The impact of macroeconomic indicators on Vietnamese stock prices

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Abstract

Purpose – The purpose of this paper is to investigate the effects of macroeconomic indicators (the interest rate and the industrial production) on Vietnamese stock prices. The paper examines how US macroeconomic indicators affect Vietnamese stock prices.

Design/methodology/approach – The authors use monthly time series data covering the period from January 2001 to April 2008. The methodology introduced by Nasseh and Strauss and Canova and de Nicolo to investigate the linkage between stock prices and macroeconomic indicators.

Findings – This paper provides the first empirical evidence that there are statistically significant associations among the domestic production sector, money markets, and stock prices in Viet Nam. Another novel finding is that the US macroeconomic fundamentals significantly affect Vietnamese stock prices. Finally, the results show that the influence of the US real sector is stronger than that of the money market.

Originality/value – Since prior research has focused on developed economies, the authors strongly believe that this paper provides a novel contribution to the existing literature as the authors are the first to examine this issue in Viet Nam.

Keywords Macroeconomics, Viet Nam, Stock prices, Emerging markets, Developing countries

Paper type Research paper

1. Introduction

There are longstanding academic studies that offer evidence that macroeconomic indicators affect stock prices. To date, however, there is limited research on how these indicators affect emerging stock markets.

Fama (1981) found a significant relationship between macroeconomic indicators and stock prices. Following his study, a number of empirical studies explored this topic to understand the fundamentals of this association in one country or in a selected group of countries. In the last two decades, because of the globalization trend, a number of researchers – such as Canova and de Nicolo (1995), Dickinson (2000) and Nasseh and Strauss (2000) – investigated the international effects of macroeconomic indicators on stock prices. Most of these studies were done in the USA and European countries.

In a recent published paper, Kyereboah-Coleman and Agyire-Tettey (2008) examined the effect of macroeconomic variables on Ghana Stock Exchange. They found that macroeconomic indicators such as lending rates and the inflation rate affect on stock market performance. Their results suggested that macroeconomic indicators should be considered for investors in developing economies. This motivates us to

examine the degree to which this conclusion is applicable to another emerging stock market in Viet Nam.

Our study contributes to the literature by investigating this issue in an emerging Asian economy – Viet Nam. In particular, we have two research questions:

RQ1. Whether Vietnamese macroeconomic factors have significant influence on domestic stock prices by focusing on the effects of real production indicators and the money market.

RQ2. Whether international "US" macroeconomic factors affect domestic "Viet Nam" stock prices.

Yet, we are aware that no study – to date – attempts to address these issues.

The reminder of this paper is organized as follows: Section 2 reviews the literature. Section 3 presents the data and the research methodology. Section 4 presents the empirical results. Section 5 concludes and provides lines for further research.

2. Prior research
2.1 Domestic indicators: interest rate
Stock prices have been investigated for their relation to domestic macroeconomic indicators that are represented by interest rates, the industrial production index, and the inflation.

In theory, the relationship between stock prices and the interest rate is controlled by investors in portfolios of bonds and stocks (Apergis and Eleftheriou, 2002). With higher interest rates, investors prefer bond as this implies that stock prices will decrease. On the contrary, a decrease in interest rates leads to an increase in stock prices. This negative relationship has been found by Gjerde and Sættem (1999), Wongbangpo and Sharma (2002), Paul and Mallik (2003), Nasseh and Strauss (2004), McMillan (2005), Puah and Jayaraman (2007) and Reilly *et al.* (2007).

