Effect of Global Financial Crisis on International Trade in Developed and Developing Countries

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Abstract
The recent global crisis, as a big crash (Baldwin and Simon, 2009), has reduced foreign demand growth affecting total countries' exports. Given the importance of foreign trade to nations and the reality that recent crisis has affected international trade; we study the effects of the global financial crisis on trade relations between countries by using Ma and Cheng (2003) approach and by applying gravity model to both selected developed and developing countries during 1998-2010. Emprical results have approved negative effects of financial crisis on international trade in the countries under consideration. The result obtained is evident that such incidence seems to be significant to explain a sharp fall in the world exports.

Keywords: Financial Crisis, Exchange Rate, Foreign Trade, Gravity Model, Developed and Developing Countries.

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1. Introduction

The recent global financial crisis first began in the United State in 2007 and spread to international financial sectors around the world soon after. The main characteristic of this crisis was to reduce liquidity in the banking system. However, the crisis began through crisis in housing sector and eventually caused huge debt to the US banking system. The primary outcome of the U.S. housing crisis is a sharp drop in stock price index in the U.S. and other reputable international exchange.

Overall, the roots of the crisis include deregulation of financial markets, extreme orientation, development lending coupled with carelessness and lack of risk assessment tools for use by financial institutions and the lack of strong control by financial institutions in accompanied by United State economic policy especially after 11 September 2001 and banking crisis and house market.

The first wave of financial crisis affected almost all of European countries, Japan, China, Korea, India and Brazil, where they share more than 70 percent of the world GDP to themselves. In the process of the recent crisis, turmoil in financial markets in these countries and a sharp reduction in the stock price, in addition to the reduction in the value of stock and assets, greatly reduced the profitability of companies and caused bankruptcy of many companies and financial institutions.

Following the prevailing psychological situation of financial markets, uncertainty about the future purchasing power of the people and effective demand decreased (Zaier and Shafiee, 2009).

Different countries depending on the type of interactions and links with the world economy were affected by the recent financial crisis. Meanwhile, countries that collaborate to a single financial market and countries that enter trade integration have been affected by financial crises.

Due to economic globalization and integration of various markets, the recent global financial crisis has diffused to the countries in two ways. One way refers to financial globalization which increases linkage of banks, stock markets and insurance companies around the world. European countries such as Britain, France and Belgium were faced with the bankruptcy of some banks. Some East Asian countries (such as China and Hong Kong) were faced with financial crisis and a substantial drop in the stock price index. The second channel has focused on flows of exports and imports. Much higher degree of economic openness, greater

effectiveness decrease in import and export goods prices. Economies by a higher degree of financial integration and also by a higher degree of openness have been suffered from bad effects of the crisis. The recent financial crisis has affected developed and developing countries. Although the effects of the crisis on these two groups of countries are not the same, the lack of effective demand had reduced trade relations of all countries.

The objective of this paper is to examine the effect of financial crisis on export flows of the selected countries through specifying an augmented gravity model. To estimate the model, we obtain cross-section data from the selected developing countries such as Iran, India, Turkey, China and Indonesia. To compare our findings we apply data from developed countries such as the UK, Italy, Franc and the U.S. In the next step of the paper, Section 2 deals with the classification of all types of crises while Section 3 will review the relevant theoretical literature. Section 4 deals with recent financial crisis and its effect on trade relationship. Section 5 presents the trade model and defined the relevant variables. Section 6 estimates the model by using panel data regression to analyse the effect of financial crisis on exports of the selected countries. Section 7 provides concluding remarks and implication of our findings.

2. Financial Crisis in Various Categories

Financial crises have many different forms, including a banking crisis, balance of payments crises (currency) crisis and the debt crisis in the capital market through which their effects spread from one country to another and eventually will spread to the rest of the world.

The recent financial crisis, for instance, began in July 2007, when a lack of confidence in mortgage bonds guaranteed by the United States resulted in a liquidity crisis. The crisis became apparent in September 2008. If the stock market was in trouble around the world entered a period of high turbulence and a significant number of banks, insurance companies and mortgage borrowers were unable to carry out their activities (Korobeinikov, 2009).

