Searching for the Nexus between Money, Deposits, and Loans (Financing) in Malaysian and Turkish Islamic and Conventional Banking: A Comparative Analysis (2007-2013)

Mehmet Asutay*
Etem H. Ergec**

Abstract

This study attempts to analyse the causal relations between bank money and credit channel for Islamic and conventional banking in Malaysia and Turkey on a comparative level. Monthly data for the period from January 2007 to May 2013 is used for the Granger causality analysis. The findings show that in the case of bank money, the causality is from deposits to loans (financing) for Islamic banks in both countries. In addition, although causality is determined from money supply to loans in conventional banking in both countries, the same causality in Islamic banking is only identified in the case of Malaysia. Furthermore, in the causal relationship between bank deposits and money supply, causality is only found from money supply to deposits in both banking types in the case of Turkey. These results suggest that the credit channel may only operate over commercial banking in both countries and that it also only works over Islamic banking in Malaysia.

Keywords: *Islamic banking; bank money; credit channel; causality analysis, Turkey and Malaysia.*

---

*   Reader in Middle Eastern and Islamic Political Economy and Finance, School of Government and International Affairs; Director, Durham Doctoral Training Centre in Islamic Finance, Durham University Business School, Durham University, UK. Email: mehmet.asutay@durham.ac.uk

** Department of Economics, Faculty of Economics and Business Administration, Eskisehir Osmangazi University, Turkey. Email: ehergec@gmail.com

Introduction

Although there is a consensus on the neutrality of long-run monetary policy in economic theory, the short-run effect of money is not clear. Given that the way the reaction by the real variables of the monetary policy is defined as a monetary transfer mechanism, these channels were first considered as a money channel (or interest rate channel) by Keynesian economic theory; there are, however, now many alternative transfer mechanisms that are complementary to the conventional channel.[1] The differences between all of these alternative transfer mechanisms is demonstrated by the financial structures of the various countries, which make it difficult to offer a uniform definition that is applicable for all countries. Therefore, it appears that the effects of monetary policy to real economy are dependent upon the country and the time period in question. It should, however, be noted that to attain the desired outcomes of the monetary policy in the short and long term, it is necessary to possess a better understanding of how the bank money is generated and how the monetary transfer channels work in an economy. These two elements are important matters that should be considered in the designation of the monetary policies.

In an economy, a sound relationship between deposits and loans is crucial for the effective funding of the real sector. To this end, both conventional interest-based banks and the Islamic banks are important financial intermediaries in fund transfer. Although there are certain differences between the two banking systems in terms of their working principles and impact on the economy, the real function in both systems secures this connection. In conventional banking, money is received from the depositors to offer loans to the investors, yet this requires a different process in Islamic banking because the commercial utilisation of money 'as money' is prohibited in Islam.[2] This prohibition arises since deposits are used in investable businesses and allocated for particular investments for a variable return, which is generated from the relevant investment rather than from a fixed return determined at the time that the deposit is made, as is in the case of conventional finance. Despite these differences, bank money is generated in both banking systems as a result of the connection between deposits and loans, thus implying that establishing a connection between the deposits and loans of the banks as commercial enterprises is inevitable.[3] There is, however, a general conviction that in such a process the deposit is the cause and the loan is the result, but there is a possibility of a reverse relationship of cause and result.

Another crucial point for the desired results of the monetary policies is to know how monetary policy affects the economy and which monetary transfer channel works in the economy. In the loan channel, one of the monetary transfer channels, the monetary policy affects the real variables in the economy over the bank loans. This effect is more important for the economies where the banks serve as leading mediators and brokers in the financial system. Thus, the loans offered by the banks are influenced by the monetary policies, the change in the power of the banks to generate money, and the change in the ability of the firms to offer loans.[4] These channels consider the binding impact of the financial restrictions that are relevant to the presence of asymmetric information issues.[5] By the means of such channels, the monetary policy affects the cash flows, the net worth, and the external financial dependency in the business world.[6] As a result of these impact areas, the fund transfer costs that the firms bear because of asymmetric information are affected, resulting in change within bank loans.

The working of these monetary transfer channels implies a causal relationship between money supply and loans. There are many studies in the critical literature on this subject that offer empirical findings which provide evidence for the workings of such channels. Indeed, relevant entries to the aforementioned literature have been made by Ghazali and Rahman (2005), Said and Ismail (2007), Kassim and Majid (2009), and Hassin and Majid (2011); these figures have produced evidence for the existence and workings of these channels in the case of Malaysia; Sengönül and Thorbecke (2005), Bascı *et al.* (2007), and Aydın and Igan (2010) correspondingly produced evidence in the case of Turkey. It should, however, be noted that the empirical studies on Islamic banks, with reference to the loan channels, is relatively limited.

This study is then motivated by the limited empirical studies in the case of Islamic banks with regard to the subject matter, which aims to examine monetary supply and the bank money creation relationship in a comparative manner in Islamic and conventional banks for Turkey and Malaysia, with monthly data covering the period between January 2007 and May 2013. Such a comparison between Malaysia and Turkey is considered meaningful as both countries have a dual banking system, but they differ on the share of Islamic finance in total financing and the role of Islamic banking in the entire financial system. It should be noted that the Granger causality test is used as a method of analysis.

