

## Chapter II

### Literature Review

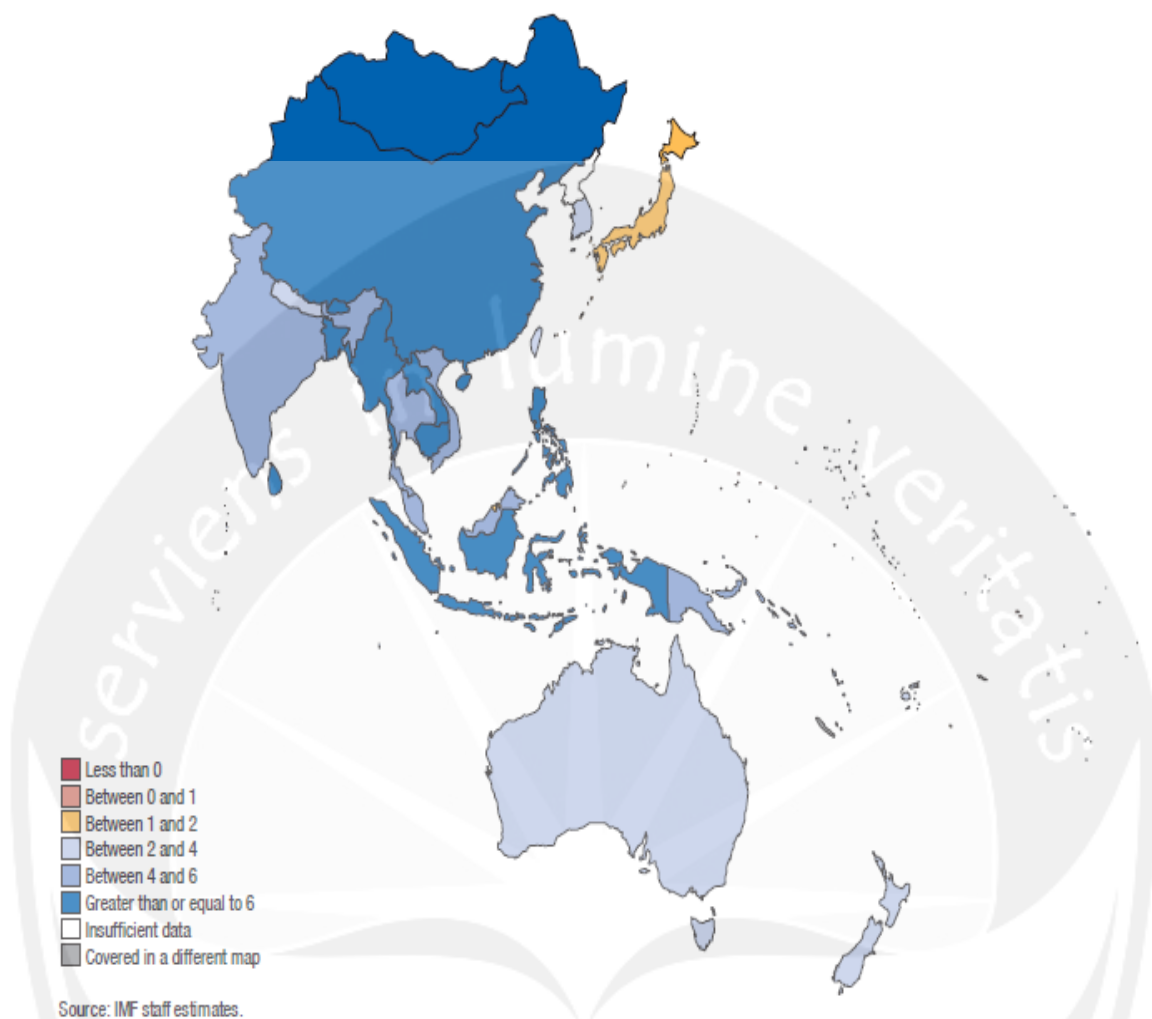
#### A. Introduction

This chapter begins with a discussion of the economy of Asian countries and their roles to the world economy in recent times. Understanding each role before analyzing their relationship with each other. After that a number of concepts, theories, and research findings of the relative topic will be presented. Then, a conceptual framework will be developed, which is crucial for the whole research study.

#### 1. The Economy of Asia Countries Recently

Economic performance was subdued in Asia during 2012, but growth is set to pick up gradually during 2013 on strengthening external demand and continued robust domestic demand (Figure2.1). Private demand will be supported by accommodative monetary and, in some cases fiscal policies; easy financial conditions; and resilient labor markets. Even as global tail risks recede, however, the risks and challenges emanating from within the region come more clearly into focus, including gradually increasing financial imbalances in some economies and the potential that any loss of confidence in regional economic policies could disrupt trade and investment. Policymakers must balance support for sustainable and more inclusive growth with the need to contain financial stability risks with adequate supervision.

