Determining the Real Causes of Financial Crisis in Islamic Economic Perspective: ANP Approach

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Abstract

Objective – The purpose of this study is to determine the real causes of financial crisis from Islamic economic perspective.
Methods - This study applies Analytic Network Process (ANP) to determine the real causes of financial crisis from Islamic economic perspective to be able to formulate the real solutions to end financial crisis.
Results - The ANP results show that the real causes of financial crisis from Islamic economic perspective are Social Instability (EXTERNAL FACTOR), Speculation (MISBEHAVIOR), Ineffective Fiscal System (UNSUSTAINABLE FISCAL SYSTEM), Hedonism (MISBEHAVIOR), Fractional Reserve Banking System (UNSTABLE MONETARY SYSTEM), Political Instability (EXTERNAL FACTOR), Corruption (POOR GOVERNANCE), Interest Rate (UNSTABLE MONETARY SYSTEM), Fiat Money (UNSTABLE MONETARY SYSTEM), and the Wrong Man in the Wrong Place (POOR GOVERNANCE). These main real causes should be removed gradually in order to systematically and gradually improve the stability of financial system so that financial crisis will not reappear again and again in the future.
Conclusions -Financial crisis would not happen under Islamic economic system if all Allah's laws in financial dealings were followed. Financial crisis in conventional economic system could be prevented or lessened by gradually adopting Islamic economic and finance laws and regulations, partly or fully, especially the main pillars of Islamic financial system, namely the prohibition of ribā (usury or interest), prohibition of maysir (gambling and game of chance or speculation) and prohibition of gharar (excessive uncertainty), in their many forms.

Keywords: Financial crisis; Islamic economic perspective; ANP

Abstrak

Tujuan - Tujuan dari penelitian ini adalah untuk Menentukan penyebab riil krisis keuangan dari perspektif ekonomi Islam.
Metode - Penelitian ini menggunakan Analytic Network Process (ANP) untuk Menentukan penyebab riil krisis keuangan dari perspektif ekonomi Islam untuk dapat merumuskan solusi nyata dalam mengatasi krisis keuangan.
Hasil – Hasil dari penggunaan metode ANP dalam penelitian ini menunjukkan bahwa penyebab sebenarnya krisis keuangan dari perspektif ekonomi Islam adalah ketidakstabilan Sosial (*EKSTERNAL FACTOR*), Spekulasi (*MISBEHAVIOR*), Sistem Fiskal Yang tidak Efektif (*UNSTABLE MONETARY SYSTEM*), Hedonism (*MISBEHAVIOR*), *Fractional Reserve Banking* System (UNSTABLE MONETARY SYSTEM), ketidakstabilan politik (EKSTERNAL FACTOR), Korupsi (POOR GOVERNANCE), Tingkat Suku Bunga (*UNSTABLE MONETARY SYSTEM*), *Fiat Money* (*UNSTABLE MONETARY SYSTEM*), dan *the Wrong Man in the Wrong Place* (POOR GOVERNANCE). Berbagai penyebab utama ini harus dihilangkan secara bertahap untuk meningkatkan stabilitas system keuangan secara sistematis dan berkelanjutan sehingga krisis keuangan tidak akan muncul dan berulang-ulang lagi di masa depan.
Kesimpulan - Krisis keuangan tidak akan terjadi di bawah sistem ekonomi Islam jika semua hukum Allah dalam urusan keuangan telah diikuti. Krisis keuangan dalam sistem ekonomi konvensional dapat dicegah atau dikurangi dengan secara bertahap mengadopsi hukum ekonomi, keuangan dan peraturan Islam, sebagian atau seluruhnya, terutama pilar utama dari sistem keuangan Islam, yaitu larangan riba (riba atau bunga), larangan maysir (perjudian atau Spekulasi) dan larangan gharar (ketidakpastian yang berlebihan), dalam berbagai bentuknya.

Kata kunci: Krisis Keuangan; perspektif ekonomi Islam; ANP

1. Introduction

In the 20th century, financial crises have occurred one after another since the demise of gold standard regime in 1915. The crises have subsided in the period under Bretton Woods Agreements (BWA) in 1950-1972. The BWA finally collapsed in 1971, when the US unilaterally terminated the convertibility of US Dollar to gold. Following the collapse of BWA, financial crises have resurfaced more frequently started in England (banking crisis in 1973-74), industrial countries (deep recession in 1978-1980), developing countries (debt crises in 1980-1982), US and UK (great crash of stock exchange in 1987), Mexico (financial crisis in 1994), Asian countries, Russia, Brazil and Argentina (financial crisis and hyperinflation in 1997-1999).

The latest global economic turmoil was global financial crisis since August 2007 triggered by subprime mortgage crisis in the USA, which has made tens of financial institutions in troubles and some of them have gone bankrupt, such as Lehman Brothers and Bear Sterns in the US, as well as Northern Rock Bank in the UK (Lietaer, *et al*., 2009). This global financial crisis has been called by leading economists as the worst financial crisis since the Great Depression of the 1930s. Recently, this contagious global financial crisis has just caused crises in some European countries, such as Greece, Portugal, and Italia.