Beginning with failures of large financial institutions in the United States, it became the global debt crisis and the recession that led to the bankruptcy of some banks in Europe and the U.S. leading to a drop in the stock market and then a sharp reduction in the market value of stocks and commodities around the world. These facts suggest

that the broad financial sector in industrialized economies, economic success is not sure and the global economic system is very sensitive (ibid). The fact is that the recent crisis is a combination of all types of crisis which happened periodically in the past including different causes and effects. The various categories of financial crises can be emerged in currency, banking and debt.

Sudden and unexpected fall in the value of the national currency causes the currency crisis. It is possible that financial crisis happens in all exchange rate regimes such as fixed and floating exchange rate regime and others. If there is a fixed exchange rate system, the crisis is causes reserves leading to a serious fall in the value of a national currency (Tayebi and Mohammadzadeh, 2010).

Currency shock in countries may increase the total foreign demand for domestic products in international markets. When a currency crisis happens, the exchange rate would not be more confident and should impose additional currency risk on importers and exporters and it is possible to reduce trading activities. Hence, result, it is likely that exchange rates have a negative impact on imports and exports in short term although the long-term equilibrium is gradually restored. Meanwhile, imports and exports may not return to the initial level because a currency crisis can cause permanent effects on imports and exports through the different channels; income path, substitution effect and wealth effect (Ma and Cheng, 2003).

The banking crisis occurs when banks lose either the power of ordinary duty of lending or a large numbers of banks face bankruptcy. Banks like other economic units are insolvent when their assets are less than their debt, or otherwise have negative equity. The main role of banks is intermediation between savers and lenders. Simply, banks and other financial institutions to collect household savings and give it to enterprises that want to investigate. If firms that take loans from banks become bankrupt, banks cannot return their deposit thus banks will go bankrupt.

In the situation of bankruptcy, those who deposit money in banks lose all their money or part of it unless there is a deposit insurance system in the country. Loss of households' savings causes households to reduce their consumption and transfer this crisis to the whole economy. However, banks that have not been affected by crisis refrain from providing new loans due to the conservative behavior (Tayebi and Mohammadzade, 2010).

Many Eastern European countries' analysts think that global debt crisis in 2008 resulted in a significant and persistent deficits since 1998. They also point that national balance sheet allocate major amount of commitments in foreign currency. It is widely believed that foreign currency debt increases the risk of financial crisis. Bordo et al (2010) have studied the effect of foreign debt crisis on economic growth in short-term and long-term effects on output in 45 countries effects during 1880-1913 and 1973-2003. Their results have indicated that a higher share of foreign currency debt to total debt ratio is more relevant to debt crisis.

3. Relevant Literature

Given the broad scope of financial crisis, many researches in economics and finance have been trying to identify its causes and effects which are partly mentioned in the following studies. Economists pay attention to the role played by trade in financial crises for two reasons. First, trade imbalance has been shown to be one of the important factors that trigger financial crises. As Krugman (1979) pointed out, a currency crisis is more likely to happen in an economy which does not have enough foreign reserves. Second, financial crises may be transmitted through trade linkages from an affected country to others despite the latter's relatively good fundamentals. As trade is the most obvious economic linkage between countries, much research has been devoted to this connection.

Zhu and Yang (2004) investigate the factors that contribute to financial crisis contagion. They synthesize the literature on contagion by combining all major explanatory variables into an adapted gravity model. Their finding is that financial crisis contagion is positively related to trade and financial linkages and negatively related to psychic distance between crisis-originating countries and crisis-affected countries, when macroeconomic fundamentals and institutional factors are controlled.

Eichengreen and Rose (1999) used a binary-probit model to test whether bilateral trade linkages transmitted crises between industrial countries between 1959 and 1993. They found that the probability of a financial crisis occurring in a country increased significantly if the country had high bilateral trade linkages with countries in crises. Glick and Rose (1999) conducted a similar

analysis with more countries between 1971 and 1997 and obtained a similar result. Forbes (2000) used company's stock market data to study the importance of trade in financial crises transmission and his result also showed that trade played an important role.