On the other hand, a positive relationship was found in Lobo (2002), Apergis and Eleftheriou (2002), Erdem *et al.* (2005) and Bohl *et al.* (2007). Lobo (2002) explained that the main factor affecting stock market volatility is the change in FED's disclosure policy. When FED raises more (less) interest rates than expected, it is considered bad (good) news to stock market. Both have a positive effect, but the bad news has a stronger impact on market volatility. A similar phenomenon has been found in studies of developing markets, for instance, the Istanbul Stock Market (Erdem *et al.*, 2005). Bohl *et al.* (2007) suggested that the positive relationship relies on the heteroskedasticity in interest rates and stock returns. The covariance between interest rates and stock return is positive when shock creates great volatility in stock market. In addition, Apergis and Eleftheriou (2002) found a positive correlation between interest rates and stock prices in Athens Stock Exchange. However, this correlation is statistically insignificant because stock prices depend on inflation rather than the nominal interest rate movement, despite the close relationship between inflation and nominal interest rates.

To sum up, the theory suggests a negative association between stock prices and interest rates. However, empirical results are mixed.

Another group of studies investigated the co-movement between stock prices and interest rates in stock markets in a group of countries. For example, Wongbangpo and Sharma (2002) examined the effects of long-term interest rates (LTR) on stock prices in five Asian countries. A negative long-term linkage between stock prices and interest

rates was observed in the Philippines, Singapore, and Thailand. However, a positive relation was detected in Indonesia and Malaysia. The causes for these differences should be attributed to the inflation rate and money supply in each country. The high rate of inflation in Indonesia and the Philippines influences the long-term negative relation between stock prices and the money supply, while the money growth in Malaysia, Singapore and Thailand reduces the positive effect on their stock markets.

2.2 Domestic indicators: industrial production
McMillan (2005) tested how stock prices respond to the volatility of industrial production and short-term interest rates (STR) in the US market. He found a significant positive association between the industrial production and stock prices. The main reason for this is the fact that an increase in the real sector raises the future cash flow that creates a higher future dividend. With the expectation of higher dividend, investors have been always willing to buy shares at higher prices. Studying a group of six European countries, Nasseh and Strauss (2000) found similar results. Their study shows a positive relationship between stock prices and the industrial production on the domestic markets in these countries. Besides, Gjerde and Sættem (1999) found that the industrial production has a significantly positive impact on stock prices but it is a delayed impact on the Norwegian market. The authors put forward two main reasons for this situation. The first reason is related to the difference between scales of industrial companies. In the Norwegian Stock Market, the majority are the large exported companies whereas the industrial production index is calculated on the basis of a huge number of small industrial ones. As a result, the stock market index, influenced by the development of exported corporations, seems to show the future of the exported sector rather the effect of the overall industrial sector. The second reason is the simultaneous effect on stock prices by the industrial production and interest rates. The authors argued that compared with the industrial production, interest rates have a closer linkage with stock returns. The increase in interest rates will encourage the rise in the industrial sector and also will have negative impact on stock prices. As a weaker factor than interest rates, the industrial production then will generate a delayed positive response of stock prices.

2.3 Domestic indicators: consumer prices index
Another important variable that is used in prior research to examine the relationship between macroeconomic indicators and stock prices is the consumer prices index (CPI). Prior studies argued that CPI is such a specific factor representing several macroeconomic variables such as the discount rate, inflation, and the goods market (Nasseh and Strauss, 2000; Wongbangpo and Sharma, 2002; Gunasekarage *et al.*, 2004). Gunasekarage *et al.* (2004) found that CPI as proxy for inflation has significant influence on Sri Lanka's Stock Market. Wongbangpo and Sharma (2002) investigated how goods market affects the stock markets in five Asian countries, namely Indonesia, Malaysia, Philippines, Singapore, and Thailand. To check the effect of the goods market, the authors used gross national production and CPI. A negative effect has been found between CPI and stock prices. This can be explained as the results of the higher risk of future profitability. The increase in prices level will increase the cost of production, which in turn would reduce future profitability. However, there are still some other opinions that higher prices level can also have a positive effect on stock

prices due to the use of equities itself as equipment for hedging inflation. In Nasseh and Strauss (2000) paper, CPI is used as representative for discount rate because stock prices are always listed at nominal prices. Their research suggested that CPI is priced neutrality or its explanation as stock prices will react by one percentage for each percentile change in CPI.