Since the collapse of Bretton Woods Agreements there have already been more than 431 financial crises, which covers 147 banking crises, 218 currency crises (10 episodes in 2008-2011), and 66 sovereign debt crisis, including 68 twin crises and 8 triplet crises (Laeven and Valencia, 2012), that happened not because of cyclical or managerial failures, but because of structural failures in various countries under very different regulatory systems as well as at different stages of economic development (Lietaer,*et al*., 2009). However, the conventional solutions only dealt with the symptoms, not the root systemic causes of the crisis.
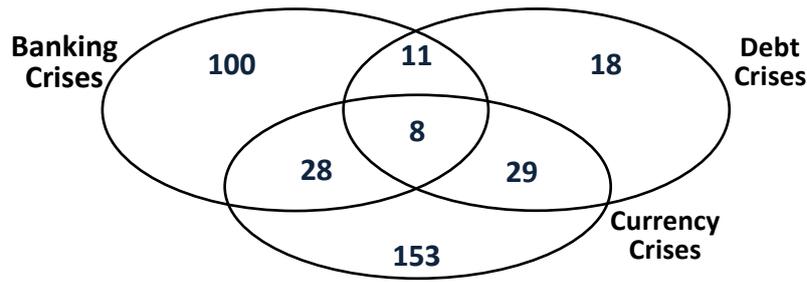
Source: Laeven and Valencia (2012), with correction

Fig 1. Simultaneous Crises 1970 – 2011

It seems that they still failed to learn the lessons on determining the real causes of financial crisis. Even though the crisis has been repeating again and again, none of those countries became economically stronger and more stable. Crises are subjects which are not only so much discussed, but are also so much misunderstood and denied. Hamidi (2012) even stated that "then, which of the crisis will you deny?"

Therefore, the objective of this study is to determine and examine the root causes of financial crisis, from Islamic economics perspective, using qualitative method Analytic Network Process (ANP), to be able to capture all tangible and intangible variables which cause financial crisis.

Under Islamic economic perspective, financial crisis could occur due to natural causes and man-made (or human error) causes. Natural financial crisis could happen due to natural disasters and natural business cycle. Meanwhile, man-made financial crisis could happen when the balance in real and financial sectors and their stakeholders are disrupted due to the transgressions of God's laws in financial dealings, especially in the abandonment of main pillars of financial system, namely prohibition of *ribā*(usury or interest), prohibition of *maysir* (gambling and game of chance or speculation) and prohibition of *gharar* (excessive uncertainty), in their many forms. Allah says in Al Qur'an at surah *Thaahaa* [20]:124. Other reminder is mentioned in hadits by Ath-Thabrani and Al Hakim:*"When fornication and usury have been widespread in a community, then they (inhabitants) have allowed Allah's punishment to themselves."*

The abandonment of the prohibition of *riba* could take the forms of: 1) interest system; 2) fiat money system; 3) fractional reserve banking system; 4) leverage system; 5) derivatives; and 6) credit card system. The abandonment of the prohibition of *maysir* could take the forms of: 7) speculation in stock trading; 8) speculation in foreign exchange trading; 9) speculation in commodity trading; 10) speculation in real estates; and 11) other speculation in any markets. Meanwhile, the abandonment of the prohibition of *gharar* could take the forms of: 12) complexity in transactions; 13) complexity in the structure of financial products; 14) securitization; 15) hedging; and 16) insurance products (See Appendix A).

Moreover, misbehaviors of economic actors in the markets, such as self-interest, monopoly, hoarding, price control, manipulation, asymmetric information, no distributive justice, unfairness, greed, etc. could also trigger or propagate financial crisis(See Appendix A). Financial sector is a part of economy that supports real sector so that economic activities (especially in production and trade) can run and excel smoothly without any hindrance.

Studies on current global financial crisis from Islamic economic perspective are many but not as plenty as those of conventional economic perspective. The Task Force on Islamic Finance and Global Financial Stability, organized by Islamic Development Bank – IDB, published a report on Islamic finance and global financial stability (2010), which discussed the resilience of Islamic finance against global financial crisis. The report pointed out the need for regulatory reform and the adequacy ofthe existing international financial architecture and the search for a more enduring solution, where Islamic finance could contribute to global financial stability. There was one special volume of International Journal of Islamic and Middle Eastern Finance and Management, volume 3 number 4 (2010) which comprised of 8 papers discussing various topics on global financial crisis from Islamic perspective, conceptually and empirically. There was a compilation book by Islamic Economic Research Center, King Abdul Aziz University - IERC-KAU (2009), which included 18 papers of prominent Islamic economic and finance scholars discussing Islamic views on global financial crisis from the root causes in different

markets up to the proposed solutions. There are also many studies from various journals which discuss financial crisis from Islamic perspective. The summary can be read in appendix A.

Scholars of Islamic economics have agreed on fundamental real causes of financial crisis, namely, the transgression of God's laws, especially on economic dealings, including *ribā* (usury or interest), *maysir* (speculation or gambling) and *gharar* (excessive uncertainty) in their many forms(See Appendix A). However, they have also some diverse views on other real causes of financial crisis. In summary, the real causes of financial crisis from Islamic perspective from these studies could be divided into five groups, namely: 1) misbehaviors of economic actors, including greediness, self-interests, hedonism, speculation, criminal acts and expectation; 2) external factors and events which are exogenous, including business cycle, natural disaster, contagion, international monetary system, political instability and social instability; 3) poor governance in public and private institutions, including poor administration, corruption, price control, lack of regulation, lack of disclosure and wrong man in the wrong place; 4) unstable monetary/financial system, including interest system, fiat money, fractional reserve banking system, leverage system, product derivation and credit creation through credit card; and 5) unsustainable fiscal system, including unsustainable fiscal deficit, excessive tax, excessive sovereign debt, excessive spending, poor inventory management of strategic commodities and ineffective fiscal system.

2. Methodology

This study will apply qualitative method Analytic Network Process (ANP) in three steps. First, in-depth interviews with scholars and experts of Islamic economic and finance are conducted to fully comprehend the real problems and identify the real causes of financial crisis. Second, the results of the preliminary stage are used to develop an appropriate ANP network and relevant questionnaires to glean the necessary data from seven scholars and experts of Islamic economic and finance. Third, ANP analysis is applied to prioritize key real causes of financial crisis and to set policy strategies in order to formulate optimal policy recommendations.