Other papers, however, have provided different answers to the problem. For instance, Taimur and Goldfajn (1998) thought that trade was unimportant in the East Asian Crisis because the direct bilateral trade volumes between these economies were very small. Masson (1998), analyzing the Mexican crisis and the Asian crisis, obtained similar results. All the papers that analyzed the relationship between trade and financial crises ignored the reverse question: how did financial crises affect international trade? The paper argues that the effects of financial crises on trade are a precondition for discussing whether generally trade transmits crises. If financial crises do not affect countries' imports and exports at all, how can financial crises are transmitted through the trade channel?

Global crisis causes a drop in demand for constructing services and materials affecting the demand for commodities. Moreover, many enterprises customers may go a rise in bankrupt and international trade also decrease drastically, resulting in a market decline in the demand for products and services, considerable variations in the exchange rate and inflation (Wan and Riding, 2008). Hence, global crisis causes decrese in world demand and it affects countries' trade and their economy. For example, financial crisis started in 2008, has been highly specific to the US financial developments, but economic and financial integration worldwide has supported the transmission of effects to other countries. Eventually, it seems that the other economies may be affected by the financial crisis even harder than the USA, the origin of the shock (Bátorová, 2012). Then economic links serve as a channel for transmission of shocks between countries (See Akin and Kose, 2008; He, Cheung and Chang, 2007).

Financial crises including currency crises, banking crises or both could affect trade. Reinhart (1999) pointed out that financial crises usually caused capital account reversal (sudden stop) and triggered an economic recession. The economic recession reduces not only domestic demand, but also total output and export capability. As a few works have focused on trade and crisis especially

the effect of crisis on international trade, this study investigates the effect of financial crisis on trade.

4. The Model

If a country and its trading partners faces financial crisis, both its exports and imports are affected simultaneously by internal and external shocks that are arising from such crisis since it causes currency fluctuations and disorganization in their business and financial affairs. In this study, we use Ma and Chang (2003) model that is based on the gravity model extracted initially from the Newton approach in order to estimate international trade flows.

The simplest case when there is no obstacle and no reward, bilateral trade flows can be considered as a direct function of the economic size of the two countries and the inverse function of geographic distance. According to the literature (Anderson, 1979 and Deardorff, 1998) a generalized form of the trade gravity model is defined as follows:

$$M_{ijk} = a_k Y_t^{\beta k} Y_t^{\gamma k} N_j^{\xi k} N_j^{\delta k} Y d_{ij}^{\mu k} U_{ijk} \quad (1)$$

where M_{ijk} is the exchange of goods or factor k from country i to country j, Y_i and Y_j are incomes of countries i and j, respectively N_i and N_j denote population of country i and population of country j and d_{ij} is geographical distance between countries i and j. U_{ijk} stands for error term of the stochastic equation. Crisis in both domestic and foreign economic territory is effective, so that the economy will fall and has negative effects on trade flows between the two countries. On the other hand, the financial crisis will transmit through trade and financial flows that would be involved with the domestic economy.

As discussed previously, the most prominent issue variable in this study is crisis. The crisis will affect countries' income and because of gravity model is to explore the rate of financial crisis in bilateral trade. Hence, the gravity model is appropriate such movement through direct and indirect effect of crisis on economies. The crisis will affect countries' income affect trade between countries.

Given Ricardian assumption that each country entirely specializes in the production of goods that are produced for each country considered a commodity, there are no tariffs and transport costs. A share of income, which is paid for country's i good, shows by b_i that is the same for all countries.

By applying cross-sectional analysis, which prices are constant in equilibrium quantities and selecting units so that all of them are the same. Therefore consumption in terms of quantity and value of commodity i in country j (= imports of commodity i to country j) will be:

$$M_{ij} = b_i Y_j \qquad (2)$$

where Y_j is income of countries J. Income should be equal to:

$$Y_i = b_i \left(\sum_j Y_j \right) \qquad (3)$$

By solving this equation for b_i and replacing this equation in the previous equation, we obtained:

$$M_{ij} = Y_i Y_j / \sum Y_j \qquad (4)$$

where equation (4) is the simplest version of the trade gravity model which can be by the generalized least squares method (Anderson, 1979). Thus the gravity model can be considered as follows:

$$T_{ij} = f(GDP_i \ GDPj, \ Dij) \qquad (5)$$

whereT_{ij} denotes trade flow (i) from country i to country j. GDPi and GDPj show economic size of exporter country (i) and importer country (j), respectively and Dij is the geographic distance between trading partners. This equation is considered as period multiplied and transfers to the logarithm of the linear mode for facilitating the estimation:

