

The performance of monetary policy: A comparison between civil-law and common-law countries

Zukarnain Zakaria

zc9@hotmail.com

Faculty of Management and Human Resource Development
Universiti Teknologi Malaysia

Abstract

The objective of this paper is to compare the effectiveness of monetary policy between civil-law countries and common-law countries by investigating the impulse response of monetary policy actions on the level of output. This is to determine whether countries of common-law origin are less sensitive to monetary policy actions compared with civil-law countries. Theoretically, we expected that monetary policy is more effective in civil-law countries where their financial structures are more bank-based as compared to common-law countries where their financial structures are more market-based. The impulse response functions were generated through the estimation of first-differences VAR consisting of five variables. The findings show the impact of monetary policy is relatively stronger, responds more quickly and long lasting in civil-law countries compared with common-law countries.

Keywords: *Monetary Policy, financial structures, impulse response, civil-law, common-law*

Introduction

In the credit view, the channel of monetary transmission mechanism can be divided into two; the bank lending channel, and the balance sheet channel. The former is related to banks' ability and the latter to their willingness to supply loans to the private sector. In contrast with traditional theories, the credit view focuses on the importance of banks in transmitting monetary policy actions. This is based on the fact that the banking sector serves as the main source of finance for both households and firms, thus changes in banks loan could have consequences on the total output through its effect on private sector spending. The credit view, however, relies on the assumption of imperfect capital markets, which implies that the effects of monetary policy may differ between firms, industries or countries. This means that differences in countries' financial structures may have different impacts from monetary policy impulses. Meanwhile, the differences in financial structure across countries could be related to their legal structures. This argument draws from the work of La Porta *et al.* (1997), who focus on the relationship between legal structure and finance. In their paper, La Porta *et al.* show that the variations in the financial structures across countries are related to differences in the countries' legal systems. Cecchetti (1999), by using the La Porta *et al.* argument and the credit view of monetary policy has investigated the possibility that the legal system in a country has an influence on the impact of monetary policy on output and prices. In a study of eleven European Union countries, Cecchetti found that a country's legal structure, financial structure, and monetary transmission mechanism are interconnected. Specifically, the study found that in countries with better legal protection for shareholders and debtors, the impact of an interest rate change on output and inflation is lower.

The objective of this paper is to investigate the relationship between countries' legal structure and the performance of monetary policy. Specifically, the objective of this paper is to

determine whether there is any difference in the effectiveness of monetary policy actions between countries with different legal structures, that is, between civil- and common-law countries. This is based on the fact that empirical studies that directly look at the relationship between legal structure and monetary policy effectiveness are very limited. Thus, there are several questions related to this relationship that need further clarification, and this has motivated this study. This is because the finding from Cecchetti (1999) on the issue is far from conclusive, due to the fact that his study only focuses on 11 developed countries of European Union where the development of the financial sector is relatively similar. In this regard, the question of interest is whether the similar findings can be observed if the sample in the study is extended to include both developed and developing countries. With a different level of financial development and growth pattern among countries, this study with a larger sample and covering both developed and developing countries is expected to provide more information on the effectiveness of monetary policy in civil-law countries and common-law countries.

In this paper, the relationship between legal structures and the effectiveness of monetary policy was investigated in a larger sample of 24 countries. The sample consists of 12 civil-law countries and 12 common-law countries. Out of 12 countries of civil-law tradition, 8 are developing countries, while for common-law countries, there are 6 developing countries. The impulse responses of a monetary policy shock on output have been estimated for individual countries and then comparisons have been carried out between civil and common-law countries.

Literature Review

Financial Structure and Monetary Policy

Financial structure refers to the nature of the components that make up a financial system. Allen and Gale (2001) identify these components as the agents in the system, financial institutions, financial markets, the central bank, the regulatory authority, the political system (that is, government and its policies), the legal system (particularly contract enforcement and governance mechanisms), custom (that is, the importance of reputation and other implicit mechanisms for contract enforcement), accounting systems, and the nature of the incentive to generate and disseminate information. Empirically, Levine (2002) measures financial structure by constructing an index that reflects the aggregate size, activity, and efficiency of the financial institutions sector relative to the financial markets sector of the country.

Based on Levine, Tadesse (2001) uses a dummy variable to classify a financial system as either market-based or bank-based. If Levine's conglomerate index of size, activity, and efficiency for a country is above the mean value of the index then Tadesse classifies the country as having a bank-based financial system. If the index is below the mean then Tadesse classifies the financial system as market-based. Cecchetti (1999) focuses on the structural aspects of the financial systems that are important for the transmission mechanism. He constructs an aggregate index of financial structure based on the size and concentration of the banking sector, the health of the banking system, and the relative amount of credit allocated through banks. These are the financial variables that the lending view of the transmission mechanism suggests should be important.

Empirical findings clearly indicate that the nature of the transmission mechanism is influenced by the structure of a country's financial system. Cecchetti (1999), for example, investigates the importance of firms' dependence on bank loans for the effectiveness of policy changes. He looks at how differences in the size, concentration, and health of the banking

systems, across a sample of 16 countries, are likely to affect the impact of monetary policy and concludes that countries with many small banks, less healthy bank systems, and poorer direct capital access display a greater sensitivity to policy changes than do countries with big healthy banks and deep, well-developed capital markets. Allen and Gale (2001) look at the evidence related to differences in financial structure and growth between countries over a long average period of time. They find that, in general, financial structure does affect aggregate real economic variables. Meanwhile, Cecchetti and Krause (2001) study the issue of whether financial structure affects the effectiveness of monetary policy. Cecchetti and Krause look at 23 developed and emerging market countries and find that financial structure does matter. Specifically, countries with less direct state ownership of banking system assets have lower variances of both output and inflation.

Legal Structure and Monetary Policy

La Porta *et al.* (1997, 1998) found that a country's legal system is related to its financial structure. According to La Porta *et al.*, investors provide capital to firms only if they believe they will get their money back. For equity holders, this means that they must be able to vote out directors and managers who do not pay them. For creditors and holders of bonds, this means that they must have authority to repossess collateral. Furthermore, these legal rights must be accompanied by confidence that the laws will be enforced. In countries where these protections are strong, equity and bond markets are broad and deep and primary capital markets will be important. By contrast, in countries where investor protections are weak, finance will come primarily through the banking system. Specifically, La Porta *et al.* examined the relationship between shareholders' rights, creditor rights, and enforcement on the one hand and the concentration of ownership and availability of external finance on the other, and came to two conclusions. La Porta *et al.* found that civil-law give investors weaker legal rights than common-laws do. Common-law countries give both shareholders and creditors the strongest, and French-civil-law countries the weakest, protection. German-civil-law and Scandinavian countries generally fall between the other two. The quality of law enforcement is the highest in Scandinavian and German-civil-law countries, next highest in common-law countries, and again the lowest in French-civil-law countries.