Islamic Banking and the Financial Sector in Malaysia and Turkey

The inception of Islamic (commercial) banking in Malaysia and Turkey can be traced back to the early 1980s. The liberalisation of the economy and finance sector during this period in Turkey provided an opportunity for the integration of Islamic banks (which were termed Special Finance Houses and which are now currently known as Participation Banks) with the objective of simultaneously attracting Gulf capital and aiming to overcome the financial exclusion due to religious reasons, namely the need to avoid interest or *riba* (Asutay, 2013). Consequently, the first Islamic bank or the Special Finance House was established in 1985. During the same period, Malaysia began its institutionalisation of Islamic banking based on some localised experience, such as Tabung Hajj, which had been in existence since 1969 as a *Shari'ah*-compliant investment agency for individuals' savings allocated to travelling for *hajj*. These efforts resulted in the incorporation of the first Islamic bank in Malaysia in 1983, which later developed into seventeen Islamic banks by the end of 2012. In this act, the search for Islamic identity played an important role alongside the need to locate an alternative development strategy for *Bumiputeras*, the indigenous Malay people.

Despite initiating the institutionalisation of Islamic banking around the same period, the trajectories of development in both countries have taken entirely different directions. Governments in Malaysia pursued rather intensive efforts to develop the sector by undertaking regulative-, legal-, institutional-, educational-, and training-oriented initiatives; the attitude in Turkey can, conversely, best be summarised as hesitant and timid (Asutay, 2013). The Malaysian policies paved the way for the development of the entire sector with the necessary infrastructure with the intention of getting Malaysia to become a global leader by reaching approximately 25% of the total banking sector in the country by 2015. As opposed to such progress, the Turkish experiment was mainly hampered by the political culture in the country, resulting in very slow growth path of reaching only approximately 5% of the banking sector in 2013 (Asutay, 2013). This difference can also be seen in the Islamic capital market developments, for although Malaysia is considered to be a leading *sukuk* market, Turkey only initiated *sukuk* issuance in recent years with the first corporate *sukuk* was issued in 2011.

There were fifty-six institutions including 17 Islamic banks offering Islamic financial services in Malaysia in 2012, yet this figure remained at only four institutions for Turkey (The Banker, 2012). This statistic also illustrates the entirely different trajectories of development and progress.

Table 1: Trends in Islamic Banking and Finance in Malaysia and Turkey

	Shari'ah-Compliant Assets in Malaysia (USD)	Share of Islamic Banks in the Banking Sector in Malaysia	*Shari'ah-Compliant Assets in Turkey (USD)*	Share of Islamic Banks in the Banking Sector in Turkey (%)
2007	65,083.37	15.5	10,065.96	3.35
2008	67,073.6	17.4	15,782.7	3.52
2009	86,288.2	19.6	17,827.5	4.03
2010	102,639.4	20.8	22,561.3	4.31
2011	133,406.38	21.8	28,015.20	4.41
2012	221,025.52	22.3	29,292.86	5.1

Source: The Banker (various years).

Data and Methodology

In responding to the aim of the study, causality analysis is considered to be instrumental; and for this, the Granger causality method (1969 and 1980) was employed as it helps to analyse the cause and effect relationship between two variables and the direction of this relationship or causality. In this methodology, if the expected value of one of the variables at a given time is affected by the past periods of the other series then the affecting variable is defined as the Granger cause of the affected variable.

The hypotheses that are tested in this paper using the Granger causality method are stated as follows.

H_0: Y is not the Granger cause of X.

$$X_t = \alpha_0 + \sum_{j=1}^{r} \alpha_j X_{t-j} + \sum_{j=1}^{r} \beta_j Y_{t-j} + \upsilon_t$$

H_0: X is not the Granger cause of Y.

$$Y_t = \alpha_0 + \sum_{j=1}^{r} \alpha_j Y_{t-j} + \sum_{j=1}^{r} \beta_j X_{t-j} + \upsilon_t$$

The significance of the causality relationship between these two variables depends on the coefficient produced by these equations. If the coefficients of the independent variable (β) are significant, it means that the Granger causality runs from the independent variable to the dependent variable. It should be noted that for the causality test, the series does, however, need to be stationary and there should be no cointegration relationship between the variables. Therefore, the stationary of the series for this paper was assessed by the Augmented Dickey-Fuller (ADF) test, and the cointegration relationship between the variables was measured by the Johansen cointegration test. In the event that there is a cointegration relationship between the variables then the error correction terms should be inserted into the models for the causality test.

This study used the monthly data sets for Malaysia for the period from January 2007 to March 2013 and for Turkey for the period from January 2007 to May 2013. All the data for Malaysia was obtained from the Monthly Statistical Bulletin on Bank Negara Malaysia; the data for Turkey was attained from the Electronic Data Dissemination System of the Central Bank of the Republic of Turkey.

For all analyses, the real value of variables was used; consumer price index (CPI, 2005=100) was employed to transform the current value of variables. In addition, all of the variables were deseasonalised by means of a Cesus 12 before the tests. The lag length in the Granger causality tests is determined by the consultation of Akaike's Information Criteria (AIC).