*(World Economic Outlook 2013)*

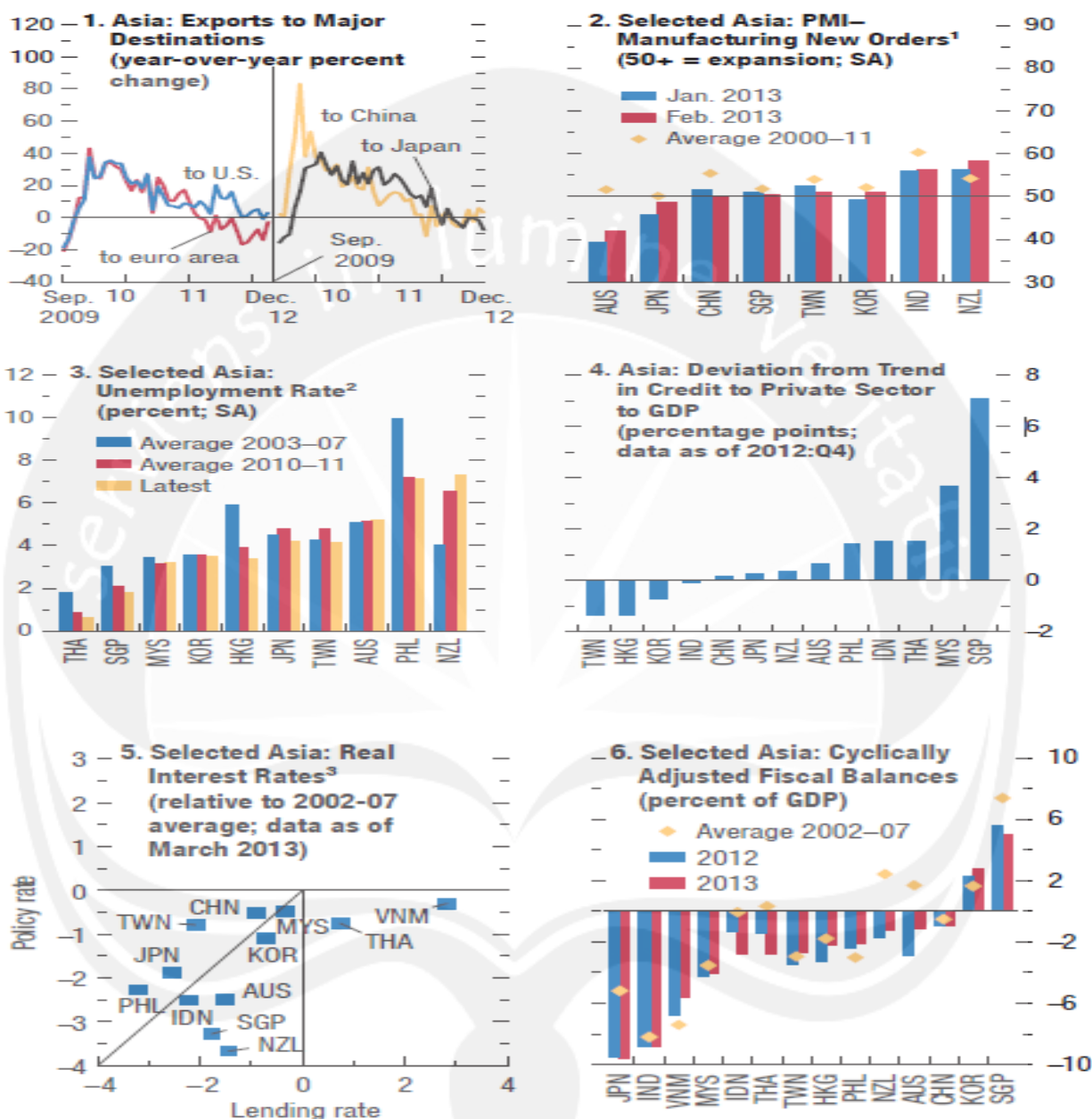


*Figure 2.1 Asia: 2013 GDP Growth Forecasts (Percent)*

*Source: International Monetary Fund. World Economic Outlook, April, 2013.*

Economic activity had stabilized in Asia by the start of 2013. Growth slowed across the region in the middle of 2012 following a broad-based weakening of exports both within and outside Asia and implementation by China of policies aimed at moderating and better balancing growth (Figure 2.2). Exports have recently picked up across the region, reflecting firmer demand in China and the advanced economies (notably the United States).

With activity showing signs of stabilization, growth is expected to pick up gradually during 2013, as robust domestic demand is supported by favorable labor market conditions, easy financial conditions, and accommodative macroeconomic policies.



Sources: CEIC Data; Markit/Haver Analytics; and IMF staff estimates.

Note: AUS = Australia; CHN = China; HKG = Hong Kong SAR; IDN = Indonesia; IND = India; JPN = Japan; KOR = Korea; MYS = Malaysia; NZL = New Zealand; PHL = Philippines; SGP = Singapore; THA = Thailand; TWN = Taiwan Province of China; VNM = Vietnam. PMI = Purchasing Managers' Index; SA = seasonally adjusted.

<sup>1</sup>A reading above 50 percent indicates expansion; below 50 percent indicates contraction.

<sup>2</sup>Latest data as of March 2013 for the Philippines; February 2013 for Korea, Taiwan Province of China, and Hong Kong SAR; January 2013 for Japan and Thailand; 2012:Q4 for Singapore and Malaysia; and 2012:Q3 for Australia and New Zealand.