Saaty (1999) defined analytic network process (ANP) as a general theory of relative measurement used to derive composite priority ratio from individual ratio scale reflecting relative measurement of interconnected elements within control criteria. While, Azis (2003) described ANP as a mathematic theory that allows one to deal systematically with dependence and feedback and that can capture and combine tangible and intangible factors by using ratio scale. ANP is a new approach in decision making process that provides general framework in treating decisions without making any assumption about independency of elements in higher level from elements in lower level and about independency of elements within the same level. Moreover, ANP uses network without having to determine level as in hierarchy used in Analytic Hierarchy Process (AHP), which is a starting point of ANP. The main concept of ANP is influence, while the main concept of AHP is preference. AHP with its dependency assumptions on clusters and elements are a special cases of ANP.

In AHP network, there are levels of goal, criteria, sub criteria, and alternative, where each level has its own elements. Meanwhile, in ANP network, level in AHP is called cluster that can consist of criteria and alternative which now is called node (see Fig 2.). With the feedback, alternatives can depend on criteria, like in a hierarchy, but it can also depend on other criteria. Furthermore, those criteria themselves can depend on alternatives and other criteria (see Fig 2.). Meanwhile, feedback improves priority which derived from judgment and makes prediction more accurate. Therefore, the result of ANP is expected to be more stable. From feedback network in Fig 2., it can be seen that the parent node or element and nodes to be compared can be in different clusters. For example, there is a direct link from parent node cluster C4 to the other clusters (C2 and C3), which called outer dependence. Meanwhile, there is parent node and nodes to be compared lie within the same cluster, so that this cluster will be connected with itself and create loop link. This is called inner dependence.
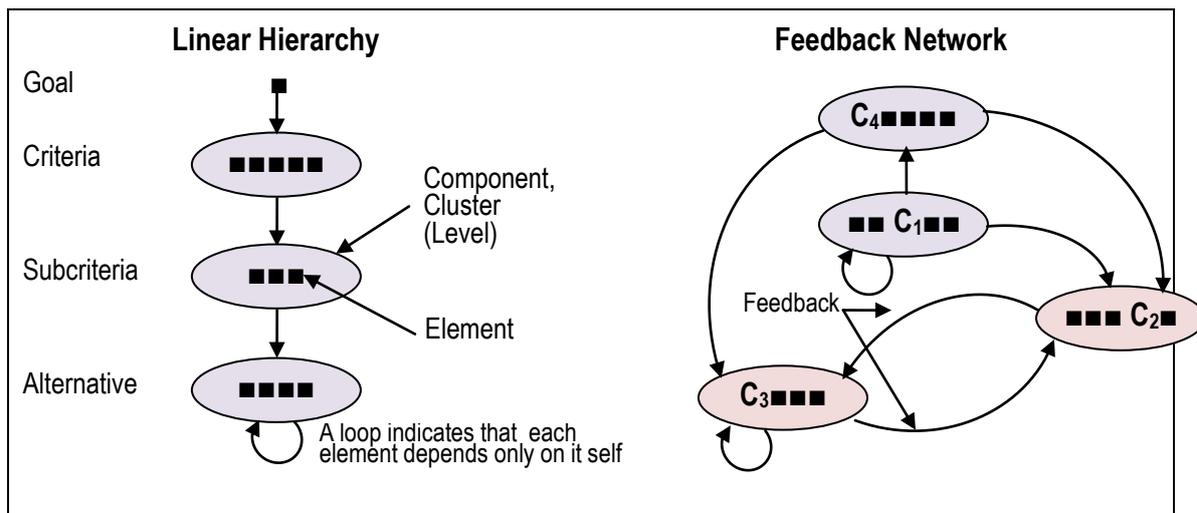
Source: Saaty and Vargas (2006)

Fig2. Comparisons of Hierarchy and Network

In a network, element of the cluster can be a person (e.g. an individual in Bank of Indonesia) and element in another cluster can be also a person (e.g. an individual in the parliament). Element in one cluster can influence other elements in the same cluster (inner dependence) and can also influence elements in other clusters (outer dependence) with respect to each criteria. The intended output of ANP is to determine the overall influence from all elements. Therefore, all criteria must be configured and set their priority in a framework of control hierarchy or network. After that, do the comparison and synthesis to obtain the order of priority from these criteria. Then, we derive the influence from element in feedback system with respect to each criterion. Finally, the results of these influences are weighted according to the important level of the criteria, and summed them up to get overall influence from each element.

Seven AHP pillars can be used as starting point of ANP[1]. ANP is a combination of two parts. First part consists of control hierarchy or network from criteria and sub criteria that control interaction. The second part is network of influences among elements and clusters. AHP and ANP utilize ratio scale. Priorities in ratio scales are fundamental number which makes basic arithmetic operation possible, such as addition and subtraction within the same scale, multiplication and division of different scale, and combination of both operations by weighting

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[1] For more details, see Thomas L. Saaty "The Seven Pillars of the Analytic Hierarchy Process" (2003).

and adding different scales to obtain unidimensional scale. It should be noted that ratio scales are also absolute scales. Both of them are derived from pairwise comparisons using judgments or derive from pairwise dominance ratios using actual measurements. When using judgments, in AHP one asks "which one is more preferred or more important?" while in ANP one asks "which one has greater influence?" The second question obviously requires factual observation and knowledge to produce valid answer. This makes the second question more objective than the first one.

There are three related basic principles of AHP/ANP, namely decomposition, comparative judgments, and hierarchic composition or synthesis of priorities (Saaty, 1994).

1. **Decomposition**. The principle of decomposition is applied to structure a complex problem into a hierarchy or network of clusters, sub clusters, sub-sub clusters, and so on. In other words, decomposition tries to model the problem into AHP/ANP framework.

2. **Comparative Judgments**. The principle of comparative judgments is applied to construct pairwise comparisons of all combinations of elements in a cluster with respect to the parent of the cluster. These pairwise comparisons are used to derive 'local' priorities of the elements in a cluster with respect to their parent.

3. **Hierarchic Composition or Synthesis**. The principle of hierarchic composition or synthesis is applied to multiply the local priorities of the elements in a cluster by the 'global' priority of the parent element, producing global priorities throughout the hierarchy or network and then adding the global priorities for the lowest level elements (usually the alternatives).