The variables used in the analyses are as follows:
CBD: Commercial Bank's Deposits
IBD: Islamic Bank's Deposits
CBL: Commercial Bank's Loans
IBL: Islamic Bank's Loans/Financing
M3: M3 Money Supply

The trends of the variables for both countries are shown in figures one and two. Similar trends thus emerge within the banking systems in both Malaysia and Turkey, yet for Malaysian Islamic and conventional banking, the fluctuations in the loans (financing) are more severe than the fluctuations in the deposits. This may mean that greater caution is needed in the liquidity management, and interest rate and profit-loss-sharing risk developments for the Malaysian economy.

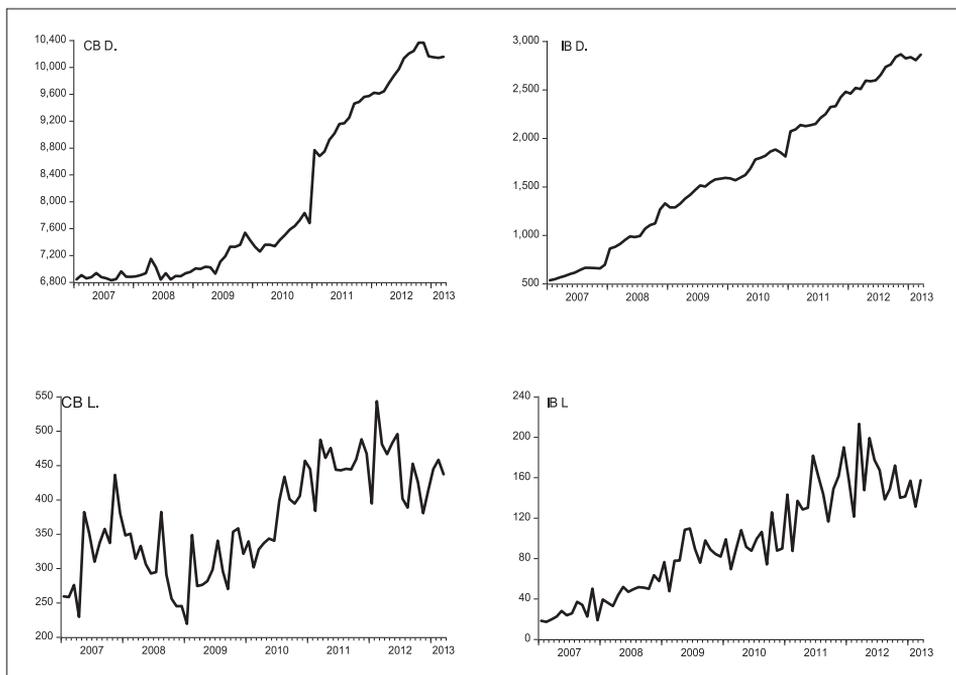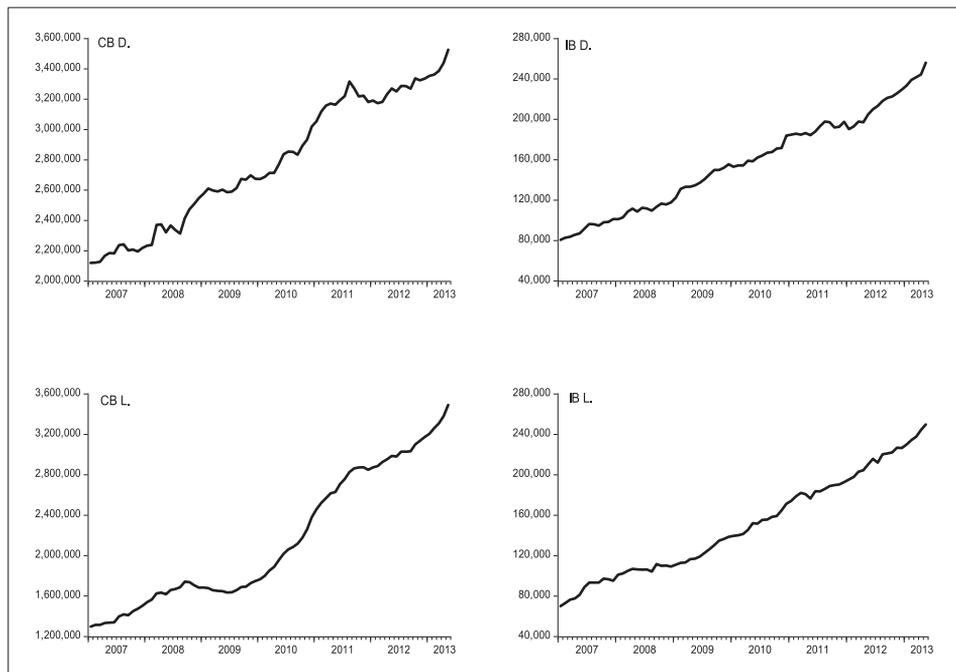**Figure 1:** Trends in the Malaysian Variables

Figure 2: Trends in the Turkish Variables

In the next step before the application of the Granger test, the results of the unit root tests of the variables for both the countries are examined, and the results are presented in Table 2, which indicates that there is no unit root in the data series.