<sup>3</sup>A position above the 45-degree line indicates a larger lending cut, and below the line indicates a larger policy rate cut.

*Figure 2.2 Asia: Stabilization, Recovery, and Accommodative Policies*

Source: International Monetary Fund. World Economic Outlook, April, 2013.

Asian economies will also benefit from internal demand spillovers, particularly growing Chinese demand and the policy-led pickup in Japan. Indeed, for several economies, direct and indirect demand from China and Japan are almost as important as demand from the United States and Europe. This dynamic may be complicated, however, by the recent yen depreciation, which may put some of the region's exporters in more direct competition with Japanese firms in world markets, while others may benefit through supply chain linkages with Japan. The ASEAN economies have become increasingly competitive in production of final consumer goods, which will contribute favorably to intraregional demand. Inflation is expected to remain generally within central banks' targets (explicit or implicit). Reflecting the moderate acceleration of growth and as Table outlook for global food and commodity prices, headline inflation is expected to increase slightly to 4 percent in 2013, from 3½ percent in 2012.

- In Japan, growth is projected to be 1½ percent in 2013, moderately higher than in the October 2012 WEO as a result of new fiscal and monetary stimulus, despite a sharp contraction in the second half of 2012. A sizable fiscal stimulus—about 1½ percent of GDP over two years—will boost growth by some 0.6 percentage point in 2013, and growth will be supported by a recovery in external demand and the substantial further monetary easing under the recently announced quantitative and qualitative framework in pursuit of the 2 percent inflation target.
- China's growth is set to accelerate slightly to about 8 percent in 2013, reflecting continued

robust domestic demand in both consumption and investment and renewed external demand. Inflation will pick up only modestly to an average of 3 percent in 2013.

- In Korea, improved exports should help spur private investment and help growth rebound to 2¾ percent. Inflation is rising but is expected to remain close to the lower bound of the target band.
- Growth will rise in India to 5¾ percent in 2013 as a result of improved external demand and recently implemented pro-growth measures. Significant structural challenges will likely lower potential output over the medium term and also keep inflation elevated by regional standards.
- Growth in the ASEAN-5 economies will remain strong at 6 percent in 2013, reflecting resilient domestic demand. A large pipeline of projects under the Economic Transformation Plan will propel strong investment in Malaysia; robust remittance flows and low interest rates should continue to support private consumption and investment in the Philippines; and Indonesia will benefit from a recovery of commodity demand in China. In Thailand, growth is expected to return to a more normal pace after a V-shaped recovery driven by public reconstruction and other flood-related investment in 2012.

The potential impact of external risks on Asia remains considerable. In the event of a severe global slowdown, falling external demand would exert a powerful drag on Asia's most open economies, including through the second- round impact of lower investment and employment in export-oriented sectors.

As global tail risks recede somewhat, risks and challenges to growth from within the region

come more clearly into focus. Financial imbalances and asset prices are building in a number of economies, fueled by rapid credit growth and easy financing conditions. In China, the use of more market-based financial instruments means that about half of financial intermediation now takes place outside traditional banking channels in less-well-supervised parts of the financial system, which leads to growing risks. (World Economic Outlook, 2013)

**Table 2.1 Selected Asian Economies: Real GDP, Consumer Prices, Current Account Balance, and Unemployment** (*World Economic Outlook, 2013*)

(Annual percent change unless noted otherwise)

