Chapter II

Theoretical Background

A. Review of the Literature

1. Developed Market

Developed markets are those countries that are thought to be the most developed and therefore less risky. According to FTSE Group whose provide an economic and financial data, assigns the market status of countries as Developed, Advanced Emerging, Secondary Emerging or Frontier on the basis of their economic size, wealth, quality of markets, depth of markets, and breadth of markets. The Developed countries all have to meet criteria under the following categories:

1. They are high income economies (as measured by the World Bank GNI Per capita Rating, 2008)
2. Market and Regulatory Environment EMG:
    a. Formal stock market regulatory authorities actively monitor market (e.g., SEC, FSA, SFC)
    b. Fair and non-prejudicial treatment of minority shareholders
    c. Non or selective incidence of foreign ownership restrictions
    d. No objections or significant restrictions or penalties applied on the repatriation of capital
    e. Free and well-developed equity market
    f. Free and well-developed foreign exchange market
    g. Non or simple registration process for foreign investors

3. Custody and Settlement

    a. Settlement - Rare incidence of failed trades

    b. Custody-Sufficient competition to ensure high quality custodian services

    c. Clearing & settlement - T +3 or shorter, T+7 or shorter for Frontier

    d. Stock Lending is permitted

    e. Settlement - Free delivery available

    f. Custody - Omnibus account facilities available to international investors

4. Dealing Landscape

    a. Brokerage - Sufficient competition to ensure high quality broker services

    b. Liquidity - Sufficient broad market liquidity to support sizeable global investment

    c. Transaction costs - implicit and explicit costs to be reasonable and competitive

    d. Short sales permitted

    e. Off-exchange transactions permitted

    f. Efficient trading mechanism

    g. Transparency - market depth information / visibility and timely trade reporting process

5. Derivatives

    a. Developed derivatives markets.

6. Size of Market

    a. Market Capitalization

b. Total Number of Listed Companies (as at 31st Dec 2008).

2. Emerging Market

Emerging market is defined to the countries that have an economy with low to middle per capita income was coined by the World Bank's International Finance Corporation in the early 1980s refer to those low- and middle-income countries that adopt various liberalization measures aimed at reducing government control of their economies and opening their markets to foreign firms in such areas as trade and investment. Emerging markets are viewed as holding potentials for high growth, high return, and portfolio risk diversification while at the same time being volatile due to a host of economic, social, legal, and political uncertainties. Emerging markets characterized as transitional, meaning they are in the process of moving from a closed economy to an open market economy while building accountability within the system. As an emerging market, a country is embarking on an economic reform program that will lead it to stronger and more responsible economic performance levels, as well as transparency and efficiency in the capital market. An emerging market economy or EME will also reform its exchange rate system because a stable local currency builds confidence in an economy, especially when foreigners are considering investing. Exchange rate reforms also reduce the desire for local investors to send their capital abroad (capital flight). Besides implementing reforms, an EME is also most likely receiving aid and guidance from large donor countries and/or world organizations such as the World Bank and International Monetary Fund.

One key characteristic of the emerging market economy or EME is an increase in both local and foreign investment (portfolio and direct). A growth in investment in a country often indicates that the country has been able to build confidence in the local economy. Moreover, foreign investment is a signal that the world has begun to take notice of the emerging market, and when international capital flows are directed toward an EME, the injection of foreign currency into the local economy adds volume to the country's stock market and long-term investment to the infrastructure. For foreign investors or developed-economy businesses, an EME provides an outlet for expansion by serving, for example, as a new place for a new factory or for new sources of revenue. For the recipient country, employment levels rise, labor and managerial skills become more refined, and a sharing and transfer of technology occurs. In the long-run, the EME's overall production levels should rise, increasing its gross domestic product and eventually lessening the gap between the emerged and emerging worlds. (Investopedia, 2011).