Table 2: The Results of the ADF Tests

|	Level		First Dif.	
	t-Stat.	**Prob.**	**t-Stat.**	**Prob.**
Malaysia				
CBD	-1.86389	0.6631	-9.25386	0
CBL	-2.12613	0.5225	-10.2781	0
IBD	-2.7492	0.251	-5.47098	0
IBL	-2.43365	0.302	-6.6546	0
M3	-1.65527	0.761	-8.30748	0
Turkey				
CBD	-2.4138	0.3697	-6.35579	0
CBL	-0.98554	0.9394	-4.72086	0.0014
IBD	-1.39483	0.8548	-8.27992	0
IBL	-0.87839	0.9527	-9.5192	0
M3	-1.78135	0.7042	-5.83999	0

Analyses and Findings

This section presents the analyses that are related to the causality relationships between the following factors:

(i) The deposits and financing or loans of Islamic and conventional banks, denoted by (*a*);
(ii) Money supply and Islamic and conventional banks, denoted by (*b*).

Figure 3 summarises the tested causality relationships that are analysed by this paper.

Figure 3: The Operational Nature of the Model
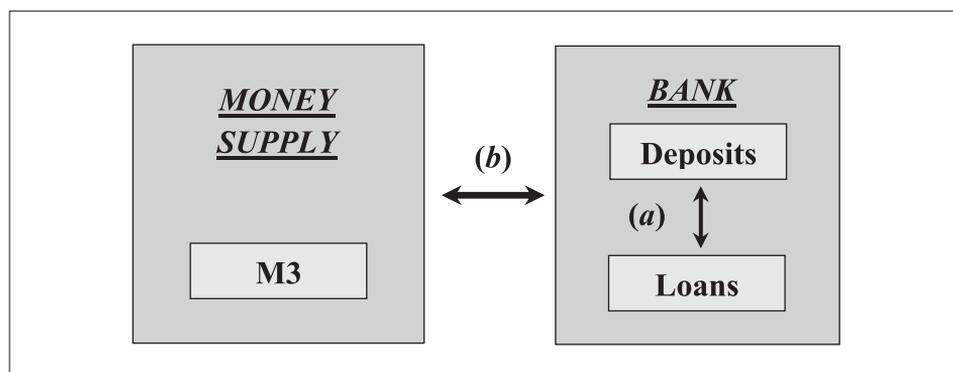
The Causality Relationship between the Deposits and Bank Loans

In this section, the causal relationship between the deposits and loans of the conventional and Islamic banks are tested; the results are then compared for Malaysia and Turkey with the objective of determining the direction of the casual relationship in the generation of bank money within the two banking systems for both countries. Thus, the following relationship is tested:

Bank Deposits ⟷ Bank Loans

The results of the Johansen cointegration tests are illustrated in Table 3; the cointegration causality is then identified between the variables.

Table 3: The Results of the Johansen Cointegration Tests on the Deposits and Loans

|		Eigenvalue	Trace	Prob.	Max-Eigen	Prob.
Malaysia						
CBL and **CBD**	None	0.151245	11.81606	0.166	11.80686	0.1181
	At most 1	0.000128	0.0092	0.9232	0.0092	0.9232
IBL and **IBD**	None	0.129604	10.08582	0.2742	9.994083	0.2123
	At most 1	0.001273	0.091733	0.762	0.091733	0.762
Turkey						
CBL and **CBD**	None	0.056473	4.351795	0.8732	4.301626	0.8262
	At most 1	0.000678	0.050168	0.8227	0.050168	0.8227
IBL and **IBD**	None	0.056213	6.53631	0.6321	4.281262	0.8286
	At most 1	0.030014	2.255049	0.1332	2.255049	0.1332

The results of the Granger causality analysis conducted with these variables are shown in Table 4.

Table 4: The Results of the Granger Causality Tests Between the Deposits and Loans

Direction of Causality	F_Stat.	Prob.	Lag
Malaysia			
CBL→CBD	**2.43733**	**0.0368**	**6**
CBD→CBL	0.55419	0.7646	
IBL→BD	0.22121	0.8021	2
IBD→IBL	**6.80486**	**0.002**	
Turkey			
CBL→CBD	1.44604	0.2425	2
CBD→CBL	**7.15161**	**0.0015**	
IBL→IBD	1.55464	0.1773	6
IBD →IBL	**2.84798**	**0.017**	

The results of Table 4 are summarised in Figure 4, which shows the direction of the casual relationship in generating bank money for both economies.

Figure 4: Summarising the Results for the Causality Tests Between the Deposits and Loans
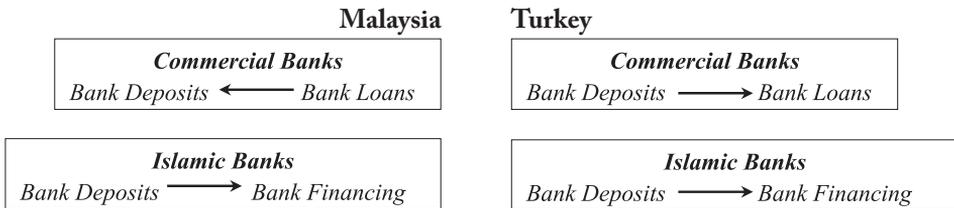
Both Table 4 and Figure 4 establish the direction of the casual relationship between deposits and loans in both countries for Islamic banking. Thus, Islamic bank deposits Granger cause the funds/financing of these banks offer in both the countries. When compared to the Malaysian economy, it is found that this causal relationship is delayed for the Turkish economy.