2.4 International effects

This section considers the effects of international macroeconomic factors on domestic stock exchange, as Canova and de Nicolo (1995) suggested that news of international variables can contain information on the future trend of home variables.

Dickinson (2000) investigated the effect of the international interaction among stock prices in a group of countries, including the USA and three European countries: the UK, France, and Germany. His study offered evidence of short run interaction among international stock indices in European markets but they are no longer in long-term. For example, UK and French stock indices individually are influenced by the USA and German markets in short run. Only German index has a long run relationship with US index with a positive signal.

Nasseh and Strauss (2000) also found such international effects in a research of a group of six European countries. In their research, the economies of other five countries are considered domestic, with German variables selected to be used as proxy for foreign effects. This selection comes up with the strong economic linkage between German and the other continental economies. These authors also analyzed the effect of international interest rates, stock indices, and the industrial production on stock prices. They found that: first, German short-term rates significantly affect stock prices in France, Italy, The Netherlands, Switzerland, and the UK. LTR show the negative influence on stock prices. It is consistent with their role as a discount factor, whereas STR are found to be positively related to stock prices as they are the proxy for other real macroeconomic indicators. Second, German stock prices are significantly related to domestic stock prices movements in four out of other five countries. In the other five economies, the reaction of all domestic stock prices to the volatility of German stock prices is not significantly different. This leads to the conclusion that European stock markets are highly integrated with German economy. Finally, the increase in German industrial production will significantly impact stock prices movement in four out of five other economies.

To sum up, prior empirical studies suggest that there is a relationship between macroeconomic factors and stock prices. The signals of these associations are different depending on the effects of one or the interaction among macroeconomic variables on stock prices in reality. Moreover, prior research also showed that both international and domestic factors can affect stock prices by employing a variety of cointegrating techniques.

This topic has been well studied in such mature stock markets as those of the USA or Europe. There are also some studies on Asian stock markets as mentioned above. However, so far no efforts have been made to investigate the linkage between macroeconomic indicators and stock prices in the Vietnamese stock market, which is considered a new and emerging market. Therefore, we aim to contribute to the existing literature by analyzing the linkage between Vietnamese economy indicators and stock prices.

Based on the above discussions, the following research hypotheses are set:

H1. There is a relationship between stock prices and the domestic industrial production in Vietnamese stock market.

H2. There is a relationship between stock prices and domestic interest rates in Vietnamese stock market.

H3. There is a relationship between Vietnamese stock prices and US stock prices.

The trading relationship between Viet Nam and the US started in December 2001 on a small scale of investment of US$200 millions (Ministry of Foreign Affair, 2008). Nowadays, Viet Nam is the one of the 30 biggest exporters to the USA whereas, the USA has become the country that has the eighth biggest direct investment in Viet Nam (Ministry of Plan and Investment, 2008). Moreover, as reported in the end of 2007, investment of the USA in Viet Nam mainly centers on the industrial sector, which comprises approximately 90 percent of the total, with only about 10 percent in the service sector including financial service (Ministry of Plan and Investment, 2008). Based on these facts, we examine the simultaneous effects of international factors on Vietnamese stock market and the following research hypothesis is as follows:

H4. US real production activity has stronger effects on Vietnamese stock prices than US's money market.

3. Research method
3.1 Data
The Vietnamese stock market was established in July 2000. Therefore, our study focuses on the available data from January 2001 to April 2008. We also collect monthly data for US market for the same period. Hence, to test the above hypotheses, stock prices and macroeconomics data for 88 months are collected for USA and Viet Nam. The industrial production, the S&P 500 commodities and the CPI indicators are collected from datastream. The industrial production is defined as "an economic report that measures changes in output for the industrial sector of the economy" (Wikipedia, 2008). It used in the current paper as proxies for real current domestic macroeconomic indicators. The S&P 500 commodities represent for the US stock prices. When stock prices are in nominal term, CPI-"a measure of inflation" (Wikipedia, 2008), is used as discount rate for stock innovations. Vietnamese stock prices (VN Index) are collected from Ho Chi Minh Stock Exchange (www.hsx.vn/). US Treasury bill three-month rates are used as proxy for US short-term rates. VN basic interest rates (issued by state bank) are used as proxies for Vietnamese short-term rates. Long-term government bond rates (ten years) are used as a measurement of LTR for each country. These rates are collected from sources of American Federal Reserve and State Bank of Viet Nam.

