio

However, detail results are presented by using Tree Analysis J48 method WEKA software as shown in Figure 5.5 below. It also shows firm characteristics.

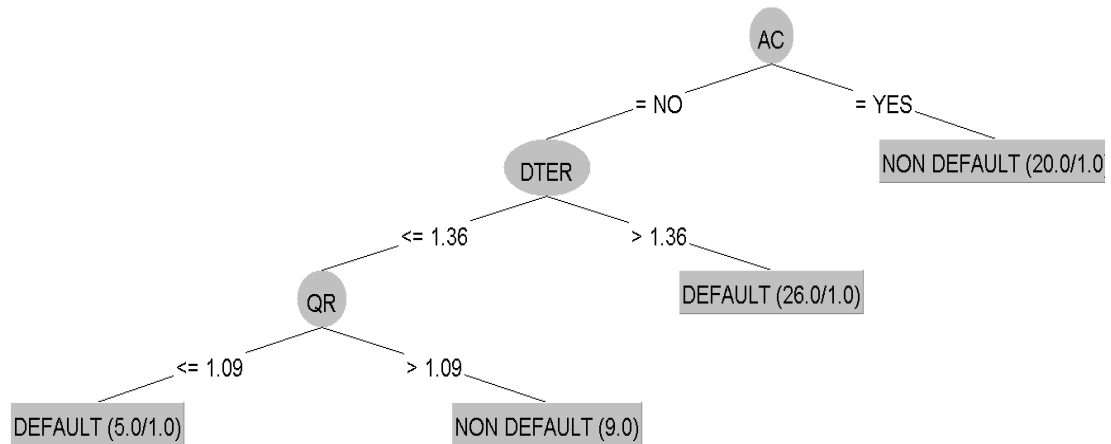


Figure 5.5: A Tree Analysis Result of All Independent Variables on Predictability of *Sukuk* Default Firm Characteristics

Post pruning node from the tree was conducted in this analysis. A Tree Analysis result show detail path way towards default non default *sukuk* firms. Audit Committee, Debt to Equity Ratio, and Quick Ratio effect to the *sukuk* defaulted firm based on certain value as presented in Figure 5.5. If the firm does not have Audit Committee and Debt to Equity Ratio is above 1.36, thus the firm will be *sukuk* default. However, if Debt to Equity Ratio is 1.36 and less than 1.36, the firm will be *sukuk* default if Quick Ratio is 1.09 and less than 1.09.

5.10 Model of the Predictability of *Sukuk* Defaulted Firms

The proposed model of *sukuk* default firm is expected from WEKA analysis as below:

Sukuk Default Firm, Y

$$= 0.16 - 0.58 \text{ Quick Ratio} + 0.47 \text{ Cash to Asset Ratio} + 0.57 \text{ Debt to Equity Ratio} - 1.35 \text{ Yes Audit Committee}$$

The proposed model shows that:

1. Co-efficient shows the strength of variable. It shows audit committee has the most influence toward *sukuk* default non-default firm, followed by quick ratio, debt to equity ratio and cash to asset ratio. From the model, if there is no audit committee, thus *sukuk* default for firm.
2. Sign minus (-) in quick ratio shows higher quick ratio, the smaller risk firm to be defaulted.
3. Cash to asset ratio has positive effect to the *sukuk* default firm. If firm has higher cash to asset ratio, the firm has higher risk to be defaulted. So does debt to equity ratio. The higher debt to equity ratio, the higher risk the firm to be defaulted.

More defaults occurred during the 2007-2009 financial crisis. The defaults and potential defaults of *sukuk* was not caused by the fact that they are Islamic financial products, but driven by the market and credit risks. Another way to assess the credit risk of *sukuk* is through the use of financial ratios. Some widely used metrics are liquidity and leverage ratios. Another parameter of probability of default is firm size.

The firm size can be represented by total assets, total sales, total revenue, net profit, natural logarithm of total assets, etc.

Table 5.11: Comparison Result of Analysis

Logistic Regression	Decision Tree	Additional Analysis
Quick ratio has significant effect, meanwhile cash to asset ratio has no significant effect on default non default <i>sukuk</i> issuing form under study	Decision tree result is more detailed on firm characteristics. Either quick ratio and cash to asset ratio have significant effect on default non default <i>sukuk</i> issuing form under study with in its characteristics. Firm with Quick ratio ≤ 0.62 tend to be defaulted <i>sukuk</i> firm. Meanwhile firm with cash to asset ratio is more than 1.21 tend to be defaulted <i>sukuk</i> firm.	The additional analysis is convincing that independent variable such as liquidity risk, solvency ratio and corporate governance are proper variable under study to investigate <i>sukuk</i> default and non-default firm.
Debt to Equity (DtER) and has significant effect, meanwhile Interest Coverage Ratio (ICR) has no significant effect on default non default <i>sukuk</i> issuing form under study	Decision tree result is more detailed on firm characteristics. DtER has significant effect on default non default <i>sukuk</i> issuing form under study with in its characteristics. Firm with Debt to Equity Ratio between -1.01 and 1.32 ($-1.01 \leq DtER \leq 1.32$) and more than 1.47 tend to be defaulted <i>sukuk</i> firm. Meanwhile firm with cash to asset ratio is more than 1.21 tend to be defaulted <i>sukuk</i> firm.	
Audit committee (AC) has significant effect, meanwhile Independent Director (ID) has no significant effect towards default or non default <i>sukuk</i> firms	Decision tree result is more detailed on firm characteristics. Either AC and ID have significant effect on default non default <i>sukuk</i> issuing form under study with in its characteristics. Firm with ID and no AC to be defaulted <i>sukuk</i> firm.	