In addition, La Porta *et al.* (1997, 1998) also found that, first, corporate ownership is more concentrated in countries where shareholders and creditors are poorly protected by both the substance of the law and its enforcement. Second, countries with weaker legal rules and less rigorous law enforcement have smaller and narrower capital markets. The findings suggest that English common-law countries have the least concentration of corporate ownership and the largest and deepest capital markets. Meanwhile, French civil-law countries have the most concentrated ownership and the smallest capital markets. In line with La Porta *et al.*, Demirgüç-Kunt and Levine (1999) also found that countries with common-law tradition were more market-based while countries with a French civil-law tradition have been found to be more bank-based, suggesting that financial structure is not independent of the legal structure used by the system. These findings clearly indicate that legal structure shapes the financial structure of the countries. Given the importance of banks in the monetary transmission process, this leads the author to conclude that country legal structure is important for monetary policy effectiveness.

With regard to the effects of monetary policy on economic activities, empirical studies found that the effectiveness of monetary policy varied considerably among countries. Gerlach and Smets (1995), for example, found that the effects of a change in the monetary shock on output were somewhat larger in Germany than in France or Italy, while the United Kingdom fell

somewhere in between. However, the differences in the transmission of monetary policy documented in the Gerlach-Smets study were not very large. Meanwhile, Barran *et al.* (1996) found that the effect of a contractionary monetary shock on output is relatively long lasting in Germany, with output bottoming out about 10 quarters after the shock, somewhat less long lasting in the United Kingdom with output bottoming out after about 8 quarters, whilst in France output reaches the trough about 6 quarters after the shock. Dornbusch *et al.* (1998) estimate the impact of a coordinated monetary policy move on activity in a group of EU countries, controlling for intra-European exchange rates. They find that the 'impact-effects' of a change in monetary policy are similar in Germany, France, and the United Kingdom, but smaller than in Sweden and Italy. The full effects of the coordinated monetary policy move are, however, lower in the United Kingdom than in Germany and France, a result that is broadly consistent with that of Britton and Whitley (1997). Ramaswamy and Sløk (1998) looked at the speed of adjustment to an unanticipated contraction in monetary policy. Using the VAR approach, they found that the EU countries fall into two broad groups as far as the transmission of monetary policy is concerned. In one group (Austria, Belgium, Finland, Germany, the Netherlands, and United Kingdom, output typically bottoms out about 11 to 12 quarters following a contractionary monetary shock. In the other group (Denmark, France, Italy, Portugal, Spain, and Sweden), output typically bottoms out about 5 to 6 quarters after a contractionary monetary shock.

Methodology

Estimation Strategy

In this paper, the effectiveness of monetary policy actions in the countries being studied are examined by using impulse response functions. In order to calculate the impulse responses, this study employs a vector autoregression (VAR) approach. Meanwhile, there is a serious reason to question the finding of time series studies that do not properly account for unit roots in the data. Failing to account for the presence of unit roots can lead to inconsistent coefficient estimates and result in wrong inferences being drawn. Phillips (1998) criticised the use of levels VARs in the presence of some unit roots or some near-unit roots in order to derive impulse responses. He showed that long run impulse response estimates are inconsistent in unrestricted levels VARs. Many macroeconomic variables are well described by unit root processes so this criticism should be taken seriously. Thus, this paper first examines the unit root properties of each series of the VAR model. The presence of unit roots has been tested by using the Augmented Dickey-Fuller tests (ADF) and the Phillips-Perron tests (PP). In general, the findings from unit root tests show that most of the series are nonstationary in levels but stationary in the first differences. This finding suggests the first differences VAR is more appropriate than levels VAR to model the series.

In order to derive impulse responses, a set of identifying restrictions has to be imposed. There are two approaches that are widely used to achieve identification of the shocks. The first approach is based on imposing restrictions on the contemporaneous effects of shocks, while the second approach is based on imposing long-run restrictions on the effects of shocks. To impose contemporaneous restrictions, the standard approach is a Choleski decomposition of the residual covariance matrix from the VAR model. This approach imposes a contemporaneous recursive structure on the shocks that depends in a crucial way on the ordering of the variables in the system. The ordering reflects the speed at which variables respond to shocks. The literature on monetary transmissions has suggested several different orderings. However, there is no agreement on the ordering because different economic theories imply different orderings. Meanwhile, an example of a long run identifying assumption could be that nominal shocks have no effects on real output. The arguments for

imposing certain restrictions are usually based on economic theory, and depending on the theory, different long run restrictions have been proposed. This paper will not follow the approach of imposing long run restrictions in order to achieve identification of the shocks. Instead restrictions will be imposed on the contemporaneous effects of shocks.

Model and Data Set

This paper employs a VAR approach of which the main characteristic is a relatively small number of variables describing the dynamic of the economy. Commonly, a macroeconomic VAR model to study monetary policy shocks will include at least four variables: output, price, money, and short-term interest rate. These correspond to the variables of a standard IS-LM model. The four-variable VAR model, however, often results in the price puzzle, which is a finding of a sustained price rise following an unanticipated monetary tightening represented by a positive innovation of the interest rate. Sims (1992) argued that the price puzzle is a result of omitting variables which the monetary authority observes to obtain information on future inflationary pressures, and suggested that it could be resolved by including the exchange rate and commodity price in the set of variables. Meanwhile, to formalise the credit view, Bernanke and Blinder (1988) suggest that the VAR model should also include the loan price and the loan quantity in the set of variables to model. Based on the above discussion, a complete VAR model should consist of the prices and quantities of the three markets (goods, money and credit market) as well as the exchange rate and the commodity price. However, due to the limitations of the data, the VAR model in this paper only has five variables. The vector of endogenous variables of the VAR model used in estimation is as follows:

$$V' = [v_t \quad p_t \quad r_t \quad cr_t \quad x_t] \quad (1)$$

where v is the level of output, p is the price level, r is a short term interest rate, cr is credit, and x is the exchange rate. The monetary policy shock is identified through a standard Choleski-decomposition with the ordering of variables as in Equation 1. The ordering of endogenous variables in Equation 1 is fairly standard in the recent empirical literature of transmission of monetary policy shocks. This ordering is based on the assumption regarding the operation of monetary policy transmission mechanisms. The underlying assumption is that policy shocks have no contemporaneous impact on output and prices, but may affect credit and the exchange rate immediately. However, the policy interest rate does not respond to contemporaneous changes in credit and the exchange rate. Specifically, output (v) is placed before all other variables means that the other variables can affect v only with lags. Meanwhile, price (p) is placed before the interest rate (r), which implies that r can affect p with lags. The ordering also allows contemporaneous changes in r to influence cr and x .