3.2 Methodology
Prior researchers apply several approaches to clarify the relationships between macroeconomic indicators and stock prices (Lamont, 2001 for a review). First approach is the multivariate vector autoregression modeling technique. The example of this method is in the paper of Gjerde and Sættem (1999), which used this model with a range of variables including international and domestic indicators such as the industrial

production, real sector variables, the foreign exchange rate, and the oil price. Second, Wongbangpo and Sharma (2002) and McMillan (2005) used the vector error correction model in their research with an aim to find out at least one long-term relationship between macroeconomic factors and stock price. Third, previous researchers built the regression model based on the characteristics of the data sample or purpose of research such as the research of Canova and de Nicolo (1995), Apergis and Eleftheriou (2002) and Nasseh and Strauss (2000).

We follow the methodology introduced by Nasseh and Strauss (2000) and Canova and de Nicolo (1995) to investigate the linkage between stock prices and macroeconomic indicators. To do so, we run two separate analyses. In the first one, domestic variables are examined; while in the second one, both domestic and international variables are examined.

3.3 Relationship between stock prices and domestic macroeconomic indicators
Nasseh and Strauss (2000) used a consumption-based model in which stock prices (p_t) is the sum of future expected discounted dividends, d_t or income y_t, at time t:

$$p_t = E_t \sum_{i=1}^{\infty} \beta^i \left[\frac{u'(c_{t+1})}{u'(c_t)} \right] d_{t+i} = E_t \sum_{i=1}^{\infty} \beta^i d_t = E_t \sum_{i=1}^{\infty} \beta^i (1 - \alpha\beta) y_t \tag{1}$$

where $u'(c_t)$ is the marginal utility of consumption and α is the marginal return on investment (Nasseh and Strauss, 2000). β^i is the constant discounted factor. Their model is an extension of Balvers *et al.* (1990) who difference both sides of equation (1), which removes the unit root or permanent component and then regresses stock returns on industrial production growth (one independent variable). Nasseh and Strauss (2000) use equation (1) to test whether a cointegrating equilibrium exists among stock prices and two independent variables: interest rates and industrial production.

3.4 Relationship between stock prices and international macroeconomic indicators
To examine this relationship, the study of Canova and de Nicolo (1995) considers the function of the domestic labor, technological shocks and the capital inputs in a group of four European countries: the UK, France, Germany, and Italy. Canova and de Nicolo (1995) used German interest rates, stock prices, and industrial production to test whether stock prices and international variables establish a cointegrating relationship. Their model predicts that innovations in foreign production affect the domestic production. Furthermore, because stock prices are a function of output from equation (1), the foreign production also is predicted to influence domestic stock prices.

Our study aims to use the same model with output including Vietnamese interest rates, the industrial production, and the CPI. To investigate the international effects, the US macroeconomics indicators such as interest rates, the industrial production and stock prices are used.

4. Empirical results
4.1 Pre-condition for data time series
We test our variables for a unit root using Dickey and Fuller (1979) test to check the degree to which all variables are non-stationary time series. The standard test, by Dickey and Fuller (1979) is based on the formula:

$$X_t = \beta_1 + \beta_2 X_{t-1} + y_t + \varepsilon_t \qquad (2)$$

where β and γ are the coefficients, X_t is an individual value of series X at time t, ε_t represents for disturbance.

Table I shows that most variables have t-statistic values higher than critical value at level of significance of 5 percent. Therefore, the null hypothesis for a unit root test is rejected. If each time series has a unit root:

> [...] thus integrated of the same order, the potential for co-movement between series exists, this means that their linear combination is stationary, suggesting the presence of a long run relationship amongst these variables (McMillan, 2005).

