The Dynamics of Korean Stock Market in Response to Fiscal and Monetary Shocks Around Foreign Currency Crisis and Stock Market Opening

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재정정책과 통화정책의 충격에 대한 한국 주식시장의 동태적 반응에 관한 연구
- 외환위기와 주식시장 개방을 전후하여 -

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ABSTRACT

This paper investigates the effectiveness of economic policy on the stock market in Korea around foreign currency crisis and stock market opening. For this purpose, the paper applied SUR technique to a set of monthly data over the period 1982.01 to 2004.12. The study finds the following results. First, for the entire sample period, Korean stock market appears to have effectively incorporated all of the past information about fiscal policy moves. However, the paper finds an evidence that some of the past monetary actions have significant impacts upon current stock returns implying that the information about past monetary moves has been overlooked. Second, there is an evidence to suggest that, after foreign currency crisis, the macro economic policy actions may influence stock market in a different way. In particular, after foreign currency crisis, monetary policy influences stock market in a more delayed pattern while past fiscal policy moves are well incorporated into current stock returns. Third, before stock market opening to foreign investors, some of the past economic policy actions have significant effects on current stock returns. On the contrary, after stock market opening, none of the past macro economic information has significant impact upon current stock returns. The results imply that stock market opening may contribute to the active utilization of economic information for market participants in Korea.

본 연구는 거시경제정책이 주식시장에 미치는 영향을 외환위기 전후와 주식시장 개방 전후의 시기를 비교하여 분석하였다. 이를 위해 SUR(Seemingly Unrelated Regression) 계량분석기법을 이용, 1982년 1월부터 2004년 12월까지의 월별 자료를 분석하였다. 분석결과 다음과 같은 증거들을 발견하였다. 첫째, 전체 분석기간 동안 재정정책에 대한 정보들은 주식시장에 잘 반영되었으나 통화정책들은 그렇지 못하다는 것을 발견하였다. 둘째, 거시경제정책이 주식시장에 영향을 미치는 과정에서 외환위기가 변수로 작용한 것으로 나타났다. 구체적으로는, 외환위기 이전과 비교하여 재정정책의 충격들은 외환위기 이후 주식시장의 가격형성에 잘 반영되고 있으나 통화정책의 충격들이 주식시장에 미치는 영향은 즉각적이지 않고 시간이 걸리는 것으로 나타났다. 셋째, 주식시장 개방 이전에는 과거의 거시경제정보들이 주식시장의 가격형성에 영향을 주었으나 이러한 현상을 개방 이후에는 발견할 수 없었다. 이와 같은 결과는 주식시장 개방이 시장의 참가자들에게 적극적인 거시경제정보의 분석과 활용을 유도하는 방향으로 작용하였다는 것을 시사한다.

. Introduction

The policy effectiveness proposition of the new classical macroeconomics theory is well known. Under the hypothesis of rational expectations, past information should not influence the real output. Although most of the empirical research in this area has been primarily concerned with the real output, the attention to the stock market has rapidly increased in recent years (e.g., Darrat (1988), and Ali and Hasan(1993), Groenewold and Kang (1993), Kawakatsu and Morey (1999), Wu(2001)). Unfortunately, relatively little attention, if any, has been devoted to the effectiveness of economic policy on the stock market in Korea. Analysis of the Korean stock market is useful in terms of offering useful implications to the financial market policy of the Korean government. From the early 1980s, as a first step toward to the market mechanism based economy, Korean government has implemented wide ranges of deregulation policies to promote competition, liberalization and internationalization in the financial market, and the issue of deregulation still remains a high priority for government since the country experienced foreign currency crisis in late 1990's. Therefore, it will be appropriate to examine the effectiveness of economic policy on the stock market in Korea during this period.