	Real GDP			Consumer Prices <sup>1</sup>			Current Account Balance <sup>2</sup>			Unemployment <sup>3</sup>		
	2012	Projections		2012	Projections		2012	Projections		2012	Projections	
		2013	2014		2013	2014		2013	2014		2013	2014
<b>Asia</b>	<b>5.3</b>	<b>5.7</b>	<b>6.0</b>	<b>3.4</b>	<b>3.9</b>	<b>4.4</b>	<b>1.2</b>	<b>1.1</b>	<b>1.3</b>	...	...	...
<b>Advanced Asia</b>	<b>2.1</b>	<b>2.2</b>	<b>2.6</b>	<b>1.1</b>	<b>1.2</b>	<b>2.8</b>	<b>1.5</b>	<b>1.1</b>	<b>1.4</b>	<b>4.2</b>	<b>4.0</b>	<b>4.0</b>
Japan	2.0	1.6	1.4	0.0	0.1	3.0	1.0	1.2	1.9	4.4	4.1	4.1
Korea	2.0	2.8	3.9	2.2	2.4	2.9	3.7	2.7	2.4	3.3	3.3	3.3
Australia	3.6	3.0	3.3	1.8	2.5	2.5	-3.7	-5.5	-6.0	5.2	5.3	5.2
Taiwan Province of China	1.3	3.0	3.9	1.9	2.0	2.0	10.5	10.3	9.8	4.2	4.2	4.2
Hong Kong SAR	1.4	3.0	4.4	4.1	3.5	3.5	2.3	2.0	2.5	3.3	3.2	3.1
Singapore	1.3	2.0	5.1	4.6	4.0	3.4	18.6	16.9	17.2	2.0	2.0	2.1
New Zealand	2.5	2.7	2.6	1.1	1.4	2.2	-5.0	-5.8	-6.0	6.9	6.6	6.0
<b>Developing Asia</b>	<b>6.6</b>	<b>7.1</b>	<b>7.3</b>	<b>4.5</b>	<b>5.0</b>	<b>5.0</b>	<b>1.1</b>	<b>1.1</b>	<b>1.3</b>	...	...	...
China	7.8	8.0	8.2	2.6	3.0	3.0	2.6	2.6	2.9	4.1	4.1	4.1
India	4.0	5.7	6.2	9.3	10.8	10.7	-5.1	-4.9	-4.6	...	...	...
<b>ASEAN-5</b>	<b>6.1</b>	<b>5.9</b>	<b>5.5</b>	<b>3.9</b>	<b>4.5</b>	<b>4.5</b>	<b>0.8</b>	<b>0.6</b>	<b>0.4</b>	...	...	...
Indonesia	6.2	6.3	6.4	4.3	5.6	5.6	-2.8	-3.3	-3.3	6.2	6.1	6.0
Thailand	6.4	5.9	4.2	3.0	3.0	3.4	0.7	1.0	1.1	0.5	0.7	0.7
Malaysia	5.6	5.1	5.2	1.7	2.2	2.4	6.4	6.0	5.7	3.0	3.0	3.0
Philippines	6.6	6.0	5.5	3.1	3.1	3.2	2.9	2.4	2.0	7.0	7.0	7.0
Vietnam	5.0	5.2	5.2	9.1	8.8	8.0	7.4	7.9	6.3	4.5	4.5	4.5
<b>Other Developing Asia<sup>4</sup></b>	<b>6.2</b>	<b>6.0</b>	<b>6.5</b>	<b>7.4</b>	<b>6.8</b>	<b>6.1</b>	<b>-1.6</b>	<b>-2.2</b>	<b>-2.2</b>	...	...	...
<i>Memorandum</i>												
Emerging Asia <sup>5</sup>	6.0	6.6	6.9	4.2	4.7	4.7	1.9	1.8	1.9	...	...	...

Note: Data for some countries are based on fiscal years. Please refer to the country information section of the WEO online database on the IMF website ([www.imf.org](http://www.imf.org)) for a complete listing of the reference periods for each country.

<sup>1</sup>Movements in consumer prices are shown as annual averages. Year-end to year-end changes can be found in Tables A6 and A7 in the Statistical Appendix.

<sup>2</sup>Percent of GDP.

<sup>3</sup>Percent. National definitions of unemployment may differ.

<sup>4</sup>Other Developing Asia comprises Bangladesh, Bhutan, Brunei Darussalam, Cambodia, Fiji, Kiribati, Lao P.D.R., Maldives, Marshall Islands, Micronesia, Mongolia, Myanmar, Nepal, Papua New Guinea, Samoa, Solomon Islands, Sri Lanka, Timor-Leste, Tonga, Tuvalu, and Vanuatu.

<sup>5</sup>Emerging Asia comprises all economies in Developing Asia, Hong Kong SAR, Korea, Singapore, and Taiwan Province of China.

## **B. Theoretical Background**

### **1. Stock Market**

When we talking about stock one of the most important places we must understand that is stock market.

A stock market or equity market is a public entity (a loose network of economic transactions, not a physical facility or discrete entity) for the trading of company stock (shares) and derivatives at an agreed price; these are securities listed on a stock exchange as well as those only traded privately.

The stocks are listed and traded on stock exchanges which are entities of a corporation or mutual organization specialized in the business of bringing buyers and sellers of the organizations to a listing of stocks and securities together. The largest stock market in the United States, by market capitalization, is the New York Stock Exchange (NYSE). In Canada, the largest stock market is the Toronto Stock Exchange. Major European examples of stock exchanges include the Amsterdam Stock Exchange, London Stock Exchange, Paris Bourse, and the Deutsche Börse (Frankfurt Stock Exchange). In Africa, examples include Nigerian Stock Exchange, JSE Limited, etc. Asian examples include the Singapore Exchange, the Tokyo Stock Exchange, the Hong Kong Stock Exchange, the Shanghai Stock Exchange, and the Bombay Stock Exchange. In Latin America, there are such exchanges as the BM&F Bovespa and the BMV. Australia has a national stock exchange, the Australian Securities Exchange, due to the size of its population.

Market participants include individual retail investors, institutional investors such as mutual funds, banks, insurance companies and hedge funds, and also publicly traded corporations trading in their own shares. Some studies have suggested that institutional investors and corporations trading in their own shares generally receive higher risk-adjusted returns than retail investors.

If compare with western stock markets Asian financial markets, particularly within developing economies, are still generally less mature and less regulated than markets in America or Europe. Bond markets, in particular, are often underdeveloped, as bank financing is much more common than financing via the issuance of corporate debt. On the equity side, Asian markets are less likely to do the same type of capital restructuring that is common in America, with leveraged buyouts and similar maneuvers being exceptions rather than the rule. The wide variety of financial products available through retail banks is also more common in developed countries outside Asia.

Regulatory reforms in Asian financial markets also lag Western markets, and political factors can play a role, particularly in less developed economies where government intervention can be heavy. The operating differences and regulatory differences all serve as reminders of the need for investors to conduct research and give careful consideration to any investment before adding it to their portfolios.