$$T_{ij} = C \frac{GDP_i \ .GPP_j}{D^2_{ij}} \qquad (6)$$

First, these models have been used for cross-country or multi-country time series data. This type of model estimation has been stipulated by many implicit and explicit limits on model estimation such as biased relation. This is because there are some omitted variables in such estimates or some of the variables are not considered actually. So the heterogeneity could not be considered between countries. In recent years in order to solve these problems, economists used group data estimating for estimating the gravity model. This method considers heterogeneity and individual effects of countries and time effects can be studied in the context of it. In the group data method, the explanatory power of the model and efficiency

increases (Deardorff, 1998).

Additionally, other factors such as land border could affect bilateral trade. In Ma and Chang (2003) model, crisis index has also been included as follows:

$$\text{Log}\left(\text{EX}_{ijt}\right) = \theta_1 X_{ijt} + \theta_2 FC_t + \varepsilon_{ijt} \qquad (7)$$

where EX_{ijt}, that exports goods from country i to country j at time t, stands for the dependent variable in the model. The explanatory variables X_{ijt} include a set of economic variables that affects X_{ijt}.

According to the gravity theory, X includes explanatory variables such as igdp (logarithm of importer GDP), egdp (logarithm of exporter GDP country), ipop (logarithm of importing country's population), epop (logarithm of exporting country's population), dis (logarithm of geographic distance between exporting and importing countries), edv (exporting country's exchange rate) and idv (importing country's exchange rate). In this study, the FCI[1] indicator is used to show crisis variable that seems to affect trade flows. A proxy for this variable is composed of 45 variables that have been calculated by Hatzius et al. (2010), in which its details have been indicated in Appendix.

4.1. Conceptual Discussion on Financial crisis Index

Kaminsky et al. (1998) found that crisis can be realized through evaluating several indexes and considering their abnormal behavior in periods before crisis. When these indicators are higher than their threshold values, they warn that crisis will occur within 24 months volatilities. Exports, real exchange rate, the ratio of money to gross international reserves, output and equity prices are considered to explain financial crisis. There are many ways to calculate the turbulence in financial markets. One of them is to identify interest rate variation. The financial turbulence could also be due to other dimensions like difference between risky assets' income (i.e. major corporate bonds) and the risk-free asset (such as U. S. treasury securities).

One of the striking aspects of the recent financial crisis was the risk of failure of financial institutions to fund their short-term debt such as re-purchase agreements. To overcome the problem of

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[1] Financial Conditions index

prediction error, it is necessary to avoid focusing on a single indicator. Thus, some economists have combined several different indicators to show financial market turbulence by a numerical indicator.

In this context, an index of financial condition information (FCI) is comprised of current financial variables in which, Ideally FCI should measure financial shocks (Watson et al, 2010).

There is another way to measure the financial crisis. For example, the spread interest rates by which we can measure default risk or the difference between the returns of a risky asset such as bonds and a risk-free bonds such as the U. S. treasury bonds. The substantial risk that was happened in the recent financial crisis includes the inability of financial institutions to secure investment to fund short-term liabilities, such as purchasing agreements. This type of risk is known as the liquidity risk.

To overcome potential problems, which rely on a range of variables, some economists have combined several variables to measure financial fluctuations. Financial conditions information (FCI) provides information on the future state of the economy based on the current situation.

Equity values, the shape of yield curve and credit risk measures are used as financial criteria of

future economic activities and are the components of FCI. Similarly, the price which will affect the wealth of households such as real estate and stock prices or the consumer's interest rate which will affect substitution relationship between current consumption and future consumption will be a common choice for FCI.

Hatzius et al. (2010) present a new and more complete index of financial conditions in order to overcome the limitations of previous measures. This index includes a vast domain of financial indexes that is larger than other variables and includes the relatively long period of time, from the early 1970s to the present.