3. Consumer Price Index (CPI)

The Consumer Price Index (CPI) is a measure of the average change over time in the prices paid by urban consumers for a market basket of consumer goods and services. It is an economic indicator, a deflator of other economic series and as a means of adjusting dollar value. The CPI reflects spending patterns for each of two population groups: all urban consumers and urban wage earners and clerical workers. The all urban consumer group represents about 87 percent of the total US. It is based on the expenditures of almost all residents of urban or metropolitan areas, including professionals, the self-employed, the poor, the unemployed and retired people, as well as urban wage earners and clerical workers. Not included in the CPI are the spending patterns of people living in rural nonmetropolitan areas, farm families, people in the Armed Forces, and those in institutions, such as prisons and mental hospitals. Consumer inflation for all urban consumers is measured by two indexes, namely, the Consumer Price Index for All Urban Consumers (CPI-U) and the Chained Consumer Price Index for All Urban Consumers (C-CPI-U).

The Consumer Price Index for Urban Wage Earners and Clerical Workers (CPI-W) is based on the expenditures of households included in the CPI-U definition that also meet two requirements: more than one-half of the household's income must come from clerical or wage occupations, and at least one of the household's earners must have been employed for at least 37 weeks during the previous 12 months. The CPI-W population represents about 32 percent of the total US population and is a subset, or part, of the CPI-U population.

The CPI represents all goods and services purchased for consumption by the reference population (U or W) BLS has classified all expenditure items into more than 200 categories, arranged into eight major groups. Major groups and examples of categories in each are as follows:

1. Food and Beverages, such as breakfast cereal, milk, coffee, chicken, wine, full service meals, snacks.
2. Housing, such as rent of primary residence, owners' equivalent rent, fuel oil, bedroom furniture
3. Apparel, such as men's shirts and sweaters, women's dresses, jewelry.
4. Transportation, such as new vehicles, airline fares, gasoline, motor vehicle insurance.
5. Medical Care, such as prescription drugs and medical supplies, physicians' services, eyeglasses and eye care, hospital services.
6. Recreation, such as televisions, toys, pets and pet products, sports equipment, admissions.
7. Education and Communication, such as college tuition, postage, telephone services, computer software and accessories.
8. Other Goods and Services, such as tobacco and smoking products, haircuts and other personal services, funeral expenses.

It is also included within these major groups are various government-charged user fees, such as water and sewerage charges, auto registration fees, and vehicle tolls. In addition, the CPI includes taxes, such as sales and excise taxes that are directly associated with the prices of specific goods and services. However, the CPI excludes taxes, such as income and Social Security taxes not directly associated with the purchase of consumer goods and services. The CPI does not include investment items, such as stocks, bonds, real estate, and life insurance.

4. Unemployment Report

The basic concepts involved the employed and unemployed are quite simple. First, people with jobs are employed. Second, people who are jobless and still looking for jobs are unemployed. Third, people who are neither employed nor unemployed are not in the labor force.

The Bureau of Labor Statistics (BLS) surveys 160,000 non-farm businesses and agencies on their number of jobs, as well as the wages paid, and the hours worked. The jobs report will tell you which industries are adding jobs, whether American workers are working longer hours, and how fast salaries are increasing. The jobs report will tells how many jobs were added, or lost, since the previous month. The economy needs 150,000 new jobs are needed each month to keep growing (Useconomy, 2011).

To get the number of unemployed, the BLS must undertake a separate survey of households, not businesses. This household report also includes workers' age, sex, and race/ethnicity. The household survey has a more expansive scope than the establishment survey because it includes the self-employed, unpaid family workers, agricultural workers, and private household workers, who are excluded by the establishment survey. However, it is not as accurate as the business establishment survey because it has a smaller sample size. That's why employment numbers are taken from the establishment survey.

5. Institute of Supply Management; Manufacturing

The ISM (previously NAPM) report is a comprehensive national survey of purchasing managers, and covers such information as new orders, employment, delivery times, production, import orders, prices, export orders and inventories (Highsky, 2012). It is releases a monthly report of the Manufacturing Purchasing Managers' Index (PMI). The Index is used to measure the level of diffusion based on surveyed purchasing managers in the manufacturing industry (Forexyard, 2012). Manufacturing is the biggest component in the Industrial data. Manufacturing can be predicted accurately from the total hours of work from the employment report and production, but it can be worst if the data include component production level of public services that can be greatly affected by the climate change. This survey is known for its accuracy timeliness (time period), the extent of the information, and the listed numbers on its headline for six major components: paid price, new orders, supplier deliveries, production, inventories, and employment. By monitoring the ISM Manufacturing Index, investors are able to get better understand about the national economic conditions in the USA. For example, when the index is increasing, investors can assume that the stock markets should increase because of higher corporate profits. The opposite can be thought of the bond markets, which may decrease as the ISM Manufacturing Index increases because of sensitivity to potential inflation. Because this survey is very comprehensive, it is one of the most followed monthly reports in the private sector. It may also be used as a leading indicator for purposes of prediction of the business cycles.