3. Results and Analysis

3.1 Model Construction

Problem identification of this study follows extensive literature survey, so that the ANP model of this study is structured into five clusters of problems, including all real causes of financial

crisis viewed from Islamic economic perspective, so that the conceptual framework of this study can be read in Fig 3.
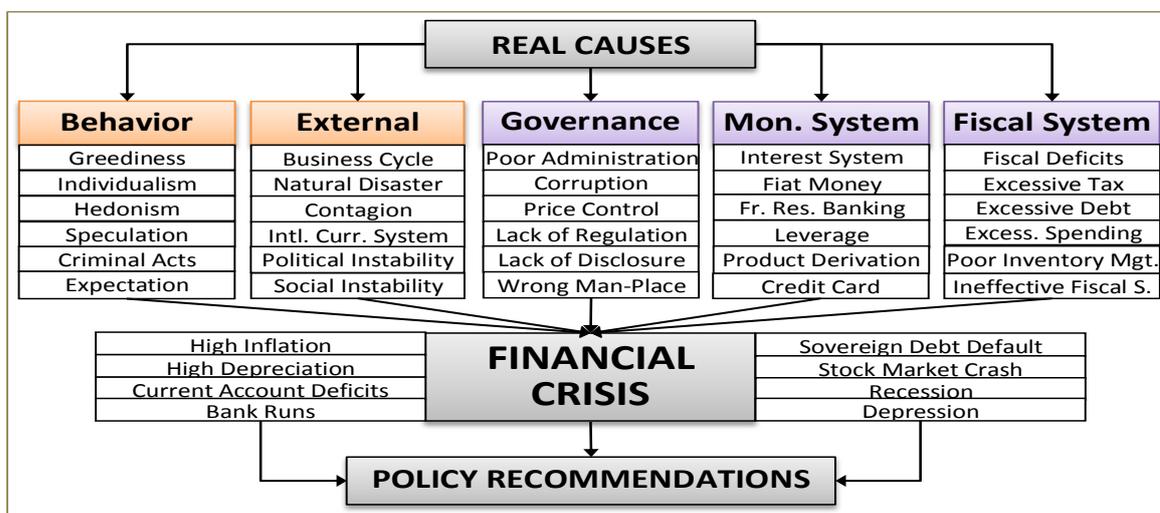

Fig 3. The Real Causes of Financial Crisis

Based on the above conceptual framework, the corresponding ANP network for the real causes of financial crisis can be seen in Fig 4.
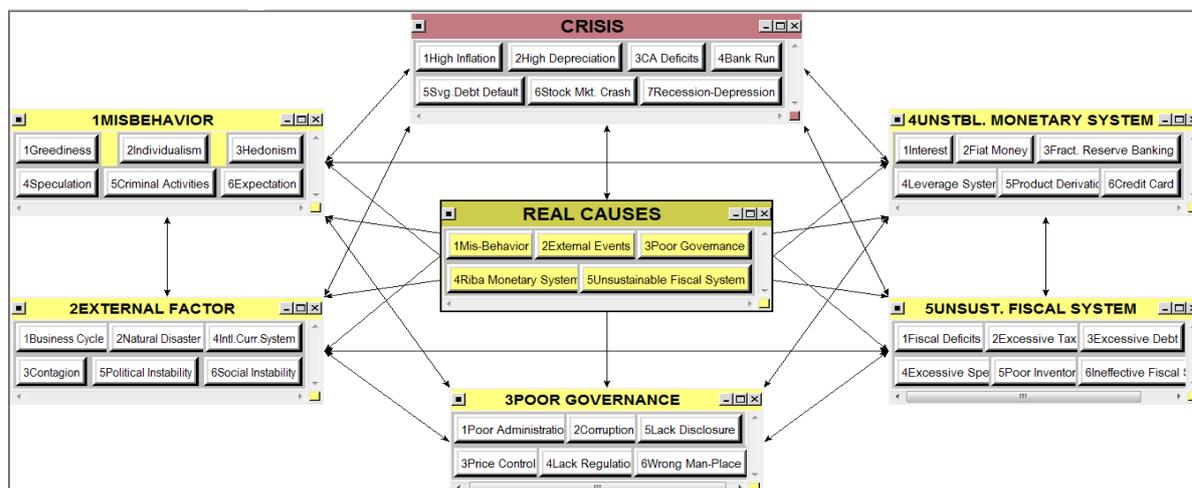

Fig 4. ANP Network for the Real Causes of Financial Crisis

3.2   Model Quantification

In this second phase, primary data surveys to the most knowledgeable respondents (seven Islamic economics and finance experts) are conducted to fill out pair-wise questionnaires. To simplify the original rather complicated pair-wise questionnaires and to maintain consistency,

modified pair-wise questionnaires are used as shown in Fig 5. Meanwhile, the respondents are equipped with a show card describing the scale and the ANP network.

The application of modified pair-wise questionnaire significantly reduces the time required for in-depth interviews with respondents and provides consistent results. Moreover, geometric means from seven respondents are calculated for each pair-wise question, so that we have one geometric mean response from seven respondents, which will be entered to ANP model and synthesized.

ROOT CAUSES (1Misbehavior) – CRISIS
How much each type of CRISIS (listed below) is caused by ROOT CAUSES especially due to 'MISBEHAVIOR' of economic actors.

CRISIS	SCALE								
	1	2	3	4	5	6	7	8	9
1HIGH INFLATION									
2HIGH DEPRECIATION									
3CURRENT ACCOUNT DEFICIT									
4BANK RUN									
5SOVEREIGN DEBT DEFAULT									
6STOCK MARKET CRASH									
7RECESSION-DEPRESSION									

Fig 5. Samples of Simplified Pair-wise Questionnaires

3.3 Results

Table 1 in the Appendix B shows the summary results of ANP for all clusters, which are shown in two figures, i.e., 'normalized by cluster' and 'limiting'. Value in 'normalized by cluster' column shows relative value of each element to other elements in the cluster, where the total value of all elements in one cluster equals to one. Values in 'limiting' column show relative values of each element to the entire network, where the total value of all elements in ANP network equals to one.