5. Empirical Result

Table (1) and (2) report the results of estimating equation (1) using the panel data approach and econometric computer package Stata (12) for the selected developed and developing countries during 1998-2010. Developing countries in the sample are Iran, India, Turkey, China and Indonesia, and the UK, Italy, Franc and the US are in the group of developed countries. Data on GDP, population, from the World Bank database, export data related to the Uncomtrade site and exchange rate and distance are taken from Penn World Table Indo, respectively.

Table 1: Estimated result of gravity model indicating crisis effect on bilateral trade relations in developed countries

Variable (log)	Coefficient	t statistics	Pr > |t|
lgdpe	3.56	2.44	0.018
lgdpi	0.42	1.40	0.167
lpope	-1.05	-2.46	0.017
lpopi	-0.42	-2.30	0.026
ldis	-0.27	-2.45	0.018
fci	-0.11	-2.93	0.005
edv	-0.62	-1.65	0.106
idv	-0.89	-2.57	0.013
cons	7.35	1.20	0.234
	H chi2(8) = 17.70	Prob > chi2 = 0.000	
	F(6, 55) = 178.08	Prob > F = 0.000	
	LR chi2(6) = 1.09	Prob > chi2 = 0.1208	

Source: Authors

Table (1) shows the results of the selected developed countries. Firstly, all diagnostic tests confirm the consistent results through using the method of panel fixed effect approach, which has been applied to the developing countries. Except for GDP of importing country and variable edv (exporting country's exchange rate), other variables are statistically significant and the signs are expected

to be correct. Countries' population show negative coefficients. In fact, an increase in population means an increase in the domestic demand, market and countries that affects indirectly the export flows of two trading partners.

If this increased demand be met by domestic supply, exports will be reduced. Changes in GDPs of both partners affect directly and significantly

their bilateral trade. A percent in the exporter's GDP, would lead to an increase incountry i's exports by about 3.6 percent. A one percent in the importer j's GDP results in an increase in imports from partner j by about 0.40 percent.

The variable edv shows the rate of importer countries' currency depreciation against the dollar that has a negative impact on exports. However, its coefficient is not significant at the 5% significance level. Hence, it seems there is no significant effect of exchange rate movements on the developed nations' bilateral exports.

To concentrate on financial crisis, it is evident that any shock in financial markets is able to influence indirectly the export flow of developed country i to its partner j. As the results reported by Table 1, the coefficient of FCI is highly significant which shows a significant and negative effect of financial crisis on exports.

Table 2 summarizes the estimation results for bilateral exports of the selected developing countries. These results have also obtained by the panel data approach based on feasible GLS method.

Table 2: Estimated result of gravity model of indicating crisis effect on trade relations in developing countries (in FGLS methods)

Variable (log)	Coefficient	Pr > |Z|	Z statistics
Lgdpi	1.28	0.000	4.44
Lgdpe	3.33	0.000	8.97
Lpopi	-0.70	0.000	-4.41
Lpope	-0.11	0.485	-0.70
Ldis	-2.39e-16	0.000	-4.67
Fci	-0.2199	0.007	-1.91
Idv	-0.00007	0.003	-2.98
Edv	-0.00009	0.000	-3.91
Cons	-5.39	0.000	-6.97

Wald chi2(7) = 111.89   Prob > F = 0.000
LR chi2(7) = 65.95   Prob > chi2 = 0.000

Source: Authors

Except for the coefficient of the variable lpope, others are statistically significant at 5% significance level. The coefficient of idv shows exporters' devaluation exchange rate against the dollar had negative impact on bilateral trade. As expected, GDPs and geographical distance affect truly bilateral exports between trading partners in the sample. Additionally, the results show that the financial crisis has had a severe impact on trade flows of developing countries. Basically, the FCI coefficient for developing countries is -0.2199 and for developed countries is -0.11.

The result on financial crisis is more pronounced in developing countries than the developed countries. The reason is that the financial crisis will reduce global economic growth and from this channel affects deeply the developed economies. In the long-run, effects of financial crisis will be transferred from developed countries to developing ones.

The financial crisis happened in developed countries have affected developing countries' trade through a decline in export earnings (particularly exports of raw materials such as oil and other natural resources), economic growth, foreign investment, pressures on current balance and balance of payments, government spending and jobs opportunity destruction and capital markets crash.