It means that all variables are non-stationary time series. However, Table I shows that the variable Ln(CPI) for Viet Nam has a unit root; therefore we exclude this variable from our analyses.

4.2 Multivariate regression analysis: stock prices and domestic macroeconomic indicators
This section aims to estimate cointegration between Vietnamese stock prices and domestic STR, LTR, the industrial production and the CPI. We examine the coefficient estimates on the following regression model:

$$SP_t = \beta_1 Ln(IP) + \beta_2 STR + \beta_3 LTR + \varepsilon_t \qquad (3)$$

where, Ln(IP) – natural log of the industrial production; STR – the short-term interest rates; LTR – the long-term interest rate.

Table II reports the coefficient estimate and the t-statistic of each macroeconomic indicator. It shows that there is a positive relationship between stock prices and the industrial production. The coefficient estimate on the industrial production variable is 0.371 and it is significant at the 10 percent level. This indicates that there is a positive relationship between the domestic industrial production and stock prices. This status is due to the fact that nearly 60 percent of Vietnamese listed companies are industrial ones. Hence, good news from the industrial sector should become a good signal for stock market. This result is also consistent with the findings in Gjerde and Sættem (1999) and McMillan (2005). Hence, *H1* is accepted.

Table II shows that STR have a significantly positive association (0.281; t-statistic $= 4.44$) while long-term ones have a significantly negative association with stock prices (-0.374; t-statistic $= -3.06$). The negative signal of LTR may indicate

Variable	USA	Viet Nam
Ln(SP)	-2.28^{***}	-3.34^{***}
STR	-1.34^{***}	3.06^{***}
LTR	-2.08^{***}	-2.43^{***}
Ln(IP)	0.15^{***}	-2.58^{***}
Ln(CPI)	1.47^{***}	-5.13

Notes: Significant at the *10, **5 and ***1 percent levels, respectively; Ln(SP) – natural log of share prices; Ln(IP) – natural log of industrial production; STR – short-term interest rate; LTR – long-term interest rate; Ln(CPI) – natural log of CPI
Source: Dickey-Fuller test

Table I.
Unit root test

that long-term bond and equity are two alternative choices for investors. For instance, increasing long-term bond rate 1 percent will decrease 0.37 percent in stock prices. On the contrary, there is a positive association between short-term rates and stock prices. This result is consistent with the findings in Apergis and Eleftheriou (2002), Erdem *et al.* (2005) and Bohl *et al.* (2007).

Table II confirms that there is a relationship between domestic interest rates and stock prices. However, signal of the relationship is not the same for short- and LTR. The positive effect of short-term rates does not conform to theory but it reflects the reality. The basic rate used as proxy for short-term rates is not too close with commercial interest rates in the market according to the requirement of the State Bank of Viet Nam that commercial rate must not be over 150 percent of basic rate (State Bank of Viet Nam, 2008). As a result, the basic rate actually becomes a reference rate in the economy. Hence, *H2* is accepted.

To sum up, Table II shows that the industrial production, which represents real macroeconomic indicators, has a positive and significant impact on Vietnamese stock prices. LTR and STR, representing the money market, have significant effects but these are not in the same direction. Therefore, the effects of real macroeconomic indicators seem to be clear and stronger than those of money market.

4.3 Stock prices and international macroeconomic indicators: linkage between domestic and international stock prices

We use the following regression model to examine the linkage between domestic and international stock prices:

$$SP_t = \beta_1 Ln(IP) + \beta_2 STR + \beta_3 LTR + \beta_4 USLn(SP) + \varepsilon_t \qquad (4)$$

where, Ln(IP) – natural log of the industrial production; STR – the short-term interest rate; LTR – the long-term interest rate; US Ln(SP) – the natural log of the US stock price.