For each country, the VAR model is estimated by using quarterly data over the period 1980-2003. In certain countries, due to the limitation of the data, the slightly shorter data periods have been used in the estimation. The main sources of data are the International Financial Statistics of International Monetary Fund (IMF) and World Development Indicators 2004 of World Bank. Specifically, the quarterly data for price (p), measured by Consumer Price Index, CPI (base year 2000); interest rate (r), measured by lending rate; credit (cr), measured by domestic credit; and the exchange rate (x), measured by nominal effective exchange rate (for France, Italy, the Netherlands, and Spain, the exchange rate has been measured by real effective exchange rate), were collected from Financial Statistics. This study uses the lending rate as the monetary policy rate as this is the only short term interest rate available for the all countries being studied over the whole sample period. Meanwhile, annual data for output (y) is measured by real Gross Domestic Product (GDP) were gathered from World Bank

Indicators. These annual data have been converted into quarterly data by using SPLINE methods in the EXPAND procedure provided by SAS/ETS (SAS/ETS User's Guide, 1993).

In this paper, there are 12 common-law countries and 12 civil-law countries in the sample (Appendix 1). The selection and the number of countries used for the study were determined solely based on the availability of the data. Meanwhile, the classification of the country's legal structure is based on La Porta *et al.* (1997) which found that the nature of the laws is a product of the legal tradition on which the civil codes of a country are based. This study will only focus on two legal structures, civil-law and common-law, due to the fact that these are the major legal frameworks in the world. In all estimations, the data are expressed in logs, and the estimation was carried out by using statistical software E-View. The lag lengths in all regressions were determined by using the Akaike Information Criteria (AIC) and Schwartz Information Criteria (SIC). Based on AIC and BIC, we find the most appropriate lag length is 4 quarters. Experimenting with longer lag lengths, especially lag 6 and lag 8, generally did not improve the results except in certain cases.

Theoretically, we expect that monetary policies will be more effective in civil-law countries compared with common-law countries. The prediction is based on the argument that civil-law countries have been found to be more bank-based while common-law countries are more market-based (see La Porta *et al.* 1997; Demirgüç-Kunt and Levine, 1999). In other words, the financial sector of civil-law countries is dominated by banking institutions and their capital markets are relatively small. This is contrast with the financial sector in common-law countries which have relatively large and deep capital markets. This implies that monetary policy shifts will have a greater effect on firms in civil-law countries which mostly depend on bank loans compared with firms in common-law countries which have better access to the credit market via stock and bond markets. With the small capital markets, firms in the civil-law countries find it relatively more difficult to find alternative sources of finance when there is a shortage of supply of bank loans due to the tight monetary policy. Meanwhile, in the common-law countries, with the existence of relatively larger stock and capital markets, the substitution of bank loans is relatively much easier. Therefore, firms in the common-law countries are expected to be less sensitive to monetary policy actions.

Findings

This section discusses the results of impulse response functions of output, investment and consumption for civil-law countries and common-law countries that were obtained from the first difference VAR model. Since the objective of this study is to examine the response of output to a shock in the interest rate, the focus will be on the impulse response functions and not on the coefficients of the VAR. The effectiveness of monetary policy in these two groups of countries is examined by comparing the magnitude and the speed of adjustment of output following a shock in interest rate. Since the impacts of a positive shock in interest rate on output are expected to be negative, the size of impact in this study is evaluated by looking at the maximum negative impact on output. Meanwhile, the speed of adjustment is evaluating by looking at the time for this negative impact to appear and the time taken for that impact to disappear. In this analysis, the size of shock is an increase of one standard-deviation change in the interest rate, and the response of output to this shock will be investigated over a period of 20 quarters. In each graph, the solid line indicates the impulse response function of output to a positive shock in the interest rate, and the dotted lines give a 90% confidence level of the impulse response. The responses of output to the shock in the interest rate for the civil-law countries are presented in Figure 1, whereas Figure 2 presents the impulse response functions for a similar shock in the case of common-law countries.

Figure 1 shows that in all civil-law countries, the initial impact of an increase in interest rate on output is negative. This is consistent with the earlier expectation that an increase in interest rate would negatively affect output. Graphs in Figure 1 show that the interest rate shock affects output after a lag. In most of the cases the negative impact on output can be observed after the second quarter except in Mexico, Netherlands and France. In Mexico and Netherlands, the negative impact can only be observed after third quarter whereas for France after fourth quarter. Figure 1 also shows, in many cases, the maximum negative impact of interest rate shock on output in civil-law countries will take place between quarter 5 to 7 except for France and Netherlands which is at quarter 8 and 9, respectively. The time taken for the output to reach the base line again after the negative impacts ranges from 9 to 20 quarters except for the Netherlands. In the Netherlands, the negative effect on output still can be observed even after quarter 20. In terms of magnitude, graphs in Figure 1 clearly show that the impact of interest rate shock on output is relatively large in Argentina, Chile and Peru. This is contrast with France, Netherlands, Philippines and Spain where the impact is almost negligible. Table 1 shows the values of the maximum negative impacts of impulse response functions of output in civil-law countries ranged from -0.000237 to -0.002548 (Refer to Figure 1).

As in the cases of civil-law countries, the graphs in Figure 2 show the interest rate shock in common-law countries affects output after a lag. However, the time taken for the effect to materialise is relatively longer. In Ireland, Pakistan, Singapore and United Kingdom the negative impact of interest rate shocks on output can be observed starting from the second quarter. The impact, however, takes a longer period to materialise in the case of Australia, Canada, and USA. In other countries (India, Malaysia, New Zealand, South Africa and Thailand), the initial impact of the interest rate shock is an increase in output. However, this positive impact is only temporary and started to decline in the third quarter in case of South Africa, and between the fifth and sixth quarters in the case of India, Malaysia, New Zealand and Thailand. After quarter 8, the responses of output in these countries turn negative except in the case of South Africa, where the positive response only disappears after quarter 6. Graphs in Figure 2 also show that the negative impact on output in common-law countries reaches its maximum values between quarter 5 and quarter 11. After this period, the impulse response functions gradually move to the base line, and subsequently the negative impacts on output disappear between quarter 10 and quarter 13. Table 1 shows the values of maximum negative impacts on output for common-law countries ranged from -0.000146 to -0.001299. Inspecting the graphs in Figure 2 closely, we also find that the impact of the interest rate shocks on output is stronger in Canada and Singapore but relatively smaller in Ireland (Refer to Figure 2).