With regard to the commercial banks, the direction of the causality is different in both countries: causality runs from the loans to the deposits in Malaysia, yet in Turkey it runs from the deposits to the loans. For Malaysia, commercial bank loans therefore appear to lead to further deposits in the financial system.

The Causal Relationship between Commercial Banks and Money Supply

Here, the causal relationship between money supply and the commercial banks' deposits and loans are analysed. For the functionality of the loan channel, causality from the monetary supply to the bank loans is essential. Therefore, finding the causality relationship from the money supply to the bank deposits indicates the presence of the monetary channel, as is expressed by the following arrangement.
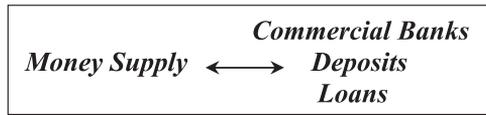
The results of the cointegration tests on the variables are presented in Table 5 indicating the presence of no cointegration.

Table 5: The Results of the Johansen Cointegration Tests on the Variables and Money Supply for Commercial Banks

|		Eigenvalue	Trace	Prob.	Max-Eigen	Prob.
		Malaysia				
CBD and *M3*	None	0.1633	13.07427	0.1121	12.83686	0.083
	At most 1	0.003292	0.237412	0.6261	0.237412	0.6261
CBL and *M3*	None	0.139324	10.82458	0.2225	10.80263	0.1644
	At most 1	0.000305	0.021944	0.8822	0.021944	0.8822
		Turkey				
CBD and *M3*	None	0.085358	6.649717	0.6187	6.602438	0.5372
	At most 1	0.000639	0.047279	0.8278	0.047279	0.8278
CBL and *M3*	None	0.068959	5.468067	0.7573	5.28742	0.7052
	At most 1	0.002438	0.180647	0.6708	0.180647	0.6708

After ensuring the presence of no cointegration, Table 6 displays the results of the Granger causality test analysis between the variables of commercial banks and money supply.

Table 6: The Results of the Granger Causality Tests Between the Variables and Money Supply for Commercial Banks

Direction of Causality	F-Stat.	Prob.	Lag
Malaysia			
M3→CBD	0.535	0.5881	2
CBD→M3	0.249	0.7799	
M3→CBL	**3.915**	**0.0518**	**1**
CBL→M3	1.173	0.2826	
Turkey			
M3→CBD	**8.07386**	**0.0007**	**2**
CBD→M3	2.19866	0.1187	
M3→CBL	**3.91661**	**0.0516**	**1**
CBL→M3	2.70198	0.1046	

The results presented in Table 6 are summarised by Figure 5, which illustrates the direction of the Granger causality.

Figure 5: Summarising the Results for the Causality Tests Between Money Supply and Bank Deposits and Bank Loans
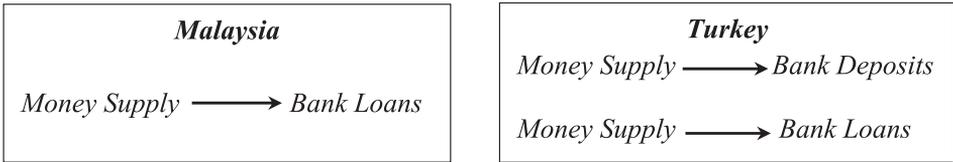
As can be seen from the results, the identification of the causal relationship from the money supply to the commercial bank loans shows that the loan channel works over the commercial banks in both economies. This result confirms the empirical findings in the available literature. In addition, the causal relationship is found to be running from the money supply to bank loans in the case of Turkey, whereas there is no such relationship for the Malaysian economy.

The Causality Relationship Between Islamic Banks and Money Supply

Here, the causal relationship between the money supply and deposits and financing for the Islamic banking variables is examined for both Malaysia and Turkey; it is summarised as follows:

In the first step, cointegration is investigated for all of the variables for both countries, and the results are depicted in Table 7.

Table 7: The Results of the Johansen Cointegration Tests on the Variables and Money Supply for the Islamic Banks

|		Eigenvalue	Trace	Prob.	Max-Eigen	Prob.
Malaysia						
IBD and *M3*	None	0.05356	3.988147	0.9045	3.963432	0.8632
	At most 1	0.000343	0.024715	0.875	0.024715	0.875
IBL and *M3*	None	0.136662	10.6155	0.2363	10.58036	0.1765
	At most 1	0.000488	0.035141	0.8513	0.035141	0.8513
Turkey						
IBD and *M3*	None	0.081467	9.422522	0.3277	6.28836	0.5765
	At most 1	0.041469	3.134162	0.0767	3.134162	0.0767
IBL and *M3*	None	0.057549	7.233189	0.5507	4.386045	0.8165
	At most 1	0.037744	2.847144	0.0915	2.847144	0.0915

As can be seen in Table 7, the Johansen cointegration test results show no cointegrated relationship. Based on this result, Table 8 presents the results of the Granger causality test for Islamic banks in both countries.