But at the same time Asian stock markets get significant fast-growing. At the end of 2010, the Asian economies were still booming. China, South Korea, Thailand, Indonesia and Malaysia are exporting powerhouses. Gross domestic product is rising in these nations and so

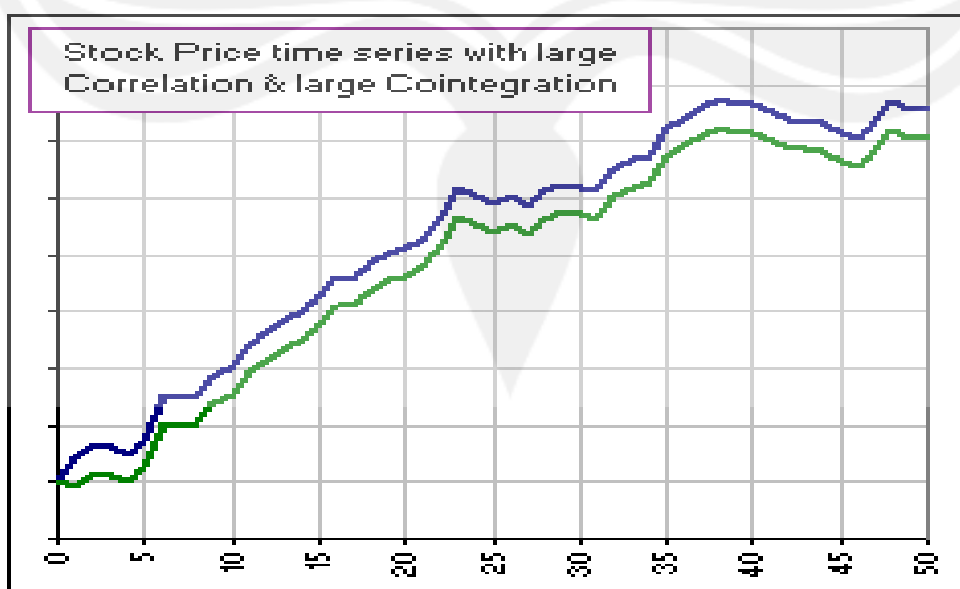


are the investment opportunities. Double-digit stock market returns have left Western markets in the dust over the past decade, and investors are taking notice.

This paper examined stock market in 15 different markets of Asian. They are Australia, Hong Kong, Shanghai, Taiwan, Indonesia, India, Japan, Korea, Malaysia, New Zealand, Philippines, Pakistan, Singapore, Sri Lanka and Thailand.

## 2.The Concepts of Co-integration Analysis

Co-integration is a statistic property of time series variables. Two or more time series are co-integrated if they share a common stochastic drift. Correlation is used to measure the correlation between returns. When the returns for one stock go up or down, does the other tend to go up or down as well. It's a short term measure of interdependence. On the other hand, co-integration attempts to measure common trends in prices over the long haul. For example, suppose that the time series associated with two stock returns have a high correlation and the prices have high co-integration. As follow in Figure2.3:



*Figure 2.3 Trend of Co-integration (Sørensen, 2005)*

Co-integration theory is definitely the innovation in theoretical econometrics that has created the most interest among economists in the last decade. The deflection in the simple case of 2 time series  $\chi_t$  and  $\gamma_t$ , that are both integrated of order one (this is abbreviated I(1), and means that the process contains a unit root), is the following:

Definition(Sørensen,2005):

$\chi_t$  and  $\gamma_t$  are said to be co-integrated if there exists a parameter such that

$$U_t = \gamma_t - \beta \chi_t \quad (1)$$

is a stationary process.

This turns out to be a path breaking way of looking at time series. Because it seems that lots of economic series behaves that way and also because this is often predicted by theory. The first thing to notice is that economic series behave like I (1) processes, i.e. they seem to drift all over the place; but the second thing to notice is that they seem to drift in such a way that the they do not drift away from each other. If you formulate this statistically you come up with the co-integration model.

The famous paper by Davidson, Hendry, Srba and Yeo (1978), argued for models that imposed the long run condition that the series modeled should not be allowed to drift arbitrarily far from each other.

Granger and Morgenstern (1970), Ripley (1973) or Panto et al. (1976) investigated short-run linkages using correlation analysis. With the emergence of the co-integration framework first suggested by Granger (1981) and consequently developed by Granger and

Weiss (1983) and Engle and Granger (1987), the methodology of stock market linkages improved. Along with the Autoregressive Conditional Heteroskedasticity (ARCH) approach developed by Engle (1982) and extended by Bollerslev (1986), co-integration has now become the main tool in analyzing the relationship between stock markets. Further methodological improvements by Johansen (1988, 1991) eased the treatment of multivariate co-integration and provided a unified approach to estimation and testing.

Phylaktis and Ravazzolo (2002) examines real and financial links simultaneously at the regional and global level for a group of Pacific-Basin countries by analyzing the covariance of excess returns on national stock markets over the period 1980-1998. They find overwhelming evidence at the regional or global level and for all sub-periods that financial integration is accompanied by economic integration. Dellas and Hess (2002) examine stock returns in a cross section of emerging and mature markets (49 countries) over 1980-99. Stock returns are found to be significantly related to the degree of financial development. In general, a deeper and higher quality banking system is associated with lower volatility of stock returns and a greater synchronization in the movements of domestic and world returns. International synchronization is also greater the more liquid the stock market.