6. Conclusion

The recent financial crisis has affected significantly different economies worldwide depending on degree of their linkages to the global economy movements. Countries that their financial markets are linked with each other have been affected directly (through financial markets) and otherwise countries have been affected indirectly (through trade) by the crisis. 2007- 2008 crisis has affected both developed and developing countries' trade flow through decreasing effective demand channel. The global economic crisis caused instability and reduced growth in both developing and developed countries so that the world economy entered a recession phase and reduced domestic and foreign demands, which implies the suspension of production, failure of economy and the unemployment of labor force and finally reduction in trade.

According to the results, obtained by this paper, crisis has had negative and significant effects trade flows of both selected on developed and developing countries. As reported by Table 1 and Table 2, the estimated values for both developing and developed economies were about 0.22 and 0.11, respectively. This means that crisis has much severe effects in developing countries. That is due to further weakness in the financial system and inadequate prudential regulation and financial

markets in these countries. Therefore, the effect of crisis on developing countries can be reduced by strengthening the financial system and prudential regulation of the financial market. The success being faced with the financial crisis depends on accurate detection of crisis and crisis consequences. Setting sustainable financial and commercial agreements to ensure these conditions are largely offset the negative effects of financial crisis.

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Appendix
FCI Measurement
The index made by Hatzius et al. (2010) includes 45 variables that (see Table 1 in Appendix) the FCI are determined by the level of interest rates, spread variables or asset prices. Hatzius et al. (2010) have added several price variables that were absent in other FCI includes car loan interest rates, mortgage rates and real estate prices. The FCI also contains a limited number of flow or quality variables and it has only an evaluated variable. During the recent financial developments, the importance of these

indicators seems to be much more. At the same time, price signals became potentially less reliable as markets seized up, non-price credit conditions tightened dramatically, and credit flows slowed abruptly. In an effort to capture these effects, Hatzius et al. (2010) added 15 financial stock and flow variables to the list, including 19 financial conditions indexes: a fresh look after the financial crisis representative sample of bank and non-bank credit variables in a variety of markets. They included seven survey indicators of financial conditions from the Fed's Senior Loan Officer Survey of bank lending conditions, the University of Michigan's survey covering consumer credit conditions, and the National Federation of Independent Business survey of small business credit conditions.

Table A-1: Components of Financial Index

	Description	T	\(R^2\) – Number of Factors					Λ1
			0	1	2	3	4	
	Interest rate							
1	10-Year Treasury Note Yield at Constant Maturity	2	0.15	0.32	0.40	0.43	0.46	-0.36
2	Fed-Funds /3monthTBill Spread	1	0.42	0.62	0.62	0.68	0.68	-.043
3	2YrT-note/3monthTbill Spread	1	0.03	0.27	0.34	0.48	0.76	0.25
4	10YrT-note/3monthTbill Spread	1	0.21	0.39	0.57	0.75	0.77	0.38
5	Baa/10yr T-note Spread	1	0.39	0.44	0.82	0.82	0.83	-0.06
6	High Yield / Baa Spread	1	0.73	0.92	0.95	0.95	0.95	-0.17
7	Auto finance company loan rate, new Car/Two-yr Treasury Spread	1	0.06	0.40	0.41	0.71	0.73	0.46
8	30-yr Conventional mortgage/ 10yrTBond Spread	1	0.23	0.34	0.42	0.54	0.66	-0.23
9	Jumbo/30yr Conventional Spread	1	0.60	0.94	0.94	0.96	0.96	-0.44
10	TED Spread (Using Constant Maturity T-bill)	1	0.32	0.72	0.76	0.75	0.84	-0.61
11	3-month LIBOR/OIS	1	0.71	0.97	0.97	0.97	0.98	-0.35
12	Bank rate on new Car Loans, 48-month/Two-year Treasury Spread	1	0.37	0.59	0.81	0.80	0.87	0.37
13	Bank rate on Personal Loans, 24-month/Two-year Treasury Spread	1	0.72	0.81	0.85	0.84	0.93	0.22
14	Citigroup Bond Yields: Credit {Corp} Spread/Finance	1	0.28	0.73	0.75	0.73	0.78	-0.65
15	Banks CDS Spread	1	0.88	0.99	0.99	0.99	0.99	-0.10
	Prices							
16	Real Broad Trade-Weighted Exchange Value of the US$	5	0.02	0.19	0.20	0.21	0.29	-0.24
17	Wilshire 5000	5	0.09	0.36	0.46	0.46	0.49	0.48
18	Financial Market Cap (percent of S&P 500)	5	0.04	0.34	0.41	0.41	0.40	0.38
19	Loan Performance National House Price Index (SA)	5	0.31	0.57	0.60	0.66	0.69	0.43
20	Price of Oil Relative to 2Year MA (PPI Crude Oil) Quantities	4	0.13	0.18	0.28	0.30	0.26	-0.18
21	Bank Credit: All Commercial Banks (SA)	5	0.28	0.32	0.33	0.53	0.59	0.02
22	Commercial Paper Outstanding: All Issuers (SA)	5	0.32	0.39	0.52	0.58	0.71	-0.17
23	Commercial Paper Issuance (Relative to 24Month MA)	1	0.79	0.97	0.98	0.98	0.99	-0.14
24	ABS Issuance (Relative to 24Month MA)	1	0.32	0.92	0.92	0.93	0.96	0.68
25	CMBS Issuance (Alert Database) (Relative to 24Month MA)	1	0.29	0.79	0.79	0.82	0.90	0.51
26	Money Stock: MZM {Zero Maturity} (SA)	5	0.13	0.30	0.49	0.55	0.52	0.21
27	State & local Government: Liability: Credit Market Instruments (SA)	5	0.04	0.13	0.22	0.54	0.55	0.21
28	Non-federal Sectors: Liability: Credit Market Debt Outstanding (SA)	5	0.47	0.50	0.50	0.88	0.88	0.06
29	Private Nonfinancial Debt, SA	5	0.52	0.54	0.55	0.85	0.85	0.02
30	Total Finance: Liabilities: Security RPs (NSA)	5	0.07	0.31	0.42	0.43	0.50	0.36