6. Producer Price Index or PPI

The Producer Price Index or PPI is a program for measures the average change over time in the selling prices received by domestic producers for their output. The prices included in the PPI are from the first commercial transaction for many products and some services. The PPI is one of the oldest continuous systems of statistical data published by the Bureau of Labor Statistics, as well as one of the oldest economic time series compiled by the Federal Government. The origins of the index can be found in an 1891 US Senate resolution authorizing the Senate Committee on Finance to investigate the effects of the tariff laws upon the imports and exports, the growth, development, production, and prices of agricultural and manufactured articles at home and abroad.

B. Related Studies

Several previous researches ever studied about the effect of the US macroeconomic news announcements; the first is a research conducted by Jussi Nikkinen, Mohammed Omran, Petri Sahls Trom, and Janne Äijo, with the tittle "The Effects of US Macroeconomic News Announcements on Emerging Stock Markets in the Asia-Pacific Region*", published on The Asia Pacific Journal of Economics & Business12. 1 (Jun 2008): 3-14, 63-64. This study aims to determine the effect of the US macroeconomic news announcement by using the GARCH method. The sample consists of Asian stock market indices from nine emerging countries and, for purposes of comparison, from four developed countries. The data period is from July 1995 to December 2003. In the selection of the emerging markets the authors largely followed the construction of the Morgan Stanley Composite Index (MSCI) for emerging Asia. Thus, the nine selected emerging markets are China, India, Indonesia, Korea, Malaysia, Pakistan, Philippines, Taiwan and Thailand. The data are collected from the Emerging Markets database. The macroeconomic news announcements investigated in the study are Consumer Price Index (CPI), Employment Report (EMP), and Institute for Supply Management (ISM): Manufacturing, and Producer Price Index (PPI). The result of this study indicates that emerging markets in the Asia-Pacific region are, indeed, affected by the scheduled US macroeconomic news announcements of the macroeconomic news announcements investigated, Employment Situation and ISM Manufacturing appear to be the most relevant from the perspective of the emerging markets. Six and five emerging markets are found to react to the Employment Situation and ISM Manufacturing announcements, respectively. The results indicate that the volatilities of several countries are affected by the US macroeconomic news releases since the *F*-statistics of the regressions are significant at the 5% significance level for four countries (Indonesia, Malaysia, Pakistan and Taiwan) out of nine. The *p*-value of the *F*-test is 0.06 in the case of China. Moreover, each country has at least one news release affecting stock market volatility significantly (at the 10% level). CPI and EMP have positive and significant estimates for China. Both estimates are statistically significant at the 10% level. In the case of India, Indonesia and Thailand, ISM appears to have a positive and significant estimate. For Korea, Pakistan and Philippines, only EMP is statistically significant; while both EMP and ISM have positive and significant coefficients for Malaysia and Taiwan. The results clearly show that the employment and ISM reports are the most important US news releases among the emerging Asian countries. For purposes of comparison, the *F*-statistics of the regressions are significant at the 10% level for Australia, Japan (*p*-value = 0.047) and Hong Kong, whereas it is insignificant for Singapore. In Australia, CPI, EMP and PPI reports have positive and significant coefficients at the 10% significance level. In Japan, the only significant coefficient is that of the CPI report release, while both CPI and EMP have significant coefficients in Hong Kong. In general, the results from the emerging countries in the Asia-Pacific region are consistent with the findings of the earlier research from the US stock markets. And from the results of the developed Asian countries are somewhat surprising given the earlier findings from the US stock markets. One possible explanation for these differences is that the emerging countries are more dependent on the US economy than the developed countries, and it is clearly indicate that the Asia-Pacific emerging stock markets are closely integrated with respect to scheduled US macroeconomic news announcements.