Wing-keuang, Jack, Richard and Karen (2004) found that there is co-movement between some of the developed and emerging markets, but some emerging markets do differ from the developed markets with which they share a long-run equilibrium relationship. Furthermore, it has been observed that there has been increasing interdependence between most of the developed and emerging markets since the 1987 Stock Market Crash. This

interdependence intensified after the 1997 Asian Financial Crisis. With this phenomenon of increasing co-movement between developed and emerging stock markets, the benefits of international diversification become limited.

Co-integration of stock markets has a direct impact on diversification opportunities. If co-integration is present, then that means that there is a long-run relationship between the two series. In other words, it indicates the presence of common factors which limit the amount of independent variation among the series. While co-integration implies the absence of long-run diversification opportunities, it is still possible to derive gains from portfolio diversification in the short run.

### **3. Stock Market Linkage**

As the World Bank (1997) argues that the world's financial markets are rapidly integrating into a single global market-place as investors are driven to developing countries in a search for high returns and opportunities for risk diversification. The part of the move toward greater integration is driven by the wave of deregulation across most the developing countries. The liberalization of these financial markets has resulted in greater flows of capital across countries. The greater flow of capital across countries is also associated with the growing importance of institutional investor who is both willing and able to invest internationally.

It is generally accepted that world stock markets have become more closely linked in recent years. A range of factors can be identified that have strengthened the linkages among

stock markets in different parts of the world, including (Jefferis, Okeahalam and Matome 2001):

- a. The increasing importance of international capital flows and mobility, resulting from the progressive removal of controls on capital movements by the major industrialized countries and some developing countries. This is especially the case since the move from a fixed to a flexible exchange rate system among major world currencies in 1973.
- b. A general world-wide move to deregulate financial markets. The reduction of the degree of government intervention allows freely floating (market determined) prices and quantities to transmit excess demand pressures to other related markets (Ma,1993: 288).
- c. Technological advances. These have improved the speed of international financial transactions, improved the international flow of information between markets, helped to reduce transactions costs and led to effective 24-hour trading.
- d. Increases in the number of multinational companies whose shares are cross-listed on more than one major international stock exchange. Such companies also tend to be involved in economic activities in a number of different countries around the world and hence their performance will increasingly tend to be affected by global rather than country-specific factors.
- e. Increasing international trade

Although these trends have had an impact on a range of different financial markets, it is in equity markets that globalization has proceeded most rapidly (Aburachis, 1993:32).

One impact of increased linkages among stock markets internationally is that price movements and other shocks are likely to be transmitted more rapidly between markets, increased interdependence between markets leads to a more rapid and larger transmission of national financial disturbances—through “contagion” effects—to other markets (von Furstenburg and Jeon, 1989: 125).

### **C. Literature Review Highlight**

Numerous studies have been done to investigate stock market linkages, integration or interdependence. This paper divides previous literature into two parts. The first, examining the mutual relationship of Asian and global stock markets and the second about inside Asian stock markets research.

#### **1. Mutual Relationship of Asian and Global Stock Markets**

The topic of co-integration among global stock markets has been thoroughly explored in existing literature.

Grubel (1968) illustrated his theoretical proposition of international diversification with a calculation based on the empirical data of eleven major national stock markets: United States, Canada, United Kingdom, Germany, France, Belgium, Italy, Holland, Japan, Australia and South Africa. The empirical result showed that, a portfolio that was composed of only securities of United States had a lower efficient frontier than a portfolio that contained

securities from all eleven countries. This provided explicit evidence of the benefits of international diversification. Furthermore, Grubel pointed out that the smaller the correlation co-efficient between countries, the more significant the beneficial effect of the diversification.

After that Kasa (1992) first used Johansen's co-integration test to study the linkages of stock markets. Using a long VAR specification, the author finds strong evidence for a single common trend in the markets of the US, Japan, Germany, Britain and Canada for the period 1974-1990. Following Kasa, co-integration rather than correlation has been used in the literature to analyze the long-term diversification opportunities between and amongst the developed and emerging equity markets as well as the integration and convergence across regions. Divecha et al. (1992) investigated ten emerging Asian stock markets and found that they were homogenous with a dominating strong market force and less correlated with each other and with developed markets. Chan et al. (1992) studied the inter-relationship among the stock markets of Hong Kong South Korea, Singapore, Taiwan, Japan and the US and found that these markets are all weak form efficient but not co-integrated with each other.

Similarly Ansari (2009) checked the relationship of stock indices of some major markets throughout the world, with sample of monthly closing stock prices data of ten equity indices of Australia, Canada, France, Germany, Hong Kong, Japan, Singapore, the UK, and the USA from 1990-2005. Results indicate that each market is weak-form efficient. As such, price movement in every market is random and cannot be predicted. The tests produced a large number of co-integrating vectors which implied a strong long run relationship between all markets. Thus, globalization seems to have greatly impacted international financial

integration.