Table 8: The Results of the Granger Causality Tests Between the Variables and Money Supply for the Islamic Banks

Direction of Causality	F_Stat.	Prob.	Lag
Malaysia			
M3→IBD	0.49151	0.6139	2
IBD→M3	1.28159	0.2843	
M3→IBL	**3.01627**	**0.015**	**19**
IBL→M3	1.42564	0.2391	
Turkey			
M3→IBD	**3.29134**	**0.0738**	**1**
IBD→M3	0.0018	0.9663	
M3→IBL	1.45433	0.2183	5
IBL→M3	**3.1755**	**0.0131**	

The results of Table 8 are summarised in Figure 6.

Figure 6: Summarising the Results for Causality Tests between Money Supply and Islamic Bank Deposits and Financing

Malaysia
Money Supply ⟶ *Bank Financing*

Turkey
Money Supply ⟶ *Bank Deposits*
Money Supply ⟵ *Bank Financing*
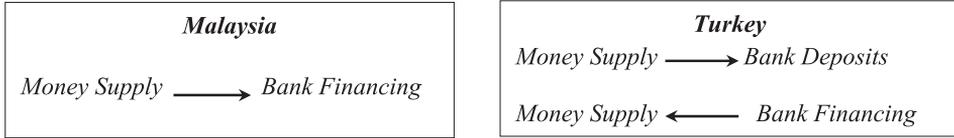
For Malaysia, the results indicate that the direction of causality is the same for commercial bank loans and the Islamic banking financing; as is the case for Islamic banks, the causality runs from *M3* to financing. The causality does, however, work in the reverse direction for the Turkish economy, thereby implying that Islamic bank financing affects *M3* or money supply. In addition, the results suggest that money supply in the economy determines Islamic bank deposits in Turkey. These results indicate that the financing (loan) channel works for Islamic banks for Malaysia, whereas the same channel does not work over the Islamic banking in Turkey. It can then be inferred that the Islamic interbank market will remain a problem in Turkey. With the operation of the Islamic money market in Malaysia, this has provided the opportunity to affect the economy through central bank operations over Islamic banks, whereas the lack of an Islamic money market in Turkey implies that the central bank has no such power to influence the Islamic bank financing in Turkey. This distinction can again be explained by Malaysia's concerted effort to provide the necessary infrastructure for the smooth operation of Islamic banks within the country.

Conclusion

This study analyses the direction of causal relationships in bank money creation and money supply by using monthly data sets (covering the period between 2007 and 2013) for Islamic and conventional banks in Malaysia and Turkey; further, it employs the Granger causality method. The results are described in detail throughout section four of this study and they are summarised in Figure 6.
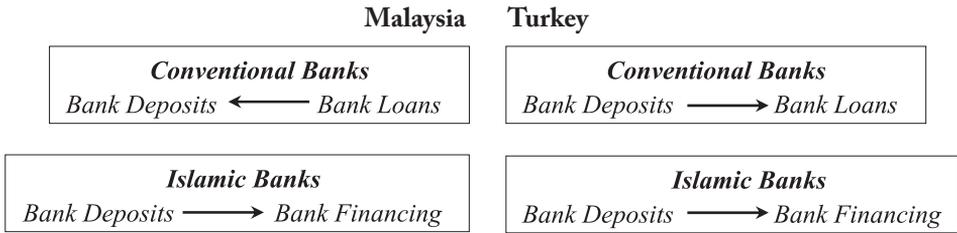
It should be noted that although it could be the case that this method may not be sufficient to determine the transfer channel alone, the comparison of the results from two banking systems in both countries offers

an opportunity to understand the direction of causality in the bank money creation, as well as informing the efficiency and the functionality of the loan or financing and monetary channels in both banking systems.

The results show that the direction of causality between loans (financing) and deposits is the same in both countries for Islamic banking: the funds that the Islamic banks collect in both countries are the Granger cause of the funds these same banks offer in financing. This result fulfils the theoretical expectations in relation to use of the collected funds. When compared to the Malaysian economy, this causal relationship is, however, found to be appearing with delays for the Turkish economy.

With regard to the conventional banks, the results reveal that the direction of causality is different in both countries. In Malaysia, causality is determined from loans to deposits, whereas the direction of causality is from deposits to loans in Turkish conventional banking. Thus, Turkish conventional and Islamic banks show similar causal directions.