Table III shows the relationship between stock prices with both domestic and US macroeconomic indicators. For the sake of conciseness, this analysis will focus on the last column for the coefficient estimate on US stock prices. Column 4 Table III shows that the coefficient estimate on US stock prices is positive with a value of 2.22 with Vietnamese stock prices and statistically significant at the 1 percent. This means that 1 percent increase in US stock market led to more than 2 percent increase in Vietnamese stock prices. This shows a close integration between US and Vietnamese

Variables	Ln(IP)	STR	LTR
Coefficient	0.371[*]	0.281[***]	−0.374[***]
t-statistic	1.73	4.44	−3.06
R^2	0.270		
Adjusted R^2	0.245		
F-value	10.52[***]		
Observations	89		

Table II.
Stock prices and domestic macroeconomic indicators

Notes: Significant at the [*]10, [**]5 and [***]1 percent levels, respectively; where, Ln(IP) – natural log of industrial production; STR – short-term interest rate; LTR – long-term interest rate (equation (3))

stock markets. This result is consistent with prior research (Dickinson, 2000; Nasseh and Strauss, 2000). Therefore, *H3* is accepted.

Comparing the results in Table II with those reported in Table III; we observe that some effects of domestic indicators on stock prices are changed. For example, Table II shows a significant negative effect of Vietnamese domestic LTR, while Table III shows insignificant coefficient for this indicator. This suggests that domestic linkage with stock prices can be weaker because of the impact of foreign macroeconomic indicators.

4.4 Domestic stock prices in response to the US interest rates and industrial production
In order to test *H4*, this section comprises two steps. In step 1, we examine the relationship between individual foreign "US" indicator (the interest rate and the industrial production) and stock prices. We use the following models:

- For the effect of the industrial production, we use:

$$SP_t = \beta_1 Ln(IP) + \beta_2 STR + \beta_3 LTR + \beta_4 USLn(IP) + \varepsilon_t \tag{5}$$

- For the effect of the interest rate, we use:

$$SP_t = \beta_1 Ln(IP) + \beta_2 STR + \beta_3 LTR + USSTR + \varepsilon_t \tag{6}$$

where, Ln(IP) – natural log of the industrial production; STR – the short-term interest rate; LTR – the long-term interest rate; US Ln(IP) – the log of the US industrial production; US STR – the US short-term rate.

In step 2, we use a regression analysis with both variables to examine the effect of both US variables on Vietnamese stock prices. We use the following regression models:

$$SP_t = \beta_1 Ln(IP) + \beta_2 USSTR + \beta_3 USLn(IP) + \varepsilon_t \tag{7}$$

where, Ln(IP) – the natural log of the industrial production; US STR – the US short-term rate; US Ln(IP) – the natural log of the US industrial production.

4.5 Step 1: Effect from individual US indicators
Table IV shows the effect of each domestic and international macroeconomic indicator on Vietnamese stock prices. Our coefficients of interest are US interest rates "US Ln(IP)" in Model 5 and the US industrial production "US STR" in Model 6. Table IV shows a strong positive relationship between the US industrial production and stock prices.

Variables	Ln(IP)	STR	LTR	US Ln(SP)
Coefficient	0.62***	0.203***	−0.17	2.22***
t-statistic	3.08	3.36	−1.48	4.33
R^2	0.404			
Adjusted R^2	0.375			
F-value	14.24***			
Observations	89			

Notes: Significant at the *10, **5 and ***1 percent levels, respectively; Ln(IP) – natural log of industrial production; STR – short-term interest rate; LTR – long-term interest rate; US Ln(SP) – log of US stock prices (equation (4))

Table III.
Stock prices, domestic and foreign macroeconomic indicators

	Model 5		Model 6	
Ln(IP)	−0.55***	(−3.10)	0.25	(1.39)
STR	0.027	(−0.52)	0.03	(0.57)
LTR	−0.27***	(−3.22)	−0.09	(−0.9)
US Ln(IP)	13.17***	(9.56)		
US STR			0.26***	(7.57)
R^2	0.65		0.569	
Adjusted R^2	0.634		0.549	
F-value	39.15***		27.82***	
Observations	89		89	