By comparing the graphs in Figure 1 and Figure 2, we find that, in many cases, the response of output to an increase in the interest rate is relatively larger in civil-law countries than in common-law countries. The mean values of the maximum negative responses of output to the interest rate shock for civil-law countries and common-law countries as presented in Table 1 strongly support the earlier finding based on the graphs. From Table 1, the mean value of the maximum negative impacts for civil-law countries is higher than the mean value for common-law countries. The graphs in Figure 1 and Figure 2 also show that output in the civil-law countries responds more quickly to the change in the interest rate compared with output in the common-law countries. In most of the civil-law countries, the negative effect on output appears in the second quarter, while in most of the common-law countries, the negative impact only takes place after quarter 4.

This paper finds that none of the civil-law countries experienced a temporary increase in output due to the positive shock in the interest rate. Meanwhile, in common-law countries, the temporary increase in output can be observed in 5 out of 12 countries being studied. The temporary positive responses in these countries have delayed the negative impact of the interest rate on output. Summary statistics in Table 1 shows, for civil-law countries, the average time for the negative effects on output to appear is 2.33 quarters, whereas for common-law countries, the average period for the negative impact on output to take place is 5.08 quarters. Thus, the negative impacts of interest rate shock on output take slightly longer period to die out in common-law countries compared with civil-law countries. The average period for the negative impact on output in common-law countries to disappear is 12 quarters, which is slightly longer than civil-law countries (11.5 quarters).

Conclusion

This paper investigates whether there is a difference in the impact of monetary policy between two groups of countries, civil-law countries and common-law countries. Specifically, the paper investigates whether the effectiveness of monetary policy actions depends on the countries' financial structures, which in turn depend on their differences in legal origin.

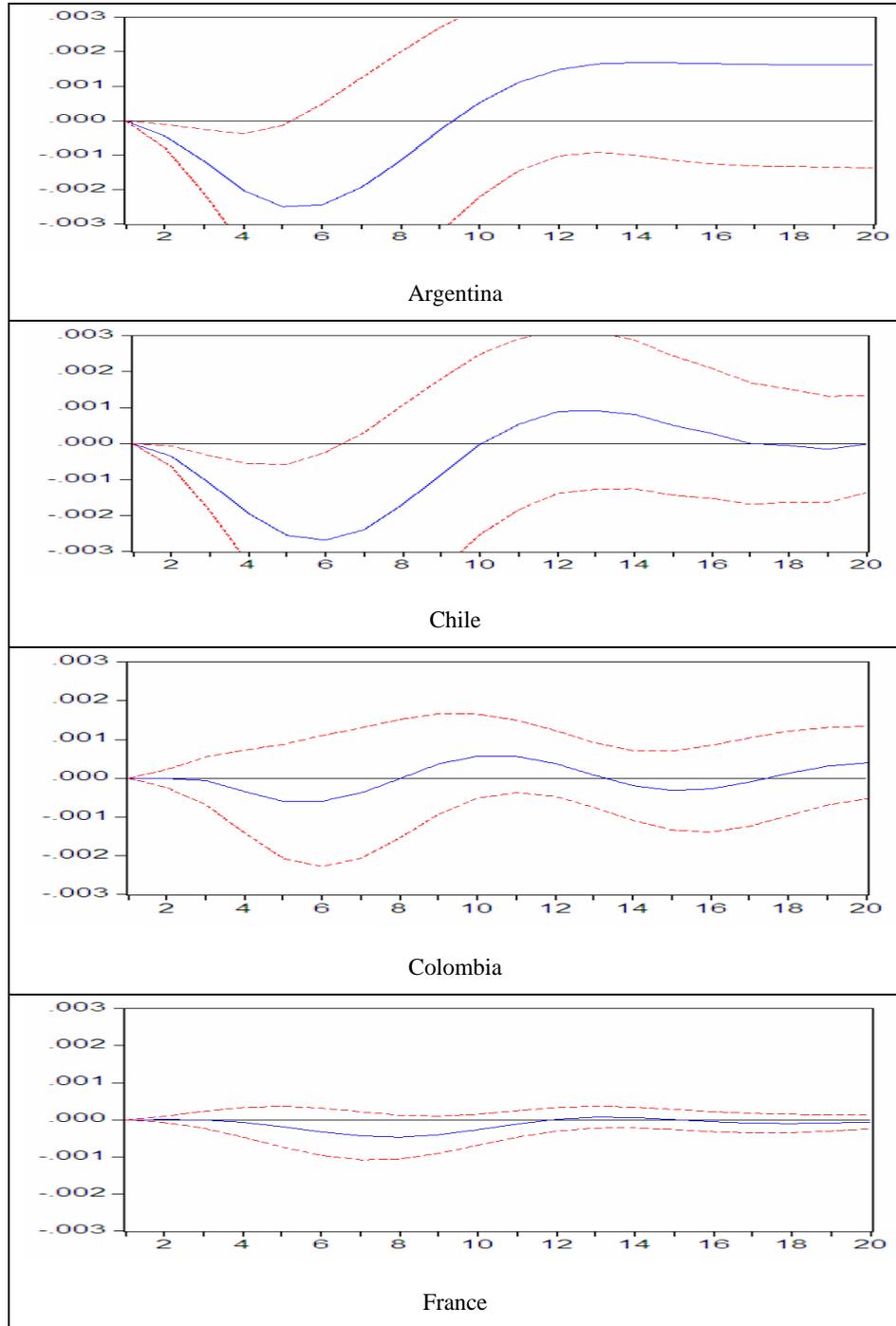
The major finding of this paper is the impact of an increase in the interest rate on output is relatively stronger and responds more quickly in civil-law countries compared with common-law countries. This finding may indicate that monetary policy is relatively more effective in influencing output in civil-law countries than in common-law countries. This finding is in line with the earlier prediction that monetary policy would be generally less effective in common-law countries than in civil-law countries. This prediction is based on the fact that financial structures in most of the common-law countries are more market-based. Thus, the firms in these countries have relatively better access to the capital markets. Consequently, the substitutes for bank loans are more available in the common-law countries, and this might reduce the contractionary effect of monetary policy of reduction in supply of credit. The finding from this study is consistent with the finding from Cecchetti (1999).