31	ABS Issuers: Assets; Consumer Credit (NSA)	5	0.16	0.67	0.73	0.75	0.85	0.30
32	ABS Issuers: Asset; Mortgages on 1-4 Family Structures (NSA)	5	0.22	0.73	0.76	0.76	0.88	0.62
33	ABS Issuers: Asset; Commercial Mortgages (NSA)	5	0.28	0.75	0.75	0.81	0.92	0.34
34	Total Non-monrtgage ABS Issuance (NSA) Relative to 8Q MA)	1	0.28	0.90	0.90	0.89	0.94	0.78
35	Broker Dealer Leverage	5	0.03	0.14	0.20	0.19	0.23	0.24
	Surveys							
36	NFIB:%Reporting that Credit Was Harder to Get Last Time, Net (SA)	1	0.42	0.69	0.69	0.84	0.84	-0.22
37	Michigan Survey: Interest Rates/Credit Reason Good/Bad Conditions for Buying Large HH Goods Spread	1	0.68	0.81	0.82	0.83	0.91	-0.29
38	Michigan Survey: Interest Rates/Credit Reason for Good/Bad Conditions for Buying Houses Spread	1	0.70	0.86	0.87	0.86	0.93	-0.35
39	Michigan Survey: Interest Rates/Credit Reason for Good Less Bad Conditions for Buying Autos Spread	1	0.56	0.75	0.80	0.82	0.89	-0.36
40	FRB Sr. Of. Banks Tightening C&I Loans to Large Firms (%)	1	0.45	0.81	0.83	0.83	0.88	-0.45
41	FRB Sr. Of.: Banks Tightening C&I Loans to Small Firms (%)	1	0.54	0.86	0.87	0.87	0.91	-0.48
42	FRB Sr. Of.: Banks Willingness to Lend to Consumers (%)	1	0.24	0.59	0.60	0.63	0.66	0.58
	2nd Moments							
43	Correlation of Returns on Equities and Treasuries	1	0.18	0.38	0.47	0.51	0.69	0.23
44	Idiosyncratic Bank Stock Volatility	1	0.20	0.52	0.71	0.72	0.77	-0.53
45	Monthly Average VIX	1	0.24	0.73	0.81	0.8	0.82	-0.64
	Average R20		0.29	0.41	0.49	0.57	0.65	

Source: Hatzius et al. (2010)