Taimur Ali Khan (2011) used daily data from 2005 to 2007 to examine the long-run convergence of the United States and 22 other developed and developing countries. The result was found that Austria, Malaysia, India, Japan, Hong Kong, Norway and the United States were found to be the least sensitive (or risky) to movements of the global index. Compounded with the co-integration analysis, the study identifies Austria, Malaysia and China as countries most favorable for diversification.

While Ratanapakorn and Sharma (2002) investigated not only long-run relationships but also the short-run among stock indices of the US, Europe, Asia, Latin America, and Eastern Europe and Middle East for the pre-Asian crisis and for the crisis period. No long-run relationship was observed among these indices during the pre-Asian crisis period. They also inferred that only the European markets directly affected the US market, while the other regional markets indirectly influenced the US market through the European market.

Except check the linkage among the several countries, Chittedi (2009) based on daily data for the period January 1998- Aug 2009 use Granger causality test results show that co-integration relationship found between BRIC (Brazil, Russia, India and China) countries and Developed countries namely U.S, UK and Japan. It implies that these markets share the forces of short run adjustment to long run equilibrium. India and developed countries markets USA, UK, Japan, and other Emerging BRIC markets highly co-integrating during the period of the study.



## **2. Asian Stock Markets Research**

The linkages between Asian stock markets have been examined in several previous studies as follow. In these there are three different methods of comparison used. The first method uncovers the relationship between some Asian stock markets and either the U.S. or UK. The second reveals the relationship between one Asian stock market and another or the U.S. and the third, the relationship between select Asian stock markets.

### **2.1 Relationship between Some Asian Stock Markets and Either the U.S. or UK**

Chan, Gup and Pan (1992), were interested in the fast development of the “Four Little Tigers” in Asia in the 1980s, in this paper they found that no evidence was found to show that there was a long-term co-integration relationship among the Asian stock markets and the United States market individually or collectively. That is, neither the stock price of a single country nor that of a group of countries could be used to provide a predictive reference for the future stock price of another country. Thus, the result implied that the diversification strategy was effective across these Asian countries because the unsystematic risk could be reduced.

Janakiramanan and Lamba (1998) analyze the dynamic relationship between daily return of eight Pacific-Basin countries (Australia, Hong Kong, Japan, New Zealand, Singapore, Indonesia, Malaysia, and Thailand) and the US over the period 1988-1996. The study uses vector auto regression (VAR). The results exhibit a US influence on all other markets except for Indonesia, and when the study excluded the US market from the VAR

system it finds linkages between these markets, which in turn and according to the study, are traced to the indirect influence of the US market. Also the study finds a significant mutual influence between the markets that are geographically and economically close to each other. Roca et al. (1998) reported that with an exception of India, ASEAN-5 markets were closely linked in the short-run but not in the long-run, and two markets (Singapore and Thailand) had strong linkages with other markets.

Shamiri and Isa (2010) studied integration among equity markets of Asia Pacific, with sample of daily stock indices of STI (Singapore), HKSE (Hong Kong), KOSPI (Korea), TWSI (Taiwan), KLSE-CI (Malaysia), Thai Stock index, JKSE-CI (Indonesia), N225 (Japan) and S&P500 (USA) for the period of 1991-2004. Founding the volatility of the Asia-Pacific markets is becoming influenced more by the US market for the recent years. For international investors to get profits from the returns of Asia-Pacific securities, it is necessary to pay attention to the US market directly. And Korea, Singapore and Hong Kong are among the most Asia-Pacific markets vulnerable to shocks from US investors due to the large ratio of portfolio holding. However, implementing global hedging strategies on Asia-Pacific markets requires the information concerning the Japanese volatility behavior.

## **2.2 Relationship between One Asian Stock Market and Another or the U.S**

Roca (1999) investigated the price linkages between the equity markets of Australia and that of the U.S., U.K., Japan, Hong Kong, Singapore, Taiwan and Korea using weekly stock market data. He uses Johansen co-integration technique to determine the long run

relationship between the price levels of the above countries and employed Granger causality tests to determine the short run relationships. His results indicated no co-integration between Australia and other markets. However, the Granger causality tests revealed that Australia is significantly linked with the U.S. and the U.K.

Johnson and Soenen (2002) investigate to what degree twelve equity markets in Asia are integrated with Japan's equity market and examine the factors that affect the level of economic integration. They find that the equity markets of Australia, China, Hong Kong, Malaysia, New Zealand, and Singapore are highly integrated with the stock market in Japan. There is also evidence that these Asian markets become more integrated over time, especially since 1994. Higher import shares as well as a greater differential in inflation rates, real interest rates, and gross domestic product growth rates have negative effects on stock market co-movements between country pairs. Conversely, increased export share by Asian economies to Japan and greater foreign direct investment from Japan to other Asian economies contribute to greater co-movement. Yang and Lim (2002) in an empirical study of nine East Asian stock markets for the period January 1990 to October 2000 find some evidence of short-term linkages.

Menon, Subha and Sagar (2009) checked relationship of India's stock index with different reputed indices around the world (China, India, UK, Malaysia, Japan Singapore, U.S and Hong Kong). the result shows TASI has a significant relationship with S & P, and no dependence with other stock indices, it becomes clear that the Saudi stock market and investor sentiments move with the American economic trends rather than with better

performing markets.