Figure 6: Summarising the Results

	Malaysia	Turkey

Conventional Banks	**Conventional Banks**
Bank Deposits ⟵ Bank Loans	Bank Deposits ⟶ Bank Loans

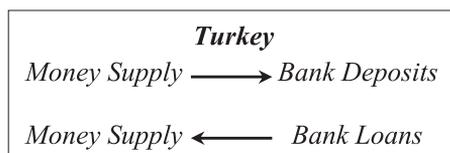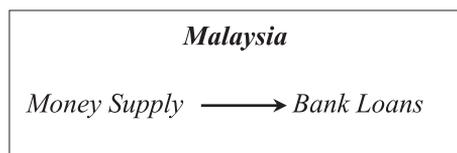| **Islamic Banks**	**Islamic Banks**
Bank Deposits ⟶ Bank Financing	Bank Deposits ⟶ Bank Financing

With regard to the causality between money supply and deposits and loans, the results show that the money supply has an impact on both banking systems in both countries. For both economies, the direction of causality between money supply and the conventional bank loans is determined to be from money supply to the bank loans. This shows that for both economies, the loan channel works over conventional banks. Given that conventional banks have a larger share in the financial system, the working of this channel is important when conducting the monetary policies.

Malaysia	**Turkey**
Money Supply ⟶ Bank Loans	Money Supply ⟶ Bank Loans

With regard to the causality relationship on the conventional bank deposits, the results demonstrate that the causal relationship between the deposits and money supply is only present in Turkey. The direction of this causal relationship conforms to the working of the money channel. Therefore, the monetary channel can be considered as present and working for Turkey.

Turkey

Money Supply ⟶ *Bank Deposits*
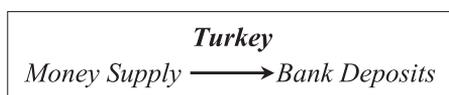
Similar analyses were also conducted for Islamic banks in this study. For Malaysia, the direction of the causality found for conventional banking is seen to be valid for Islamic bank financing, yet the direction of the causality is in the opposite direction for Turkey. These results indicate that the probability of having the financing channel working for Malaysia over Islamic banks is higher than that of the same channel not to be working over Islamic banking in Turkey.

Malaysia

Money Supply ⟶ *Bank Loans*

Turkey

Money Supply ⟶ *Bank Deposits*

Money Supply ⟵ *Bank Loans*

Furthermore, this study finds that the causal relationship between the money supply and Islamic bank financing is found to be taking place with delays in both countries implying that the impact of any change in money supply on the financing of Islamic banking emerges with delay. This situation may lead to differentiation in the reaction to change in the money supply of the firms and sectors using loans and financing from both banking systems. In addition, depending on the magnitude of the differences of the potential reaction and the relative size of the Islamic banking in the country, this may affect the efficiency of the monetary policy. To ensure that such a situation does not lead to the loss of efficiency, the need may arise to use the instruments of Islamic monetary policy more effectively, which needs to be developed in order to help Islamic banks to function properly.

Ultimately, in both countries, the loan channel works over conventional banks, whereas this only works over Islamic banks in Malaysia. It should be noted that the money channel or the money supply-deposit relationship is stronger in Turkey than it is in the case of Malaysia. The possibility of the financing channel working relatively weaker over Islamic banking in Turkey may, however, create problems in the distribution of the impact of monetary expansion and contraction in terms of the monetary management. The possibility of this situation causing any potential problems is related to the size of Islamic banking. Even though the size of Islamic banking represents approximately 5% of the financial system in terms of its asset base in Turkey (see Table 1), this potential issue should still be taken into consideration by the Central Bank of Turkey to prevent it from developing into a problem. In addition, the similar asymmetric impact for both countries should also be taken into account with regard to the differences in the delay periods. The absence of an Islamic interbank market in Turkey could, however, potentially lead to problems on a macro level. In the future (and echoing the development of the size of Islamic banking), when the functioning of the financing channel over Islamic banking gets stronger, the absence of an Islamic interbank market in Turkey may result in financial and operational difficulties. This constitutes the essential reason for the development of such infrastructural institutions, which can be instrumental for the consolidation and sustainability of the Islamic banking sector in Turkey.

Endnotes

1   See Mishkin (1995) for a detailed discussion of the monetary transmission mechanism.
2   "Money does not have any inherent value in itself and therefore money cannot be created through the credit system, thereby providing another rationale for the prohibition of interest" (Asutay, 2010: 39). For a detailed discussion, see Chapra (1985).
3   Hasan (2008 and 2011) notes in his studies, wherein bank money generation is evaluated with regard to the Islamic framework, that money is not a religious concept. Despite differences in the process of generating bank money, Hasan also refers to similarities and suggests that central banks should develop tools and mechanisms, which could affect the Islamic banks' ability to generate money.
4   There are two major loan channels that could be described as a bank loans channel and a balance channel operating over the bank loans (Mishkin, 1995). In the bank loans channel, based on the power of the banks to generate money, the opportunities of the banks to offer loans react to the monetary policies (Bernanke and Bilinder,

1992; Kashyap and Stein, 1993; Kashyap et al., 1993). Another loan channel, which could be termed a balance sheet or net value channel, reacts to the monetary policy because of the financial restrictions of firms (Bernanke and Gertler, 1995; Calomiris and Hubbard, 1990).

5　Asymmetric information can affect the cost of funds in financial markets (Hubbard, 1998).

6　The external finance premium, which refers to the difference between internal and external finance cost, is reversely affected by the net worth of the firms (Bernanke et al., 1996).