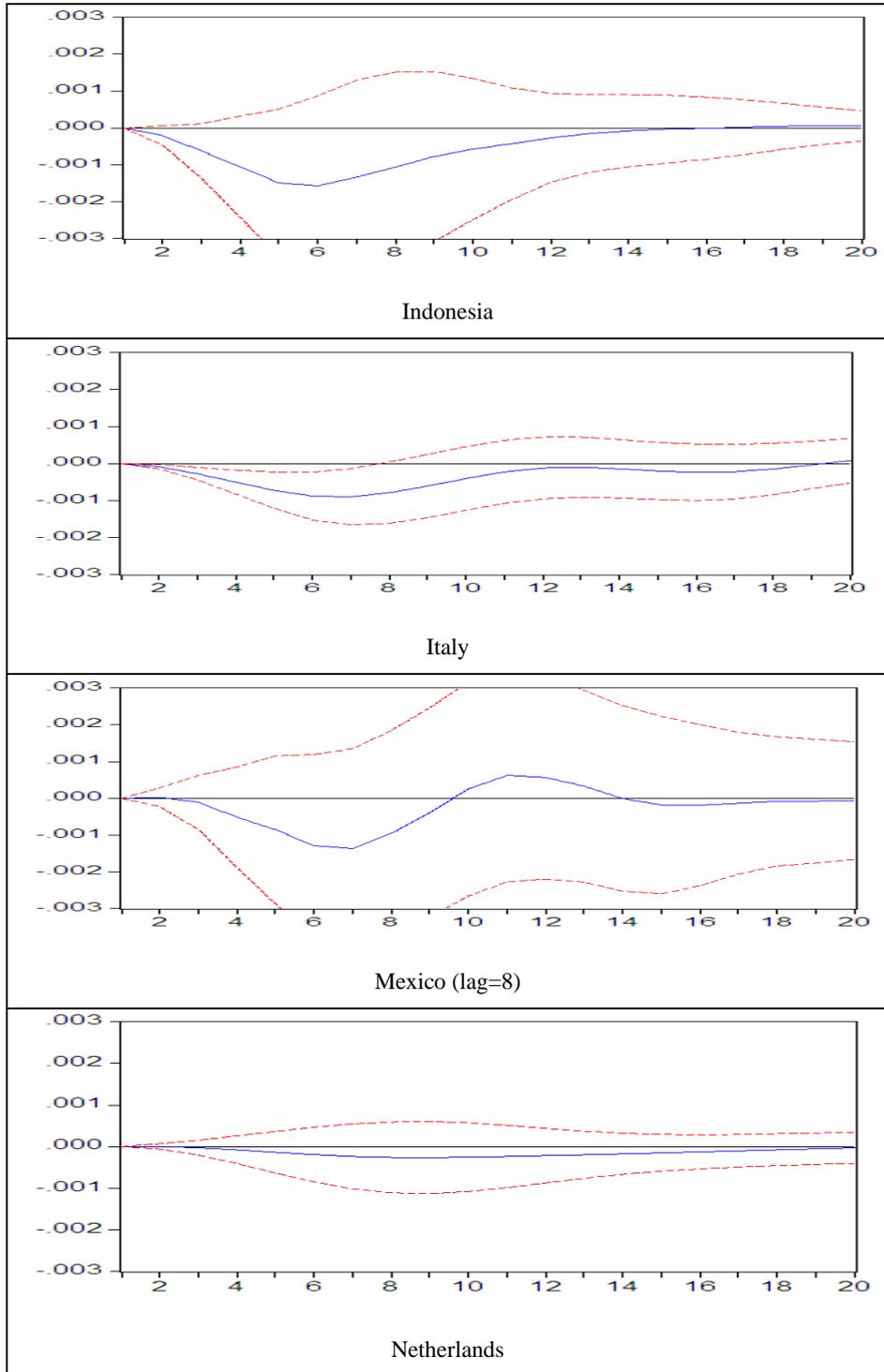
References:

- Allen, F., and Gale, D., (2001). *Comparative Financial Systems: A Survey*, Mimeo, Wharton School, University of Pennsylvania.
- Barran, F., Coudert, V., and Mojon, B., (1996). *The Transmission of Monetary Policy in European Countries*, *CEPII Document de travail no. 96-03*.
- Bernanke, B.S. and Blinder, A.S., (1988), *Credit, Money and Aggregate Demand*, *American Economic Review*, 78, 435-439.
- Britton, E., and Whitley, J., (1997). *Comparing the Monetary Transmission Mechanism in France, Germany and the United Kingdom: Some issues and Results*, *Bank of England Quarterly*.
- Cecchetti, S.G., (1999). *Legal Structure, Financial Structure, and the Monetary Policy Transmission Mechanism*, *Federal Reserve Bank of New York Economic Policy Review*, 9-28.

- Cecchetti, S.G., and Krause, S., (2001). Financial Structure, Macroeconomic Stability and Monetary Policy, *NBER Working Paper no. 8354*.
- Demirgüç-Kunt, A., and Levine, R., (1999). Bank-based and Market-based Financial Systems: Cross-Country Comparisons, *World Bank Working Paper no. 2143*.
- Dornbusch R., Favero, C. and Giavazzi, F., (1998). Immediate Challenges for the European Central Bank, *Economic Policy*, 28(April), 17-64.
- Gerlach, S. and Smets, F., (1995). The Monetary Transmission Mechanism: Evidence from the G-7 Countries, *CEPR Working Paper no. 1219*.
- La Porta, R., Lopez-de-Silanes, F., Shleifer, A. and Vishny, R.W., (1997). Legal Determinants of External Finance, *Journal of Finance*, 52, 1130-1150.
- La Porta, R., Lopez-de-Silanes, F., Shleifer, A. and Vishny, R.W., (1998). Law and Finance, *Journal of Political Economy*, 106, 1113-1155.
- Levine, R., (2002). Bank-Based or Market-Based Financial Systems: Which is Better? *Journal of Financial Intermediation*, 11, 394-428.
- Merryman, J.H., (1969). *The Civil Law Tradition: An Introduction to the Legal System of Western Europe and Latin America*. Stanford University Press.
- Phillips, P.C.B., (1998). Impulse Response and Forecast Error Variance Asymptotic in Nonstationary VARs, *Journal of Econometrics*, 83, 21-56.
- Ramaswamy, R. and Sløk, T., (1998). The Real Effects of Monetary Policy in the European Union: What are the Differences? *IMF Staff Papers*, 45, 374-399.
- Sims, C.A., (1992). Interpreting the Macroeconomic Time Series Facts: the Effects of Monetary Policy, *European Economic Review*, 36 (June), 975-1000.
- Tadesse, S., (2001). Financial Architecture and Economic Performance: International Evidence, *William Davidson Working Paper no. 449*.