The aim of this paper is to investigate the effectiveness of macro economic policy move on the stock market in Korea around foreign currency crisis and stock market opening. Unlike the previous works, this paper employs a seemingly unrelated regression (SUR) approach. A conventional approach is to use a two-step procedure where the movement in the macro-economic variable (i.e., money growth) is estimated by ordinary least squares (OLS) over the sample period, and the residuals from this regression are then used as the unexpected macro shocks. Then a test is performed to see whether stock price movements are influenced by the past economic information. This two-step OLS technique yields inefficient parameter estimates because not all of the information available in the description of the system of equations is used in the estimation procedure. An alternative source of inefficiency arises because two-step OLS estimation does not account for the fact that error terms across equations are likely to be correlated. The problem of loss of efficiency can be resolved by using a SUR method which allows for different error variances in each equation and for correlation of these errors across. Unlike the two-step OLS method, the SUR method used in this paper is a system method, where all the equations of the structural model are estimated by maximizing the likelihood function subject to restrictions on all the parameters in the model. The advantage of using the SUR method is that SUR estimates is unbiased as well as (asymptotically) efficient.[1] Another important aspect of this study is the use of monthly data for a period ranging from January 1982 to December 2004. During this period, the Korean stock market has experienced various government deregulation policies and, as a result of the government measures it has expanded very rapidly. For instance, the total market value of

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[1] For a general discussion of OLS estimation problem, see Oxley and McAleer (1993).

shares listed in the Korean Stock Exchange has increased by almost 2000% during this period.   The ratio of the market value to the nation's GNP increased to 53 % in 2004 from 5.9% in 1982.   Therefore, this period provides an interesting research case whether the remarkable financial market expansion and government deregulations experienced during this period was accompanied by a corresponding macro economic policy.   In addition, quarterly or a yearly period used in previous works is a fairly long time, particularly when one is analyzing the stock market where the stock prices are determined on a daily basis.   The extended quarterly period stock returns is more likely to be contaminated by the other information besides the shock in the macro policy while this contamination will be much less for the monthly data used in this paper.

The paper is organized as follows.   The following section provides a framework for testing the policy effectiveness.   Section 3 reports the results. Section 4 provides concluding remarks.

. Model and Methodology

By assuming that the stock return follows a fair game model, we describe one-period return to an asset, R_t at time t, as the sum of two components, the expected return at previous period t-1,

$E(R_t \mid \Phi_{t-1})$, and an unexpected or "abnormal" component, Z_t.

$$R_t = E(R_t \mid \Phi_{t-1}) + Z_t \tag{1}$$

where Φ_{t-1} denotes the set of information available to agents at time t-1.   If the stock return is independent of past information, it must be true that

$$E(Z_t \mid \Phi_{t-1}) = 0 \tag{2}$$

Equation (2) indicates that the excess return sequence $\{Z_t\}$ is a fair game with respect to the information sequence $\{\Phi_{t-1}\}$.   The set of information, Φ_{t-1}, available to investors at time t-1 would contain publicly available information. According to the rational expectation hypothesis, the abnormal return, Z_t, is independent of all past information since this news would already have been incorporated into share prices in past periods. To test the effectiveness of the economic policy on stock market, following regression equation is implemented.

$$R_t = E(R_t \mid \Phi_{t-1}) + \sum_{i=1}^{n} \beta_i E(M)_{t-i} + \sum_{i=0}^{n} \gamma_i UM_{t-i} + \sum_{i=1}^{n} \delta_i E(F)_{t-i} + \sum_{j=0}^{n} \omega_i UF_{t-i} + Z_t \tag{3}$$

Where n denotes the lags on the expected policy and the policy shock, E(M) and E(F) refer to the anticipated monetary policy and the anticipated fiscal policy

respectively, UM is the monetary shock, and UF denotes the fiscal shock.[2] The null hypothesis is then

$$H_0 : \quad _s=0, \quad _s=0, \quad _s=0, \quad _s=0, \quad s= 1, 2, …n$$

This formulation of the model highlights three problems which must be solved before testing can be implemented. First $E(R_t | \Phi_{t-1})$ must be measured; second expectation errors, UM and UF, must be estimated; finally, the variables to be used to forecast the economic policy should be specified.

As to the first problem, the measurement of the expected equilibrium return, two commonly used alternatives were experimented with. The first was to assume $E(R_t | \Phi_{t-1})$ to be a constant, C, and the second is to assume that $E(R_t | \Phi_{t-1})$ is equal to the sum of a risk premium, R_f, and a constant risk premium.[3] Since both approaches will produce the similar results in estimating regression coefficients, this study follows the first approach for simplicity. The second problem in the implementation of the testing procedure identified above, the generation of the expectation errors, was resolved by using an approach relatively common in the rational expectations literature, in which forecasting equations are estimated, the residuals from which are used to represent the expectation errors. The final question concerns the choice of variables in forecasting equations. Economic theory might not be very valuable in generating an accurate model of expectations formation because it is difficult on theoretical grounds to exclude any piece of information available at time t-1 as a useful predictor of a policy variable. The choice of the macro-economic variables in forecasting equation is generally made in an ad hoc way, determined as much by data availability as by theoretical considerations. The following two equations are constructed to forecast both monetary policy and fiscal policy.