[Insert Table 1]

The general ANP results show that the main real causes of financial crisis from Islamic economic perspective (see Fig 6.) are Poor Governance (0.243), Unsustainable Fiscal System

(0.241) and Unstable Monetary System (0.199). These results are slightly different from those of Ascarya (2013a) using SEM (structural equation modeling), where Unsustainable Fiscal System (loading factor 0.60) is the first main real cause, followed by Poor Governance (loading factor 0.53) and Unstable Monetary System (loading factor 0.51).
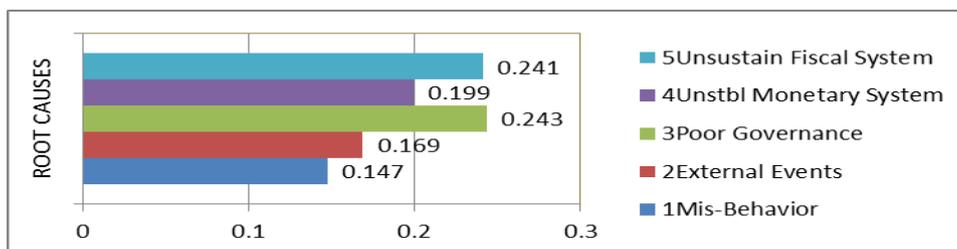

Fig 6. General Real Causes of Financial Crisis

The detailed ANP results show that the main real causes of financial crisis from Islamic economic perspective (see Fig 7.) are Social Instability (0.0410), Speculation (0.0402), Ineffective Fiscal System (0.0400), Hedonism (0.0357), Fractional Reserve Banking System (0.0346), Political Instability (0.0318), Corruption (0.03011), Interest Rate(0.0301), Fiat Money (0.0301), and Wrong Man in the Wrong Place (0.029). In summary, real causes of financial crisis which stand out are Corruption and Wrong Man in the Wrong Place (POOR GOVERNANCE), Ineffective Fiscal System (UNSUSTAINABLE FISCAL SYSTEM), Fractional Reserve Banking System, Interest and Fiat Money (UNSTABLE MONETARY SYSTEM), Social Instability and Political Instability (EXTERNAL FACTOR) and Speculation and Hedonism (MISBEHAVIOR).
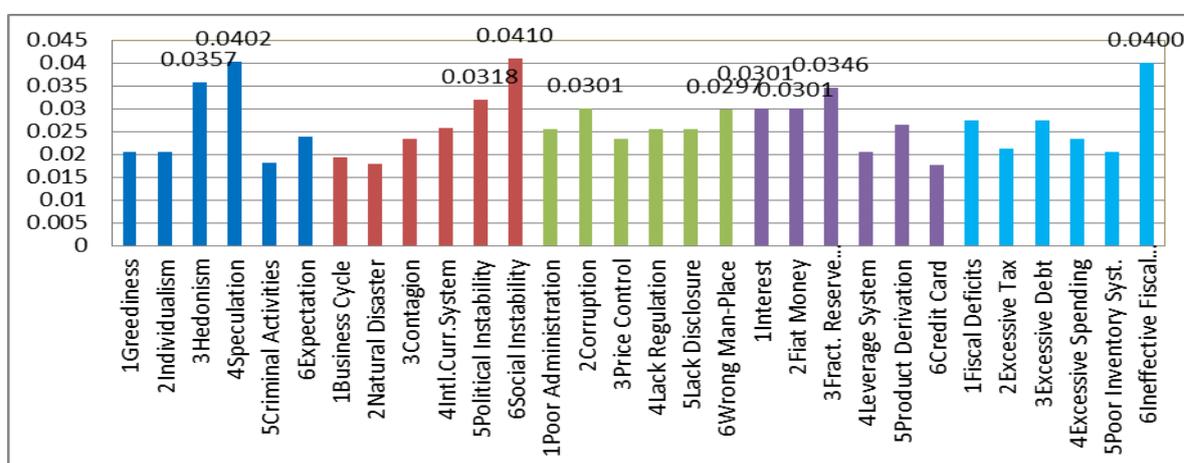
Fig 7. Detailed Real Causes of Financial Crisis

3.4 Analysis

POOR GOVERNANCE, especially Corruption and Wrong Man in the Wrong Place, has become the main real causes of financial crisis.Corruption is prohibited in Islam, which is stated in several surah in Al-Qur'an, such as surah Al-Maidah [5]:38, surah An-Nisaa [4]:29, surah Ali Imraan [3]:161. Corruption is mentioned in Al-Qur'an surah Huud [11]:85.Corruption prohibition is also recorded in several Hadits. For example, hadits narrated by Al-Baihaqi (no.18582), Imam Malik (no.866) and IbnuMajah (no.2840) as follows. *"Hand over even the needle and thread, for stealing from the spoils is disgrace, fire, and ignominy on the Day of Rising for people who do it".* Meanwhile, one management rule in Islam is to place the right man in the right position. For example, It is mentionedin one hadits narrated by Imam Muslim in Al-Nawawi's*Riyad-us-Saliheen* chapter 81, about one companion who ask Rasulullah SAW for a position as government official, as follows. *Abu Dharr (May Allah be pleased with him) reported: Messenger of Allah (sallallaahu 'alayhiwasallam) said to me, "O Abu Dharr, I see that you are weak and I like for you what I like for myself. Do not rule over (even) two persons, and do not manage an orphan's property."* Abu Dharr was not the right man for the position he asked, so that Rasulullah SAW refused his request.