References

Asutay, M., 2010. Islamic Banking and Finance and Its Role in the GCC-EU Relationship: Principles, Developments and the Bridge Role of Islamic Finance. In: C. Koch and L. Stenberg, eds., *The EU and the GCC: Challenges and Prospects under the Swedish EU Presidency*. Dubai, UAE: Gulf Research Center. pp. 35-58.

Asutay, M., 2013. Developments in Islamic Banking in Turkey: Emergence, Regulation and Performance. In: V. Cattelan, ed., *Islamic Finance in Europe: Towards a Plural Financial System*. Cheltenham: Edward Elgar. pp. 213-227.

Aydın, Burcu and Igan, Deniz, 2010. Bank Lending in Turkey: Effects of Monetary and Fiscal Policies. *IMF Working Paper,* No: WP/10/233. Washington, D.C.: IMF.

Başçı, Erdem; Özel, Özgür and Sarıkaya, Çağrı, 2007. The Monetary Transmission Mechanism in Turkey: New Developments. *The Central Bank of the Republic of Turkey Research and Monetary Policy Department Working Paper,* No: 07/04. Ankara: Turkey.

Bernanke, Ben S. and Blinder, Alan S., 1992. The Federal Funds Rate and The Channels of Monetary Transmission. *The American Economic Review,* 82(4), pp. 901-921.

Bernanke, Ben S. and Gertler, M., 1995. Inside the Black Box: The Credit Channel of Monetary Policy Transmission. *The Journal of Economic Perspectives,* 9(4), pp. 27-48.

Bernanke, Ben S.; Gertler, M. and Gilchrist, S., 1996. The Financial Accelerator and Flight to Quality. *The Review Economics and Statistic,* 78(1), pp. 1-15.

Calomiris, Charles W. and Hubbard, R. G., 1990. Firm Heterogeneity, Internal Finance and Credit Rationing. *The Economic Journal,* 100(March), pp. 90-104.

Çavuşoğlu, A. Tarkan, 2002. Credit Transmission Mechanism in Turkey: An Empirical Investigation. *ERC Working Papers in Economics* No. 02/03.

Chapra, M. U., 1985. *Towards a Just Monetary System: A Discussion of Money, Banking, and Monetary Policy in the Light of Islamic Teachings*. Leicester: Islamic Foundation.

Fidlizan, M., Sulaiman, M. A., Yahya Mohd, H. M. and Abdul Razak, A., 2012. Does Islamic Interbank Rate Influence Bank Characteristics and Economic Cycle in Malaysian Monetary Transmission?. *Asian Journal of Finance and Accounting*, 4(2), pp.131-144.

Ghazali, Noor Azlan and Rahman, Aisyah Abdul, 2005. The Transmission Mechanism of Monetary Policy in Malaysia: Through Bank Loans or Deposits?. *Journal of Economics and Management*, 13 (1), pp. 1-18.

Granger, C. W. J., 1969. Investigating Causal Relations by Econometric Models and Cross-Spectral Methods. *Econometrica*, 37 (3), pp. 424-38.

Granger, C. W. J., 1980. Testing for Causality: A Personal Viewpoint. *Journal of Economic Dynamics and Control*, 2 (1), pp. 329-352.

Hasan, Zubair, 2008. Credit Creation and Control: An Unresolved Issue in Islamic Banking. *International Journal of Islamic Middle Eastern finance and Management*, 1(1), pp. 69-81.

Hasan, Zubair, 2011. Money Creation and Control from an Islamic Perspective. *Review of Islamic Economics*, 15 (1), pp. 93-111.

Hasin, Zamrah and Majid, M. Shabri Abd., 2011. *The Importance of the Islamic Banks in the Monetary Transmission Mechanism in Malaysia*. 8th International Conference on Islamic Economics and Finance. Doha, Qatar, December 201. Qatar: Qatar Faculty of Islamic Studies.

Hubbard, R. Glenn, 1998. Capital-Market Imperfections and Investment. *Journal of Economic Literature,* 36(1), pp. 193-225.

Kashyp, Anil K. and Stein, Jeremy C., 1993. Monetary Policy and Bank Lending. *NBER Working Paper Series*, No: 4317. New York: NBER.

Kashyap, Anil K., Stein J. C., and Wilcox, D. W., 1993. Monetary Policy and Credit Conditions: Evidence from the Composition of External Finance. *American Economic Review,* 83(1), pp. 78-98.

Kassim, Salina and Majid, M. Shabri Abd., 2009. The Role of Bank Loans and Deposits in the Monetary Transmission Mechanism in Malaysia. *International Journal of Banking and Finance*, 6(2), pp. 37-59.

Mishkin, F., 1995. Symposium on the Monetary Transmission Mechanism. *Journal of Economic Perspectives,* 9(4), pp. 3-10.

Said, Fathin. F. and Ismail, Abd. G., 2007. How Does the Changes in Monetary Policy Affect Lending Behavior of Islamic Banking in Malaysia?. *Jurnal Ekonomi Pembangunan,* 12(3), pp. 163-177.

Sengonul, A. and Thorbecke, W., 2005. The Effect of Monetary Policy on Bank Lending in Turkey. *Applied Financial Economics*, 15(13), pp.931–934.