Expectation of monetary policy is measured by;

$$M_t = \sum_{i=1}^{k} \sum_{s=1}^{m} \beta_{is} X_{i,t-s} + u_t \qquad (4)$$

Expectation of fiscal policy is measured by;

$$F_t = \sum_{i=1}^{k} \sum_{s=1}^{m} \Psi_{is} X_{i,t-s} + w_t \qquad (5)$$

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[2] On purely theoretical grounds (e.g., Tobin (1969)), both monetary and fiscal policy could have important effects on the returns of assets, including equities. In his well-known general equilibrium model of the financial sector, Tobin emphasized stock returns as an important link between the real and financial sides of an economy. In that model, Tobin demonstrated how stock returns may respond to changes in the monetary and fiscal policy variables of the model. Tobin's theoretical analysis, when consistently applied, suggests that both money growth and budget deficits may have significant impacts upon stock returns.

[3] For examples of the first approach see Fama (1976) and Sargent (1976); for the second see Sharpe (1983).

where X is the vector of variables employed for predicting monetary and fiscal policies, and u_t and w_t are white noises. The variables included in vector X are as the following.

F   : Fiscal policy (Deficit∕GDP)
M   : Monetary policy (M2)
U   : Unemployment rate,
CPI: Consumer price index
I   : Interest rate ,
EXCH : Exchange rate,

Since GDP is only available on quarterly basis, it is converted into monthly data by using SAS PROC EXPAND procedure.[4]
Every variable is expressed by the rate of change except fiscal policy and interest rate. Fiscal policy is measured by the difference of budget deficit ∕GDP, and interest rate is measured by the difference of government bond yield. Inflation is measured by the monthly growth rate in consumer price index. This particular list of variables was chosen because it contains readily available information which many researchers have cited as being of potential use in explaining policy responses (i.e., Glick and Hutchison (1990)). The lag distributions of policy forecasting model and return equation are restricted to 3 to conserve degrees of freedom.

. The Results

This study employs monthly data over the 1982-2004 period.   All variables are obtained from the Korea Bank Database.   The first step is to specify the variables in the monetary policy equation (4) and fiscal policy equation (5). Second step is to jointly estimate equation (3), (4), and (5), imposing the cross-equation rationality in equation (3). In simultaneous systems of equations, endogenous variables are determined jointly rather than sequentially. Estimation of the model involves joint estimation of equation (3), (4), and (5) as a system using SUR. Table 1 reports the results of SUR estimates. Approximately 26.88% of the variance in stock return is accounted for by the equation. With respect to monetary policy, the results of Table 1 reveal that t-1 and t-3 lagged anticipated and unanticipated monetary actions have significant effects on current stock returns. This finding for monetary policy indicates that participants in the Korean stock market have not incorporated all available information about monetary policy moves. In addition, the evidence of fiscal policy shows that both anticipated and unanticipated fiscal policy moves have insignificant impacts upon current stock returns. That is, given the publicity of the view that fiscal policy can influence stock returns, stock market

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[4] The EXPAND procedure fits cubic spline curves to the nonmissing values of variables to form continuous-time approximations of the input series. Output series are then generated from the spline approximations. See DeBoor (1981) for a detailed discussion of cubic spline interpolation.

participants appear to have incorporated all of the past information about fiscal policy moves. Nevertheless, information available about monetary actions seems to have been overlooked.