UNSUSTAINABLE FISCAL SYSTEM, especially Ineffective Fiscal System, has become the main real causes of financial crisis. Al-Qur'an has mentioned in several verses, such as surah Al-Israa' [17]:29 about balanced budget, surah Huud [11]:85 about excessive tax, surah An-Nisaa [4]:9 about excessive government debt for the next generation, surah Al-Furqaan [25]:67 about excessive government spending, surah Al-An'am [6]:141 about not to waste by extravagance and surah Al-Israa' [17]:26-27 about not to spend wealth wastefully. There are also some hadits on fiscal system. Hadits narrated by Ahmad (no.16976) mentions about excessive tax, as follows. *"One who wrongfully takes an extra tax (sahib maks) will not enter Paradise."*Hadits narrated by Al-Baihaqi (no.11027) talks about excessive debt. Hadits narrated

by Imam Bukhari (no.1272) discuses about leaving surplus wealth for the next generation is better than otherwise. Hadits narrated by Al-Baihaqi (no.6161)talks about living managed budget with chastity is better than riches with extravagance.

UNSTABLE MONETARY SYSTEM, especially Fractional Reserve Banking System, Interest Rate and Fiat Money, has become the main real causes of financial crisis. These three elements are the main pillars of conventional financial system which contain *ribā*(usury) and are prohibited in Islamic economic perspective.*Ribā*is prohibited in several stages, in line with the readiness of the society of that era. In the first stage in Makkah, surah Ar-Rum (30:39) says that *ribā*(interest) will deprive wealth from Allah's blessings, while sadaqah (charity) will raise Allah's blessings manifold. In the second stage in the early Madinah period, it is mentioned in surah An-Nisaa (4:161) that *ribā*is severely condemned (which is in line with *ribā*prohibition in previous scriptures) and those who take *ribā*are threatened with severe punishment from Allah. In the third stage in the second or third year of Hijrah, surah Ali Imran (3:130-133) enjoins Muslims who believe to keep away from *ribā*, if they desire Islamic wellbeing. In the fourth stage close to the completion of Prophet's mission, surah Al-Baqarah (2:275-281) severely condemns those who take *ribā*, establishes a clear distinction between trade and *ribā,* and requires Muslims to annul all outstanding *ribā,* instructing them to take only the principal amount, and forego even this in case of the borrowers' hardship (Chapra, 1985).

EXTERNAL FACTOR, especially Social Instability and Political Instability are exogenous variables which become the main real causes of financial crisis where the government and regulator do not have control over them. People who make instability in the society are warned in Al-Qur'an surah Al-Maidah [5]:33. It is also narrated in some hadits, such as one narrated by Imam Muslim:*"Whoever comes to you when you are in one union (of a country) and wants to undermine your solidarity (wants to divide the unity/community), you should fight him (or them)."*

MISBEHAVIOR of economic actors, especially Speculation and Hedonism has become the main real causes of financial crisis. Speculation or gambling or *Maysir* is prohibited in Islam in several stages. In the first stage, gambling is considered as great sin which also contains some benefit, but the sin is greater than the benefit (Surah *Al-Baqarah* [2]:219). In the second stage, gambling is described as satan handiwork, so that believers should avoid gambling in order to be successful (Surah *Al-Maidah* [5]:90). In the last stage, gambling must be stopped and prohibited since it hinders someone from the remembrance of Allah and from the prayer (Surah *Al-Maidah* [5]:91). Meanwhile, Hedonic way of live is warned by Al-Qur'an in Surah *At-Takaatsur* [102]:1-8. Allah warns that people who piling up worldly things will have diverted live and will be questioned in the Day of judgment (they indulged in, in this world), and finally will be punished.

Therefore, solutions to avoid next financial crisis are fight corruption and assign the right man in the right place (good governance), correct ineffective fiscal system and incorporate Islamic fiscal instruments, such as zakat and waqf (stable fiscal system), replace fractional reserve banking system with 100 percent reserve banking system, riba system with profit-and-loss sharing system, and replace fiat currency with real currency of gold and silver (stable monetary system), as well as ban all speculative activities and restrict hedonic way of life.

4. Conclusion

Financial crisis would not happen under Islamic economic system if all Allah's laws in financial dealings were followed. Financial crisis in conventional economic system could be prevented or lessened by gradually adopting Islamic economic and finance laws and regulations, partly or fully, especially the main pillars of Islamic financial system, namely the prohibition of *ribā*(usury or interest), prohibition of *maysir* (gambling and game of chance or speculation) and prohibition of *gharar* (excessive uncertainty), in their many forms.

The first controlled main real cause of financial crisis is Speculation or *maysir* (next to uncontrolled Social Instability), so that the prohibition of speculation in all markets, especially

in financial markets should become the first priority. At the end, all of these real causes should be removed gradually in order to systematically and gradually improve the stability of financial system so that financial crisis will not reappear again in the future.