Table IV.
Stock prices, domestic and foreign macroeconomic indicators

Notes: Significant at the *10, **5 and ***1 percent levels, respectively; Ln(IP) – natural log of industrial production; STR – short-term interest rate; LTR – long-term interest rate; US Ln(IP) – log of the US industrial production; US STR – the US short-term rate; t-statistic values are in parenthesis (equations (5) and (6))

The coefficient estimate on the US production variable is 13.17 with a t-statistic value of 9.56. This means that 1 percent volatility in the US industrial production is reflected by 13.17 times in Vietnamese stock prices. The coefficient of the US short-term rate is also positive and statistically significant at the 1 percent level. However, this coefficient is much smaller compared with that of the US industrial production. These results suggest that the international real production activity has a stronger effect on Vietnamese stock prices than that of the money market.

4.6 Step 2: simultaneous effects of US variables
We include both US production and interest rates in one regression model to valid the above conclusion. Moreover, to focus on international factors, following Fama (1990), the domestic interest rate used as proxy for the future economic activity is ignored. Table V shows that both the US industrial sector and the money market have significant positive association with Vietnamese stock prices. However, the coefficient of US short-term interest rates is about 1 percent compared with the coefficient of the US industrial production. This is clear evidence supporting the hypothesis that the US real industrial activity has stronger influence on Vietnamese stock prices than that of the US money market. Thus, H4 is accepted.

Variables	Ln(IP)	US STR	US Ln(IP)
Coefficient	−0.50***	0.10*	9.64***
t-statistic	−2.10	1.79	3.63
R^2	0.621		
Adjusted R^2	0.608		
F-value	45.56***		
Observations	89		

Table V.
Stock prices, domestic and foreign macroeconomic indicators

Notes: Significant at the *10, **5 and ***1 percent levels, respectively; Ln(IP) – natural log of industrial production; US STR – US short-term rate; US Ln(IP) – natural log of US industrial production (equation (7))

5. Conclusions

We examined the impact of domestic and international macroeconomic indicators on Vietnamese stock prices. We found that the industrial production has a positive effect on Vietnamese stock prices. We also found that the long- and short-term interest rates are not affecting stock prices in the same direction. Finally, we found that the US real production activity has stronger effect on Vietnamese share prices that in comparison with the US money market.

A stock market is an interesting but risky channel of investment. Hence, investors always try to predict the trends of stock market to spot the abnormal benefits and avoid risks. By concerning with the relationship between macroeconomic indicators and stock market, investors might forecast how financial market changes if domestic indicators such as LTR, short-term interest rates, and industrial production indicators fluctuate. On the other hand, policymakers can base on the analysis of these correlations to formulate monetary policies in order to sufficiently and timely adjust Vietnamese stock market. Lastly, the current paper also concerns with the US economy that is in its present critical situation. Hence, both investors and policymakers can take into account the volatility of the US financial and industrial market to predict and have necessary preparation for its impacts on Vietnamese stock market.

Three caveats apply to our research. First, there is a shortage of Vietnamese data. For example, the basic interest rate issued by State Bank of Viet Nam is used as proxy for Vietnamese short-term rates. If there were sufficient data sources, open market operation rate should be used instead because of its characteristic as the closest rate to the market rate issued by financial institutions in Vietnamese fiscal market. Second, the time period of the study is quite short (from 2001 to 2008), as the Vietnamese stock exchange was established quite recently in July 2000. Third, in the Nasseh and Strauss (2000) model, one more variable, namely business survey of manufacturing orders, is used. Unfortunately, this variable is not available in Viet Nam. The current paper is the first to study the impact if macroeconomic indicators on Vietnamese stock prices. We believe that our research design could be extended in at least two ways. First, based on the above-mentioned limitations, future research could examine the extent to which the identified effects are valid for longer time period. Second, it would be interesting to introduce other macroeconomic indicators and examine the degree to which these indicators affect the Vietnamese stock prices.

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