<Table 1> Response of Stock Market to the Monetary and Fiscal Policies for Entire Period (1982-2004)

Monetary Policy R^2/adj R^{22} =22.96%/20.00% DW=1.95			Fiscal Policy R^2/adj R^{22} =56.17%/54.57% DW=2.12			Stock Market Return R^2/adj R^{22} =36.28%/26.88% DW=1.95		
Variable	Estimates	P -value	Variable	Estimates	P -value	Variable	Estimates	P -value
C	2.3321	<.0001	C	-0.7332	0.2148	C	-148.9600	0.1245
M(t-1)	0.3573	0.0138	M(t-1)	-0.0079	0.8431	EM(t-1)	100.2343	0.0878
M(t-2)	-0.0264	0.7881	M(t-2)	-0.0332	0.3612	EM(t-2)	325.5573	0.2489
M(t-3)	0.0457	0.2493	M(t-3)	-0.0002	0.9895	EM(t-3)	-33.6013	0.0706
CPI(t-1)	-0.0088	0.9243	CPI(t-1)	-0.0042	0.8818	EF(t-1)	214.8627	0.2928
CPI(t-2)	-0.1338	0.2215	CPI(t-2)	0.0440	0.2678	EF(t-2)	32.3935	0.1001
CPI(t-3)	0.0717	0.2730	CPI(t-3)	-0.0106	0.4853	EF(t-3)	169.1684	0.2734
F(t-1)	0.0154	0.6751	F(t-1)	-0.9528	<.0001	UM	0.1169	0.8184
F(t-2)	0.0529	0.1329	F(t-2)	-0.7314	<.0001	UM(t-1)	33.9396	0.0069
F(t-3)	-0.0545	0.0801	F(t-3)	-0.1359	<.0001	UM(t-2)	-12.3729	0.4551
GDP(t-1)	-0.0202	0.9148	GDP(t-1)	0.0457	0.5088	UM(t-3)	5.4460	0.0533
GDP(t-2)	-0.1149	0.6427	GDP(t-2)	-0.0225	0.7473	UF	0.0297	0.9081
GDP(t-3)	0.0146	0.8924	GDP(t-3)	0.0508	0.3263	UF(t-1)	-308.5780	0.2436
I(t-1)	0.1234	0.0656	I(t-1)	-0.0355	0.2292	UF(t-2)	-143.1370	0.3187
I(t-2)	-0.1098	0.1893	I(t-2)	0.0223	0.3849	UF(t-3)	-5.3585	0.1254
I(t-3)	0.0206	0.6603	I(t-3)	-0.0036	0.7118			
U(t-1)	-1.5674	0.1735	U(t-1)	0.9403	0.2368			
U(t-2)	0.1015	0.0597	U(t-2)	-0.0325	0.2007			
U(t-3)	-0.0441	0.2584	U(t-3)	0.0018	0.8316			
EXCH(t-1)	-0.0014	<.0001	EXCH(t-1)	0.0008	0.1364			
EXCH(t-2)	0.0518	0.0513	EXCH(t-2)	-0.0179	0.1796			
EXCH(t-3)	-0.0480	0.0070	EXCH(t-3)	0.0079	0.2490			

EF : Anticipated Fiscal Policy, EM : Anticipated Monetary Policy

U   : Unemployment Rate, CPI: consumer price index

I   : Interest rate , GDP: Gross Domestic Product

EXCH : Exchange Rate, UM: Monetary shock, UF: Fiscal shock

To isolate the effect of foreign currency crisis in late 1990's, I apply the same

model to 1982~1997 period. The results are shown in Table 2. Table 2 shows that coefficient of t-3 lagged fiscal shock is significant, implying that fiscal shock has a lagged effect on current stock returns during this period. With respect to monetary policy, both anticipated and unanticipated lagged policy moves have insignificant effects on current stock returns. The result indicates that market participants have already incorporated monetary moves into current stock return whether the past moves are anticipated or not. Comparison of this result with the one in Table 1 shows that the implementation of macro economic policy influences stock market in a different way after foreign currency crisis. In particular, after foreign currency crisis, monetary policy seems to influence stock market in a more delayed manner while past fiscal policy moves appear to be well incorporated into current stock returns.[5]

Table 3 shows the effectiveness of economic policy before opening of stock market to foreign investors.[6] The results show that t-3 lagged anticipated monetary action and t-3 lagged fiscal shock have significant impacts upon current stock returns, implying that Korean stock market does not effectively reflect macro economic information before stock market opening. To investigate the effect of stock market opening, I apply the same model to 1992~2004 period. Table 4 shows that all of the lagged macro economic policy actions are not significant, suggesting that Korean stock market participants appear to have incorporated all available information about economic policy moves during this period. The results imply that stock market opening to foreign investors contributes to the active utilization of economic information for market participants in Korea. Consequently, it appears that a careful analysis of Korean macro policy actions could potentially increase the profit of a diligent investor before stock market opening. However, after stock market opening, such profitable opportunities gradually disappear as an increasing number of investors begin to utilize available information on macro policy.