Han wen Tzeng and Tsung-Hsien Chen (Taiwan 2012) re-investigate whether there exists long-run benefits from international equity diversification between China and its major trading partners (i.e., Hong Kong, Japan, South Korea, Taiwan and the USA), and suggest that the China stock market is not pair wise co-integrated with its trading partners stock markets. These findings should prove valuable to individual investors and financial institutions holding long-run investment portfolios in these markets.

### **2.3 Relationship between Select Asian Stock Markets.**

Sheng and Tu (2000) used a co-integration and variance decomposition analysis to examine the linkages among the stock markets of 12 Asia-Pacific countries, before and during the period of the Asian financial crisis. Find out in the recent crisis, the relationship within the South-East Asian countries seems to be stronger than that within the North-East Asian countries. The variance decomposition reveals that the 'degree of exogenous' for all indices has been reduced, implying that no countries are 'exogenous' to the financial crisis. In addition, Granger's causality test suggests that the US market still 'causes' some Asian countries during the period of crisis, reflecting the US market' persisting dominant role. Johansen (1988) multivariate co-integration and error-correction tests demonstrate evidence in support of the existence of co-integration relationships among the national stock indices during, but not before, the period of financial crises. In the recent crisis, the relationship within the South-East Asian countries seems to be stronger than that within the North-East

Asian countries. The variance decomposition reveals that the 'degree of exogeneity' for all indices has been reduced, implying that no countries are 'exogenous' to the financial crisis. In addition, Granger's causality test suggests that the US market still 'causes' some Asian countries during the period of crisis, reflecting the US market's persisting dominant role. Masih and Masih (1999, 2002) found co-integration in the pre-financial crisis period of October 1987 among the stock markets of Thailand, Malaysia, the US, UK, Japan, Hong Kong and Singapore. But there were no long-run relationships between these markets for the period after the global stock market crash of 1987. Najand (1996), using linear state space models, detected stronger interactions among the stock markets of Japan, Hong Kong, and Singapore after the 1987 stock market crash.

Yang, Kolari, and Min (2002) examines long-run relationships and short-run dynamic causal linkages among the U.S., Japanese, and ten Asian emerging stock markets, with the particular attention to the 1997-1998 Asian financial crisis. The results for the case of Asia show that both long-run co-integration relationships and short run causal linkages among these markets were strengthened during the crisis and that these markets have generally been more integrated after the crisis than before the crisis.

Febrian, Erie and Herwany, Aldrin (2007) examine the long-term equilibrium relationship among the three major South-East Asian equity markets (i.e. JKSE, KLSE, and STI) from January 1997 to December 2006. Found that the indices are perfectly correlated in the long run and diversification among these three equity markets cannot benefit international portfolio investors. However, there can be excess returns in the short run.

Subramanian (2009) examines the co-integration and causal relations among five major stock exchanges in East Asia, i.e. Shanghai Stock Exchange, Tokyo Stock Exchange, Osaka Stock Exchange, Hong-Kong Stock Exchange and Korean Stock Exchange January 2000 to August 2008. By employing co-integration and error correction method find that the price indices of the five markets are co-integrated. This means that international investors cannot diversify their investment if they put their money in these stock exchanges.

From the empirical studies view all above we can find out that there was a similar trend has been found between the most Asian and western stock markets. U.S. stock markets still influence most of stock markets in the world. However, from country to country the influence is difference. So it provides opportunity for research and study among these countries to explore their relationship in order to make a perfect investment.

#### **D. Hypotheses Development**

As mentioned above, according to Chan, Gup and Pan (1992) implied that the diversification strategy was effective across these Asian countries because the unsystematic risk could be reduced. But Sheng and Tu (2002), Masih (1999, 2002) and Yang et al (2002), found after 1997-1998 Asian financial crisis, Asian stock markets seems stronger interactions with each other. But the degree of correlation in each stock market is different. Ansari (2009) check some major markets around the world, indicates that each market is weak- form efficient. Khan (2011) identifies Austria, Malaysia and China as countries most favorable for diversification.

Moreover the tenet of efficient markets hypothesis assumes that stock markets in different countries display relatively low correlation, based on the notion that most economic disturbances are country specific. As the rapid economic integration within Asian countries, hence the stock market linkages across this region should exist, the correlation level is different, and among Asian different stock markets the causality also different.

After review previous studies this paper will propose that Asia Pacific stock markets have a long and short term linkage and causality during 2000-2012. The working hypotheses to be tested as follow:

$H_1$  = There are causality relationships among 15 selected Asian pacific markets.

Including developed stock markets Japan, Hong Kong, Singapore, and Australia with emerging markets of India, Shanghai, South Korea, Pakistan, Bangladesh, Malaysia, Taiwan, Philippines, Indonesia and Thailand.

$H_2$  = There have long and short term linkage among 15 selected Asian pacific markets.

Including developed stock markets Japan, Hong Kong, Singapore, and Australia with emerging markets of India, Shanghai, South Korea, Pakistan, Bangladesh, Malaysia, Taiwan, Philippines, Indonesia and Thailand.