Goes further, Jussi Nikkinen, Mohammed Omran, Petri Sahlström, Janne Äijö had a study of "Global stock market reactions to scheduled U.S. macroeconomic news announcements". It published on the Global Finance Journal 17 (2006) 92–104. This study investigates how global stock markets are integrated with respect to the scheduled U.S. macroeconomic news announcements. To analyze the issues, this study use the behavior of GARCH volatilities around ten important scheduled U.S. macroeconomic news announcements on 35 local stock markets that are divided into six regions, which are the G7 countries (Canada, France, Germany, Great Britain, Italy, Japan, and the United States), the European countries other than G7 countries, developed and emerging Asian countries, the countries of Latin America and countries from Transition economies. The results of the study confirm earlier findings that the consumer price index, employment cost index, employment situation and NAPM reports are the most influential U.S. macroeconomic news releases (see e.g. Bollerslev et al., 2000;Grahamet al., 2003). However, as hypothesized, the general importance of the news releases varies across the world's regions. The results show that the G7 countries, European countries other than G7 countries, developed Asian countries and emerging Asian countries are closely integrated with the world's stock market, as the results show that the impact of various macroeconomic news are similar among these regions. On the other hand, Latin America and Transition economies are not affected by U.S. macroeconomic news announcements and therefore are not integrated with the world's stock markets. In general, the results of the study support the earlier findings, such as those by Bekart and Harvey (1995) and Rockinger and Urga (2001) that market integration is among the high major stock markets while some emerging markets are segmented. This implies that the international investors are able to obtain diversification benefit by investing in those emerging regions. Investors, however, should be careful in picking those markets as the results show that not all the emerging markets, like emerging markets in Asia, are proving the diversification benefit or at least they are also dependent on the U.S. economy.

Jussi Nikkinen and Petri Sahlström also studied about "Impact of Scheduled U.S. Macroeconomic News on Stock Market Uncertainty: A Multinational Perspective" and already published on Multinational Finance Journal. In this study they examine how the U.S. macroeconomic news releases affect uncertainty in domestic and foreign stock exchanges. The study focuses on the impact of the employment report, the producer price index (PPI) report and the consumer price index (CPI) report releases, which are widely followed by U.S. and foreign investors. Therefore, uncertainty associated with the release of these indicators is expected to be reflected in both the U.S. and foreign stock exchanges. The comparative results from these markets are particularly interesting since the U.S.A. is an important trading partner of Finland and the Finnish economy is largely dependent on the economies of its trading partners. In addition, the Helsinki Stock Exchange (HSE) is a representative example of a small technology-oriented stock exchange in which the share of foreign ownership accounts for 71 per cent of its total market value. The preliminary results confirm that the selection of the Finnish market is particularly interesting since implied volatilities from these markets behave similarly. In addition, the Granger causality test indicates that uncertainty flows from the U.S. market to the Finnish market. The results of the study confirm the hypotheses that implied volatility increases prior to the macroeconomic news release and drops after the announcement. This indicates that the uncertainty regarding the content of these news reports is an important factor affecting the level of the market uncertainty. Similar behavior is observed in both the markets. This implies that uncertainty associated with the U.S. macroeconomic news releases is reflected in the Finnish stock market. Of the macroeconomic news releases, the employment report has the largest impact on the uncertainty on both markets. Implied volatility is hypothesized to increase gradually at a constant rate as time to news release decreases. The results indicate that implied volatility does not behave according to this hypothesis but experiences a jump just a day prior to the release. One potential explanation is that investors in options market are shortsighted, adjusting their views about uncertainty just one day before the release. Furthermore, the results reveal that the whole effect is absorbed on the announcement day. The results of the paper have important implications. The uncertainty related to the U.S. macroeconomic news releases directly affects stock and options valuation not only in the U.S. market but also in foreign markets. The magnitude of the change in implied volatility around an announcement is big enough to have a significant impact on option prices. For future research, profitability of a trading rule based on the irrational jump in the implied volatility just a day prior to the news release provides an interesting topic. Furthermore, the systematic behavior of implied volatility can be utilized to obtain more accurate forecasts of volatility. This is also left for future research.

C. Hypothesis Development

Based on the review of literature and the related study, it may be hypothesized that emerging markets in the Asia-Pacific still affected by the US Macroeconomic News Announcement while the developed markets in the Asia-Pacific are more independent and not integrated closely with the US macroeconomics news.