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[5] To be a more rigorous test, the model should be applied to 1998-2004 sample period. However, due to a limited sample size and a relatively large number of dependent variables, the model does not fit the sample very well and produces negative adjusted R-squares for the monetary equation. In addition, the table shows that the results were mainly driven by the period of 1998-2004. This period witnessed excessively volatile asset markets due to a financial crisis. Consequently, one needs to interpret the conclusion of this paper with much caution.

[6] Although it is somewhat ambiguous to pinpoint the opening period, it is usually known that Korean government gradually opens the stock market to foreign investors since 1992. Foreign investors are allowed to invest up to 10% of shares issued by domestic firms from 1992.

<Table 2> Response of Stock Market to the Monetary and Fiscal Policies for the Period 1982-1997 (Before the Foreign Currency Crisis)

Monetary Policy R^2/adj R^{22} =14.63%/9.57% DW=1.93			Fiscal Policy R^2/adj R^{22} =65.72%/63.79% DW=2.12			Stock Market Return R^2/adj R^{22} =24.98%/6.91% DW=2.23		
Variable	Estimates	P -value	Variable	Estimates	P -value	Variable	Estimates	P -value
C	4.8974	0.0013	C	-4.0864	0.0425	C	18.5825	0.1654
M(t-1)	-0.3078	0.0113	M(t-1)	0.0841	0.5647	EM(t-1)	77.6973	0.1324
M(t-2)	-0.0509	0.4895	M(t-2)	0.1120	0.4072	EM(t-2)	7.2104	0.8063
M(t-3)	-0.0596	0.1433	M(t-3)	0.1538	0.1705	EM(t-3)	-94.5346	0.1151
CPI(t-1)	0.0276	0.7783	CPI(t-1)	0.9793	0.0004	EF(t-1)	-3.2963	0.6944
CPI(t-2)	-0.3338	0.0033	CPI(t-2)	0.7044	0.0086	EF(t-2)	21.9641	0.1370
CPI(t-3)	0.1069	0.1741	CPI(t-3)	-0.3186	0.2383	EF(t-3)	-19.4453	0.1284
F(t-1)	0.0664	0.1585	F(t-1)	-1.0713	<.0001	UM	-0.4186	0.4999
F(t-2)	0.1879	0.0008	F(t-2)	-0.8406	<.0001	UM(t-1)	-23.8127	0.1371
F(t-3)	0.0509	0.1343	F(t-3)	-0.1765	0.0207	UM(t-2)	-0.8024	0.9064
GDP(t-1)	0.1259	0.1378	GDP(t-1)	-0.1095	0.7211	UM(t-3)	1.5510	0.8457
GDP(t-2)	-0.1893	0.1026	GDP(t-2)	0.3788	0.3318	UF	-0.7267	0.0759
GDP(t-3)	0.1548	0.0992	GDP(t-3)	-0.4315	0.1781	UF(t-1)	8.9331	0.3484
I(t-1)	0.0000	0.9990	I(t-1)	0.1175	0.4702	UF(t-2)	-16.7607	0.1823
I(t-2)	-0.0454	0.4480	I(t-2)	-0.0392	0.7920	UF(t-3)	8.1674	0.0941
I(t-3)	0.0516	0.3121	I(t-3)	-0.1573	0.3278			
U(t-1)	2.8092	0.2814	U(t-1)	4.2133	0.6580			
U(t-2)	-0.0299	0.4268	U(t-2)	0.2417	0.1373			
U(t-3)	-0.0740	0.1998	U(t-3)	0.1532	0.4269			
EXCH(t-1)	-0.0031	0.0756	EXCH(t-1)	0.0037	0.1100			
EXCH(t-2)	0.0039	0.7651	EXCH(t-2)	-0.0432	0.6347			
EXCH(t-3)	0.0112	0.7213	EXCH(t-3)	-0.0388	0.7004			