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AppendixA

VARIABLE	*DEFINITION*
	REFERENCES
MIS-BEHAVIOR	
1 Greediness	*Excessive wants to own worldly things (such as, wealth, status and power) for one's self, which are far beyond basic needs and comfort.*
	Almoharby (2011: p.102), Smolo & Mirakhor (2010: p.379),Chapra (2008: p.2), Hassan & Kayed (2009: p.36), Farooq (2009: p.8), Ahmed (2009: p.20), Siddiqi (2009: p.3)
2 Individualism	*Moral stance where interests of individual should achieved precedence over community or state.*
	Siddiqi (2009: p.4)
3 Hedonism	*Believe or idea that all people have the right to do everything in their power to achieve the greatest amount of pleasure possible to them.*
	Almoharby (2011: p.106), Siddiqi (2009: p.3)
4 Speculation	*The practice of engaging in risky financial transactions to profit from short or medium term fluctuations in the market value of a tradable goods, such as a financial instrument.*
	Trabelsi (2011: p.17), Almoharby (2011: p.106), Ghoul (2011: p.58-59), Ahmed (2010: p.307), Hassan & Kayed (2009: p.36), Farooq (2009: p.8), Siddiqi (2009: p.8), Seidu (2009: p.29), Al-Masri (2009: p.290), Chapra (2008: p.16), Chapra (2007: p.164&166), Meera & Larbani (2004: p.10-11), Ahmed (2001: p.30), Oguz & Tabakoglu (1991: p.66), Zarqa (2009: p.247)
5 Criminal acts	*Actions in financial markets which led to a deliberate violation of rules and regulations to gain abnormal profit, such as monopoly, hoard, fraud and corruption.*
	Hassan & Kayed (2009: p.36), Mirakhor & Krichene (2009: p.29), Seidu (2009: p.30), Ali (2006&2007: p.26), Garcia, et al (2004: p.1), Bashar (1997: p.48), Sabzwari (1984: p.3)
6 Expectation	*Believe that is centered on the future performance in financial markets, may or may not be realistic, which exist due to permissibility of speculation.*
	Siddiqi (2009: p.8)
EXTERNAL FACTOR	
1 Business cycle	*The business cycle is the upward (expansions) and downward (contractions) movements of economic activities (business fluctuations) in production, trade and finally GDP (gross domestic product) around its long-term growth trend.*
	Q.S.Yusuf:43-49, Seidu (2009: p.29), Al-Jarhi (2004: p.23), Oguz & Tabakoglu (1991: p.64& 72)
2 Natural disaster	*Shocks resulted from a number of natural factors, such as earthquake, tsunami, twister, floods, or other natural calamities.*
	Chapra (2007: p.167), Oguz & Tabakoglu (1991: p.69)
3 Contagion	*Shocks that initially affect only one or a few financial institutions or a particular region of an economy, spread to the rest of financial sectors and other countries whose economies were previously healthy, in a manner similar to the transmission of a medical disease.*
	Smolo & Mirakhor (2010: p.376), Hassan & Kayed (2009: p.37)
4 International currency system	*International monetary system based on multiple (unstable and unfair) fiat currency system (of each nation) and US$ fiat money as international currency, all with no back up assets.*
	Trabelsi (2011: p.17), Meera & Larbani (2004: p.12), Ahmed (2001: p.10)
5 Political	*Shocks that cause instability in political aspects, such as loss of confidence in state, inequality, violation of human rights and unrests, which hinder or halt economic*

instability	*activities.*
	Trabelsi (2011: p.17), Ghoul (2011:p.58-59); Oguz & Tabakoglu (1991: p.69)
6 Social instability	*Shocks that cause instability in social aspects, such as widespread criminality, corruption and poverty, which hinder or halt economic activities.*
	Ghoul (2011: p.58-59), Hassan & Kayed (2009: p.38)

POOR GOVERNANCE	
1 Poor administration	*Poor management or control of an organization, especially managerial functions of local to central government and public institutions.*
	Seidu (2009: p.30), Al-Masri (2009: p.293), Ali (2006 & 2007: p.23), Iqbal & Khan (2004: p.2)
2 Corruption	*Spiritual or moral impurity, abuse or deviation which is conducted for his/her/their personal gain, such as bribery, embezzlement, dishonest, and fraudulent conducts.*
	Hassan & Kayed (2009: p.36), Al Masri (2009: p.293), Farooq (2009: p.8), Siddiqi (2009: p.3), Seidu (2009: p.30), Ali (2006&2007: p.11), Garcia, *et al.*(2004: p.1), Iqbal & Khan (2004: p.96)
3 Price control	*Forms of governmental restrictions on the prices of certain goods and services in the market to maintain their affordability, to prevent price increase during shortages and to slow inflation.*
	Ibnu Qudamah <u>in</u> Bashar (1997: p.32), Khan & Thaut (2008: p.11), Azid, *et al.*(2008: p.61), Iqbal & Khan (2004: p. 1), Kahf (2000: p.9), Oguz & Tabakoglu (1991: p. 64), Hadits Abu Dawud no.3453 and Hadits Tirmidzi no.1314
4 Lack of regulation	*The absent of necessary administrative law and procedures to assure the proper working of market mechanisms.*
	Othman, *et al.*(2012: p.10), Trabelsi (2011: p.23), Smolo & Mirakhor (2010: p.372), Ahmed (2009: p.15), Hassan & Kayed (2009: p.37), Mirakhor & Krichene (2009: p.29), Seidu (2009: p.30), Al-Masri (2009: p.293), IAIE (2009: p.267), Ali (2006&2007: p.10 & 27), Iqbal & Khan (2004: p.2)
5 Lack of disclosure	*The absent of necessary openness, transparent information and reporting in order to reduce asymmetric information or biased between/among market players.*
	Smolo & Mirakhor (2010: p.372), Iqbal & Khan (2004: p.2)
6 Wrong man in the wrong place	*Assignment of unqualified person for certain position or job.*
	Ali (2006&2007: p.24), Iqbal & Khan (2004: p.2)

UNSTABLE MONETARY/FINANCIAL SYSTEM	
1 Interest system	*The application of interest rate in economic transactions, where borrowers have to pay a predetermined percentage of principal for the use of money that they borrow from their lender.*
	Othman, *et al.* (2012: p.10), Trabelsi (2011: p.17), Ghoul (2011: p.58-59), Ahmed (2010: p.307), Smolo & Mirakhor (2010: p.375), Hassan & Kayed (2009: p.50), Mirakhor & Krichene (2009: p. 9), Siddiqi (2009: p. 6), Seidu (2009: p. 29), Al-Masri (2009: p.289), Thaker & Azam (2009: p.10), IAIE (2009: p.267), Chapra (2008: p.3), Chapra (2007: p.162), Meera & Larbani (2004: p.12), Iqbal & Khan (2004: p.2), Ahmed (2001: p.30), Oguz & Tabakoglu (1991: p.66), Zarqa (2009: p.251)
2 Fiat money	*Money that derives its value from government regulation or law. Its face value is higher than its intrinsic market value.*
	Trabelsi (2011: p.17), Thaker & Azam (2009: p.10), Hassan & Kayed (2009: p.37), Meera & Larbani (2004: p.10)
3 Fractional reserve banking system	*Practice where banks lend out more than what they have in deposits. Multiple credit and monetary expansion can be produced through small changes in base money via the system of fractional reserve requirements. A small reserve base supports a large quantity of deposits and credit.*
	Othman, *et al.*(2012: p.12), Trabelsi (2011: p.17), Farooq (2009: p.8), Mirakhor & Krichene (2009: p.14-15), Thaker & Azam (2009: p.10), Meera & Larbani (2004:

	p.10), Garcia, *et al.* (2004: p.1)
4 Leverage system	*The concept refers to the use ofsmall amounts of equity capital to contract loans multiple of the amount of equity. Ina modern financial system, generally all financial institutions—banks and non-bankfinancial institutions—are highly leveraged.*
	Trabelsi (2011: p.17), Ahmed (2010: p.318), Smolo & Mirakhor (2010: p.372), Hassan & Kayed (2009: p.36), Mirakhor & Krichene (2009: p.26), Siddiqi (2009: p.3), Seidu (2009: p.28), Ahmed (2009: p.15), Chapra (2008: p. 2), Chapra (2007: p. 165&166)
5 Financial product derivation	*Financial product which derives its value from the value of underlying entities such as an asset, index, or interest rate--it has no intrinsic value in itself, such as credit default swaps (CDS) or collateralized debt obligation (CDO).*
	Trabelsi (2011: p.17), Ahmed (2010: p.308), Smolo & Mirakhor (2010: p.378), The Task Force on Islamic Finance and Global Financial Stability/TFoIFGFS (2010: p.26), Hassan & Kayed (2009: p.36), Siddiqi (2009: p.8), Seidu (2009: p.39), Ahmed (2009: p.18), Al-Masri (2009: p.290), Chapra (2008: p.16)
6 Credit creation through credit card	*Credit card gives new purchasing power to its holder by creating new credit out of nothing, similar to money creation in fractional banking system.*
	Trabelsi (2011: p.17), Al-Masri (2009: p.292&293), Obaidullah (2005: p.51)
UNSUSTAINABLE FISCAL SYSTEM	
1 Unsustainable fiscal deficit	*Government runs a budget where a government's expenditures always exceed the revenues that it generates in a long run.*
	Othman, *et al.*(2012: p.10), Chapra (2008: p.16), Ali (2006&2007: p. 9), Chapra (2007: p. 163), Iqbal & Khan (2004: p.1&5)
2 Excessive tax	*Condition where financial charge or other levy imposed upon a taxpayer by government administration is abnormally high.*
	Chapra (2007: p.163), Iqbal & Khan (2004: p.39)
3 Excessive sovereign debt	*Condition where the government heavily borrows externally to fill the gap of its fiscal deficits.*
	Othman, *et al.*(2012: p.9)**,** Chapra (2007: p.163), Ali (2006&2007: p.9), Iqbal & Khan (2004: p. 34 & 95), Khan (2001: p.253)
4 Excessive spending	*Government runs a budget where it has very high expenditures compare to its revenues.*
	Seidu (2009: p.31), Chapra (2007: p.163), Iqbal & Khan (2004: p.1), Khan (2001: p.239)
5 Poor inventory management of strategic commodities	*Inventory management, for strategic commodities to minimize the negative impacts of demand and supply shocks, is ineffective or non existence.*
	Chapra (2007: p.163), Oguz & Tabakoglu (1991: p.64)
6 Ineffective fiscal system	*Overall fiscal system does not work properly, where part of revenues do not go to public exchequer, while part of expenditures do not really spent for public purposes.*
	Chapra (2007: p.163), Iqbal & Khan (2004: p.96), Khan (2001: p.238-239),

Appendix B

A.1. Table 1. ANP Results

Name	Limiting	Normalized By Cluster	Name	Limiting	Normalized By Cluster
CRISIS					
High Inflation	0.018708	0.10757	Saving Debt Default	0.020557	0.1182
High Depreciation	0.029688	0.17071	Stock Market Crash	0.022523	0.12951

C. Account Deficits	0.020557	0.1182	Recession-Depression	0.041939	0.24115
Bank Run	0.019941	0.11466			
REAL CAUSES					
Mis-Behavior	0.004272	0.14739	Unstable Monetary Syst.	0.005782	0.19948
External Event	0.004887	0.1686	Unsustainable Fiscal Syst.	0.00699	0.24116
Poor Governance	0.007054	0.24337			
MIS-BEHAVIOR			UNSTABLE MONETARY SYSTEM		
Greediness	0.020501	0.12911	Interest	0.030097	0.1888
Individualism	0.020501	0.12911	Fiat Money	0.030097	0.1888
Hedonism	0.035694	0.22479	Fract. Reserve Banking	0.034634	0.21726
Speculation	0.040212	0.25325	Leverage System	0.020465	0.12838
Criminal Activities	0.018156	0.11434	Product Derivation	0.026563	0.16663
Expectation	0.023721	0.14939	Credit Card	0.017558	0.11014
EXTERNAL EVENT			UNSUSTAINABLE FISCAL SYSTEM		
Business Cycle	0.019414	0.12207	Fiscal Deficits	0.027389	0.17127
Natural Disaster	0.017788	0.11185	Excessive Tax	0.021259	0.13294
Contagion	0.023332	0.1467	Excessive Debt	0.02736	0.17109
Intl.Curr.System	0.025696	0.16157	Excessive Spending	0.02339	0.14626
Political Instability	0.031836	0.20017	Poor Inventory Syst.	0.020499	0.12819
Social Instability	0.040975	0.25764	Ineffective Fiscal Syst.	0.04002	0.25025
POOR GOVERNANCE					
Poor Administr.	0.025606	0.1601	Lack of Regulation	0.025606	0.1601
Corruption	0.030106	0.18823	Lack of Disclosure	0.025606	0.1601
Price Control	0.023271	0.1455	Wrong Man-Place	0.029747	0.18599