Figure 1: Response of Output (y) to the Positive Shock in the Interest Rate (r) in Civil-Law Countries





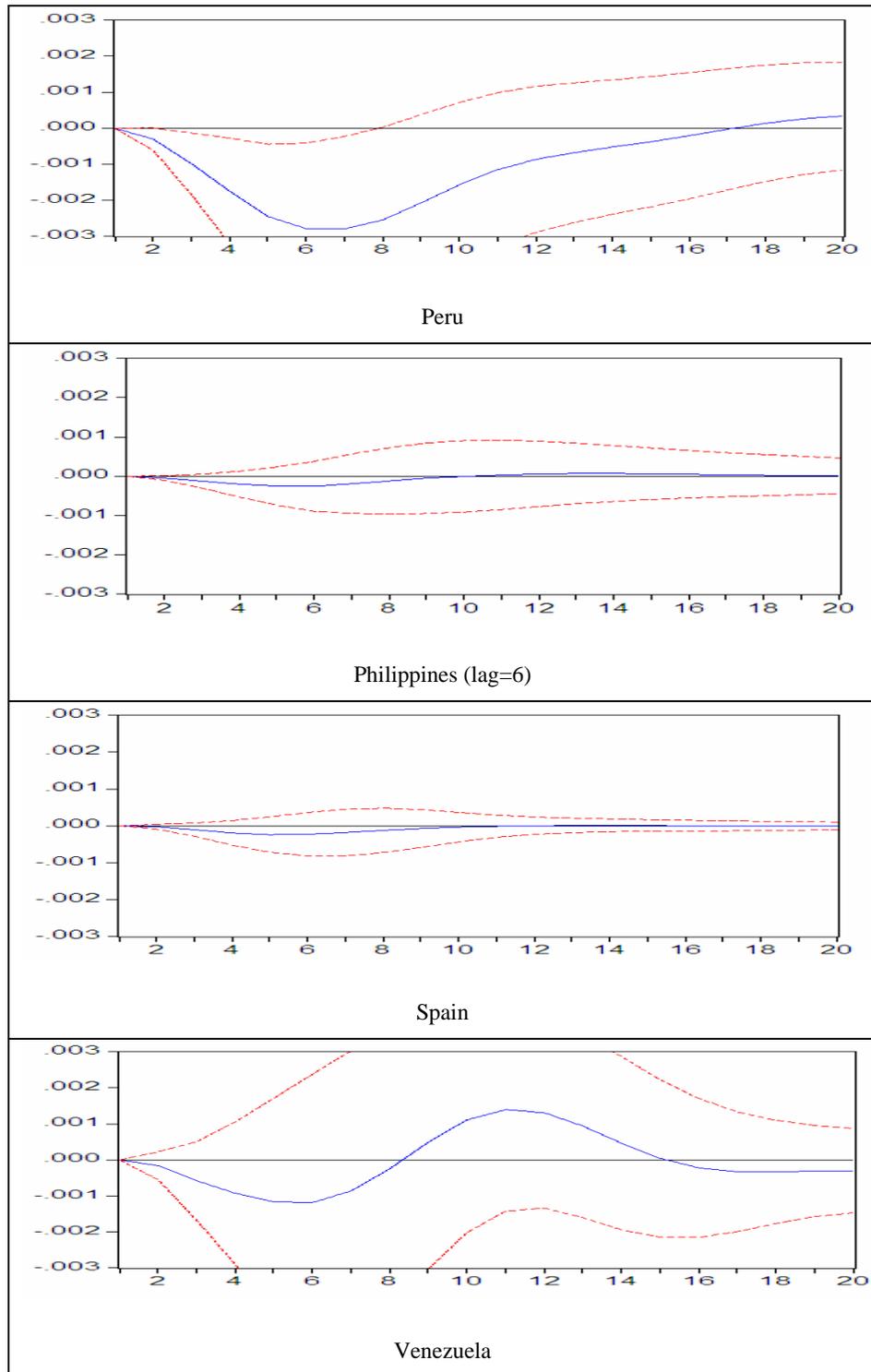
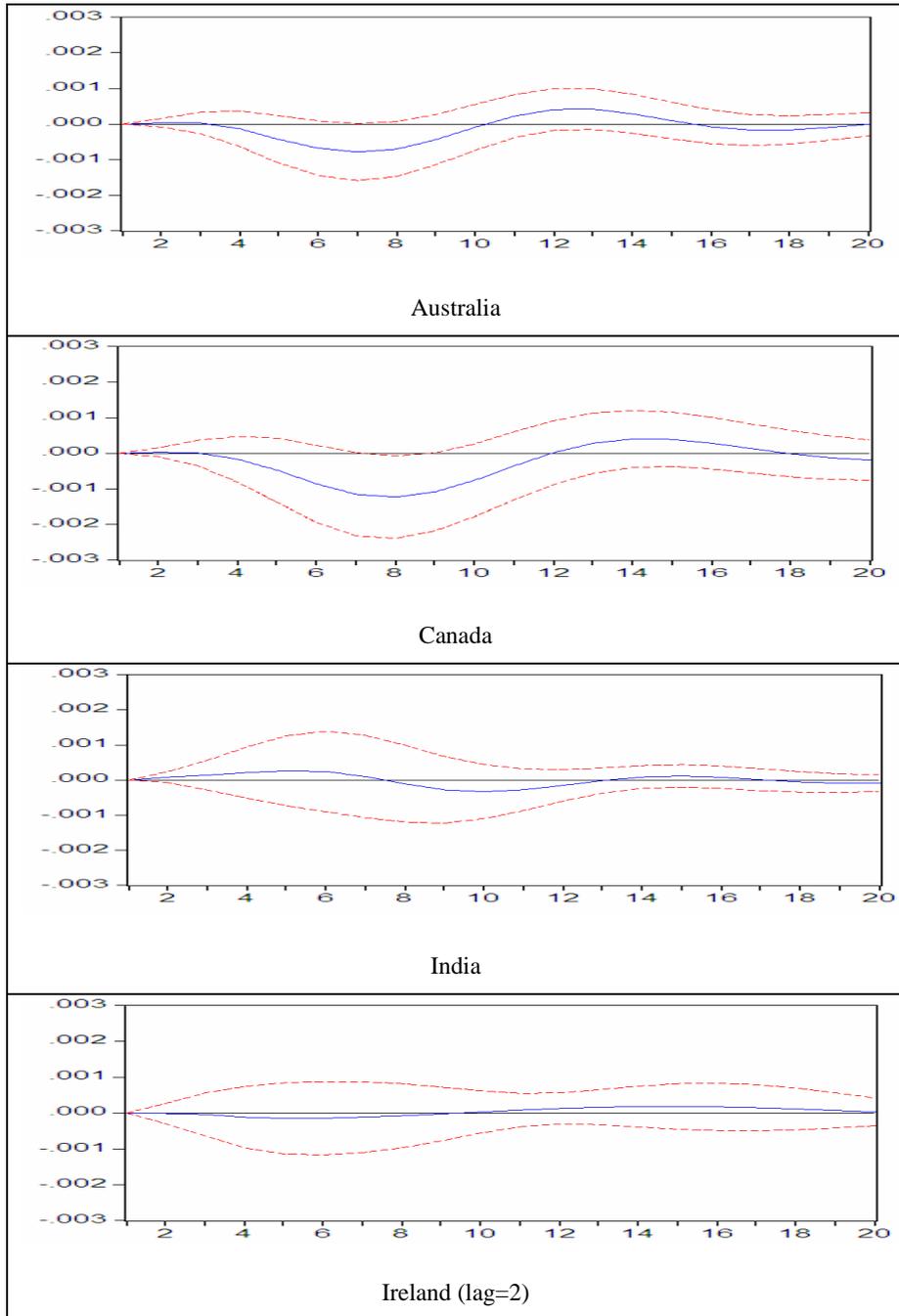
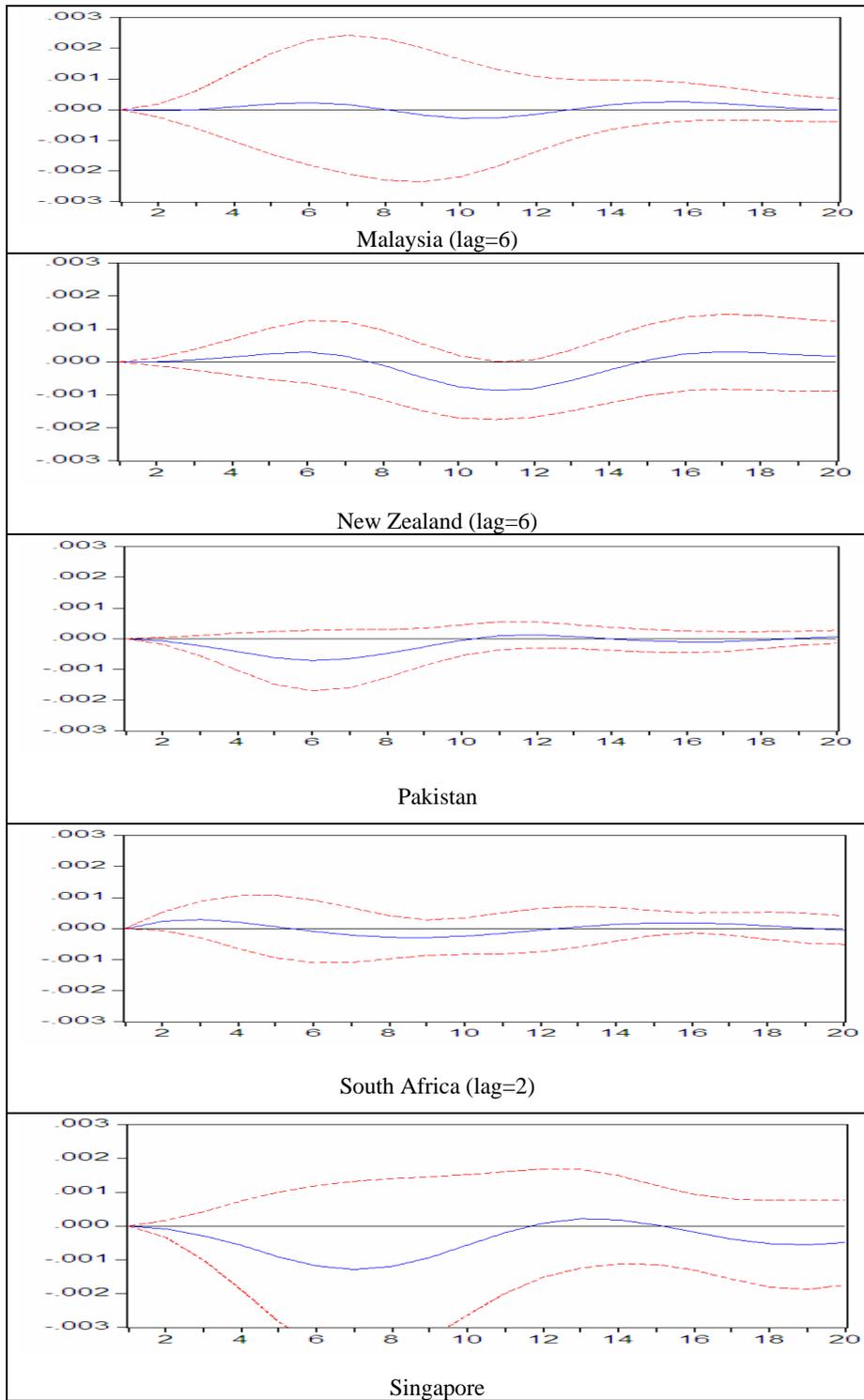