EF : Anticipated Fiscal Policy, EM : Anticipated Monetary Policy

U : Unemployment Rate, CPI: consumer price index

I : Interest rate , GDP: Gross Domestic Product

EXCH : Exchange Rate, UM: Monetary shock, UF: Fiscal shock

<Table 3> Response of Stock Market to the Monetary and Fiscal Policies for the Period 1982-1991 (Before Stock Market Opening to Foreign Investors)

Monetary Policy R^2/adj R^{22} =22.11%/15.09% DW=2.09			Fiscal Policy R^2/adj R^{22} =58.32%/54.76% DW=2.01			Stock Market Return R^2/adj R^{22} =43.88%/21.25% DW=2.32		
Variable	Estimates	P -value	Variable	Estimates	P -value	Variable	Estimates	P -value
C	2.8241	0.1605	C	-0.7715	0.1658	C	-11.7011	0.8511
M(t-1)	-0.5802	<.0001	M(t-1)	0.3626	0.0012	EM(t-1)	-31.5491	0.3745
M(t-2)	-0.1118	0.3187	M(t-2)	0.1545	0.0758	EM(t-2)	73.2821	0.1722
M(t-3)	0.1339	0.0814	M(t-3)	-0.2199	0.0074	EM(t-3)	-33.2997	0.0178
CPI(t-1)	-0.1054	0.4364	CPI(t-1)	-0.1273	0.2852	EF(t-1)	37.9619	0.4655
CPI(t-2)	-0.2555	0.0448	CPI(t-2)	0.3562	0.0430	EF(t-2)	83.4515	0.2524
CPI(t-3)	0.0992	0.2161	CPI(t-3)	-0.1636	0.1179	EF(t-3)	40.8098	0.3707
F(t-1)	-0.1811	0.0504	F(t-1)	-0.5320	<.0001	UM	0.8229	0.2351
F(t-2)	-0.0119	0.8955	F(t-2)	-0.3467	0.0008	UM(t-1)	32.0280	0.2338
F(t-3)	-0.1240	0.0742	F(t-3)	0.1497	0.0392	UM(t-2)	15.4263	0.2866
GDP(t-1)	-0.2439	0.1897	GDP(t-1)	0.0543	0.7344	UM(t-3)	3.3893	0.3807
GDP(t-2)	0.0798	0.7335	GDP(t-2)	0.0977	0.7435	UF	0.0315	0.9600
GDP(t-3)	0.0727	0.6157	GDP(t-3)	-0.1206	0.4481	UF(t-1)	-13.7946	0.6482
I(t-1)	0.1142	0.2686	I(t-1)	0.0891	0.4113	UF(t-2)	-69.3019	0.2417
I(t-2)	0.2244	0.0616	I(t-2)	-0.3147	0.0733	UF(t-3)	11.0572	0.0164
I(t-3)	-0.0485	0.4996	I(t-3)	0.1290	0.1847			
U(t-1)	-8.2734	0.3253	U(t-1)	1.8468	0.5069			
U(t-2)	-0.0711	0.2040	U(t-2)	0.0174	0.8648			
U(t-3)	-0.1024	0.2326	U(t-3)	0.1012	0.3018			
EXCH(t-1)	0.0009	0.7017	EXCH(t-1)	0.0000	0.9493			
EXCH(t-2)	0.0053	0.8504	EXCH(t-2)	-0.0257	0.5880			
EXCH(t-3)	-0.0134	0.7949	EXCH(t-3)	-0.0066	0.8938			

EF : Anticipated Fiscal Policy, EM : Anticipated Monetary Policy

U : Unemployment Rate, CPI: consumer price index

I : Interest rate , GDP: Gross Domestic Product

EXCH : Exchange Rate, UM: Monetary shock, UF: Fiscal shock

<Table 4> Response of Stock Market to the Monetary and Fiscal Policies for the Period 1992-2004 (After Stock Market Opening to Foreign Investors)