5.11 Summary

The main objectives of this study are; (i) To determine the profile of defaulted *sukuk*; (ii) To investigate impact of liquidity risk, solvency ratio and corporate governance to the defaulted *sukuk*; and (iii) To suggest appropriate policy to prevent *sukuk* default. Results show that Quick Ratio of Liquidity Risk aspect, Debt to Equity Ratio as indicator of Solvency Ratio, Audit Committee of Corporate Governance Characteristics influence the *sukuk*'s default firms simultaneously.

The hypothesized relationships depicts in the research model were empirically tested using Logistic Regression (SPSS) and Decision Tree Analysis (WEKA). The model from previous literature is best fit in this analysis. The measurements of the study are based on research framework where the independent variables (IV) are liquidity risk, solvency ratio and corporate governance characteristics; and the dependent variable (DV) is predictability of *sukuk* default.

The study used four variables, namely: liquidity risk, financial crisis, corporate governance (IV) and predicting *sukuk* default (DV). The variables in this study are some of the financial ratios used by previous researchers, especially Ohlson (1980), Beaver (1966), Altman (1968 and 1977) and Pasaribu, Tobing & Manurung (2009). This study uses some of the financial ratios from the literature for liquidity ratios (quick ratio and cash to asset ratio), and solvency ratio (debt to equity ratio and interest coverage ratio). For the predictability of *sukuk* default is being used a dummy variable. The financial ratios have shown that the variables affected the predictability of *sukuk* default. It summarises descriptive statistics of the non-categorical variables. The data background has been discussed in Chapter 2. Thus, this chapter presented the details of their profiles and descriptions. Ultimately, predictive variables were

identified to explain predictability of *sukuk* default firms based on the research framework that was addressed in Chapter 3. The variables that were found statistically significant are regarded as major influences on the subsequent *sukuk* default firms.

As discussed in the Chapter 4, financial statements are commonly used to measure the performance of the firm and its management. It involves cash flow statements, balance sheets and profit and loss statements. Based on the financial statements, many ratios can be determined to assign the recent performance and/of future prospectus firm. Some of the ratios used including quick ratio, total debt to total assets, current ratio, profit margin to sales, working capital to total debt, and return on total assets (Ahn, 2000). However, this study merely used quick ratio to measure the impact of liquidity risk to *sukuk* defaulted firm.

Sukuk is one of the most rapid development segments in the Islamic financial market. Currently, Malaysia holds high reputation of being the prime contributor to the global *sukuk*. Past events have shown how the Islamic finance industry worldwide testify a number of *sukuk* defaults vis-a-vis almost defaults (Elmalki & Ryan, 2010).

In Malaysia, *sukuk* default firm occurred in 2002 by the Johor Corporation (Johor Corp.) for nearly three years after its first issuance in 1999. Based on IFIS (2002-2004) and Bondstream (2005-2011), the number of default rates in Malaysia had increased from 2002 until 2011, with the total amount of USD2,495 million (losses by the firm) as shown in Table 2.4. Eventhough the percentage of defaulted *sukuk* issuers in Malaysian firms are about 0.03 per cent, coupled with the wide variance in ratings, yet the default rate for Malaysian *sukuk* was low as in 2009, recording about 0.46 per cent (SC, 2010).

Meanwhile, Table 2.3 shows that the amount of *sukuk* issues (in USD million) for global and Malaysia increased tremendously from 2002 to 2007. Then in year 2008 the market slumped to more than 50 per cent. However, the market showed an upward trend back in 2009 before increasing substantially in 2010 and 2011. The table further depicts a similar trend between Malaysia and global *sukuk* market as it portrayed significant decrease in the issuance in 2008-2009. This trend indicated a market slowdown in 2008-2009, perhaps the occurrence is related to the world financial crisis.

There are many forms of business failures. A study found that majority business default is due to lack of management (Ahn et al., 2000). Lack of management is inexperienced managements, then impacted by rapid technological changes and fraud amongst others. Indeed, no research is perfect (Gill & Johnson, 1997; Shipman, 1997; Litwin, 1995; Hakim 1987), as such making the present study not an exception. The following paragraphs highlight the strengths of this study. The Strengths of Study as follows:

1. Making use of the data in testing the relationship between concepts/theory and the research variables were official government documents that may possess authenticity in high level. Although secondary in nature, but the secondary data had been addressed as the basis for analyzing the worthiness of a business.
2. Employing the quantitative methods may possibly produce a reliable and hard finding that may be generalised.
3. The multivariate model employed in this study elaborated various factors (3 variables of this study) that could explain the default of *sukuk* firms. It showed

better results than univariate method whereby only one variable was predicted to explain the dependent variable.

4. Sampling for default and non-default *sukuk* firms were all equal. This approach might possibly reduce the chances of creating Type II error, on the basis that the composition of the sample reflected the population.