Figure 2: Response of Output (y) to the Positive Shock in the Interest Rate (r) in Common-Law Countries





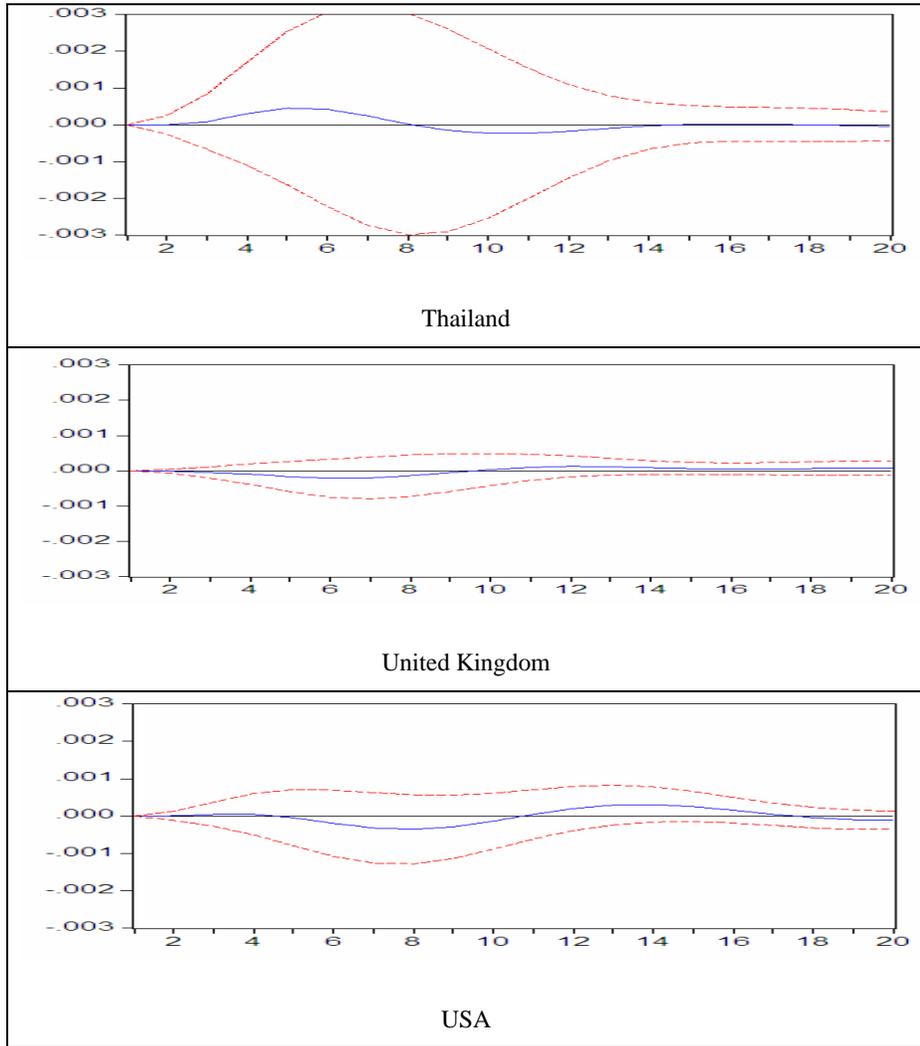


Table 1: Summary Statistics for Impulse Response Functions of Output to the Positive Shock in the Interest Rate

Responses of output (y) to interest rate shock				
	Maximum negative impact	Maximum positive impact	Time taken for negative impact to appear (in quarter)	Time taken for negative impact to disappear (in quarter)
A. Civil-law countries				
Argentina	-0.002496		2	9
Chile	-0.002548		2	10
Colombia	-0.000594		2	8
France	-0.000464		4	12
Indonesia	-0.001569		2	14
Italy	-0.000893		2	13
Mexico	-0.001362		3	10
Netherlands	-0.000260		3	>20
Peru	-0.002792		2	17
Philippines	-0.000255		2	7
Spain	-0.000237		2	10
Venezuela	-0.001180		2	8
<i>Average</i>	-0.0012292		2.33	11.5
B. Common-law countries				
Australia	-0.000781		4	10
Canada	-0.001299		4	12
India	-0.000329	0.000264	8	13
Ireland	-0.000146		2	9
Malaysia	-0.000279	0.000225	9	13
New Zealand	-0.000864	0.000306	8	15
Pakistan	-0.000709		2	11
South Africa	-0.000284	0.000296	6	13
Singapore	-0.001285		2	12
Thailand	-0.000228	0.000458	9	15
United Kingdom	-0.000210		2	10
USA	-0.000354		5	11
<i>Average</i>	-0.000569583		5.08	12.0

Appendix 1: List of Countries and Classification of Legal Structures

Civil-Law Countries	Data Period	Common-Law Countries	Data Period
Argentina	1985:1-2003:4	Australia	1980:1-2003:4
Chile	1980:1-2003:4	Canada	1980:1-2003:4
Colombia	1983:1-2003:4	India	1980:1-2003:4
France	1980:1-2003:4	Ireland	1980:1-2003:4
Indonesia	1980:1-2003:4	Malaysia	1980:1-2003:4
Italy	1982:1-2003:4	New Zealand	1982:1-2003:4
Mexico	1982:1-2003:4	Pakistan	1980:1-2003:4
Netherlands	1980:1-2003:4	South Africa	1980:1-2003:4
Peru	1982:1-2003:4	Singapore	1980:1-2003:4
Philippines	1980:1-2003:4	Thailand	1980:1-2003:4
Spain	1980:1-2003:4	United Kingdom	1980:1-2003:4
Venezuela	1984:1-2003:4	United States of America	1980:1-2003:4

In this paper, the classification whether a country legal structures is civil-law or common-law follow the classification used by La Porta *et al.* (1997, 1998), which in turn rely on Reynolds and Flores (1989). In general, legal families come from two broad traditions: common-law, which is English in origin, and civil-law, which is derives from Roman law. The common-law family includes the law of England and those laws modelled on English law. The common-law is formed by judges who have to resolve specific disputes. Precedents from judicial decisions shape common-law. The common-law, as well as civil-law tradition has spread around the world through a combination of conquest, imperialism, outright borrowing, and more subtle imitation. The resulting laws reflect both the influence of their families and the revisions specific to individual countries. Common law has spread to the British colonies, including the United States, Canada, Australia, India, and many other countries (La Porta *et al.* 1998). In this paper, there are 12 common-law countries being studied.

Meanwhile, the civil-law uses statutes and comprehensive codes as a primary means of ordering legal material, and relies heavily on legal scholars to ascertain and formulates its rules (Merryman, 1969). In general, there are three common families of civil-law tradition: French, German, and Scandinavian. This paper, however, only focus on French civil-law tradition due to the fact that French civil-law is the most widely distributed around the world. The French Commercial Code was written under Napoleon in 1807 and brought by his armies to Belgium, the Netherlands, and part of Poland, Italy, and Western regions of Germany. In the colonial era, France extended its legal influence to the Near East and Northern and Sub-Saharan Africa, Indochina, Oceania, and French Caribbean islands. French legal influence has been significant as well in Luxembourg, Portugal, Spain, some of Swiss cantons, and Italy (Glendon *et al.* 1994). When the Spanish and Portuguese empires in Latin America dissolved in the nineteenth century, it was mainly the French civil-law that the lawmakers of the new

nations looked to for inspiration (La Porta *et al.* 1998). There are 12 French civil-law countries being studied in this paper.

In most cases, classification of country legal structure that based on legal origin is uncontroversial. In a few cases, however, although the origin of laws is clear, laws have been amended over time to incorporate influences from other families. For example, Thailand's first laws were based on common-law but have received enormous French influence; and Italy is a French-civil-law country with some German influence. In these and several other cases, La Porta *et al.* (1998) have classified a country legal structure based on the origin of the initial law it adopted rather than on the revisions. In the case of United States (U.S) where every state has their own laws, La Porta *et al.* (1998) relied on Delaware law because a significant fraction of large U.S companies are incorporated in Delaware law. Meanwhile, in case of Canada, classification is based on Ontario laws, even though Quebec has a system based on French civil law. Thus, La Porta *et al.* (1998) have classified the legal structure of U.S and Canada as common-law.