Monetary Policy R^2/adj R^{22} =8.36%/7.56% DW=2.23			Fiscal Policy R^2/adj R^{22} =50.59%/47.11% DW=2.21			Stock Market Return R^2/adj R^{22} =54.8%/46.67% DW=1.89		
Variable	Estimates	P -value	Variable	Estimates	P -value	Variable	Estimates	P -value
C	2.1055	<.0001	C	-2.1299	0.0113	C	1.7468	0.0912
M(t-1)	0.1102	0.3418	M(t-1)	-0.2969	0.1810	EM(t-1)	26.1773	0.1304
M(t-2)	0.0629	0.3678	M(t-2)	0.5791	0.0024	EM(t-2)	-56.0390	0.1267
M(t-3)	-0.0667	0.1034	M(t-3)	0.3521	0.0029	EM(t-3)	28. 5273	0.1433
CPI(t-1)	0.1632	0.3978	CPI(t-1)	-0.1319	0.4111	EF(t-1)	33.8216	0.1386
CPI(t-2)	-0.0012	0.9914	CPI(t-2)	0.0920	0.6262	EF(t-2)	-24.4240	0.1723
CPI(t-3)	0.0247	0.2275	CPI(t-3)	-0.0494	0.6940	EF(t-3)	-13.1470	0.1641
F(t-1)	0.0134	0.6756	F(t-1)	-0.9199	<.0001	UM	0.0318	0.7120
F(t-2)	0.0639	0.0442	F(t-2)	-0.3944	<.0001	UM(t-1)	-6.9864	0.2985
F(t-3)	0.0092	0.2836	F(t-3)	-0.0371	0.3483	UM(t-2)	26.4613	0.1565
GDP(t-1)	-0.3031	0.0744	GDP(t-1)	0.3390	0.0453	UM(t-3)	-23.4147	0.1131
GDP(t-2)	0.1726	0.1219	GDP(t-2)	-0.3649	0.0449	UF	-0.0163	0.5916
GDP(t-3)	-0.0792	0.1002	GDP(t-3)	0.2851	0.0519	UF(t-1)	-30.2516	0.1380
I(t-1)	0.1187	0.1398	I(t-1)	-0.0923	0.1634	UF(t-2)	38.3380	0.1467
I(t-2)	-0.0153	0.7595	I(t-2)	0.0805	0.3271	UF(t-3)	-5.4397	0.1690
I(t-3)	0.0134	0.1535	I(t-3)	-0.0447	0.4262			
U(t-1)	-3.0759	0.4563	U(t-1)	2.7468	0.4190			
U(t-2)	-0.0024	0.9155	U(t-2)	-0.0146	0.5556			
U(t-3)	0.0048	0.2293	U(t-3)	-0.0156	0.5003			
EXCH(t-1)	-0.0009	0.0201	EXCH(t-1)	0.0012	0.0526			
EXCH(t-2)	0.0109	0.2254	EXCH(t-2)	-0.0115	0.1396			
EXCH(t-3)	0.0022	0.2769	EXCH(t-3)	0.0036	0.5411			

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. Conclusion

This paper investigates the effectiveness of economic policy on the stock market in Korea around foreign currency crisis and stock market opening. For this purpose, the paper applied SUR technique to a set of monthly data over the period 1982.01 to 2004.12. The model was particularly designed to take into the problems of simultaneous equation bias in the test of policy effectiveness. The study finds the following results.

First, for the entire sample period, Korean stock market appears to have effectively incorporated all of the past information about fiscal policy moves. However, the paper finds an evidence that some of the past monetary actions have significant impacts upon current stock returns implying that the information about past monetary moves has been overlooked. Second, there is an evidence to suggest that, after foreign currency crisis, the macro economic policy actions may influence stock market in a different way. In particular, after foreign currency crisis, monetary policy influences stock market in a more delayed pattern while past fiscal policy moves are well incorporated into current stock return. Third, before stock market opening to foreign investors, some of the past economic policy actions have significant effects on current stock returns. On the contrary, after stock market opening, none of the past macro economic information has a significant effect on current stock returns. The results imply that stock market opening may contribute to the active utilization of economic information for market participants in Korea. Consequently, it appears that a careful analysis of Korean macro policy actions could potentially increase the profit of a diligent investor before stock market opening. However, after stock market opening, such profitable opportunities gradually disappear as an increasing number of investors begin to utilize available information on macro policy. It is also possible, one might argue, that, in the face of structural changes like foreign currency crisis, the success of any model over the sample period does not guarantee that the same model will continue to perform well outside the sample period. Therefore, a model for considering this structural change might be needed. Exploring this issue is on our agenda for future research.

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