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Appendices

Appendix A

Major Events in Asian Emerging Countries

Chronological events in Asian emerging countries, Korea, Malaysia, Philippines, Taiwan, and Thailand, are listed. This data is obtained from Peter Blair Henry, the Assistant Professor of Economics, Graduate School of Business, Stanford University. These events are applied in analyzing the estimation of the level of Asian stock markets integration.

Korea: Major Events Since 1976

11-26-79   President Park Chung Hee is assasinated.

1-12-80   The Won is devalued by 17%.

5-17-80   A number of students are killed as martial law is extended over the entire country in an attempt to silence political opposition.

12-80   The finance ministry announces a program for drastic reform of the banking system: (1) four commercial banks now under government control are to be placed under private ownership; (2) widening of the spread between deposit and loan rates; (3) phasing out low interest government loans for officially favored development policies.

11-81   The five year economic plan is published. It assumes structural readjustment is essential to further growth and embodies a general commitment to a freer economy: (1) preferential exemptions and rebates on corporate taxes; (2) import taxes generally reduced; (3) real interest rates to be kept positive; (4) policy loans at subsidized rates curtailed; (5) short term export credit curtailed; (6) increased incentives for foreign investment; (7) removal of obstacles to domestic competition.

3-82   President Chun's administration shaken by allegations of bribery. the office of supply was allegedly paid $ 8M by a US rice exporter.

5-82   Two of Chun's wife's relatives arrested for their part in a financial scandal. Promisory notes worth $ 338M were issued by six different corporations and then dishonored. The central bank had to make $ 139M available to their creditors.

6-82   President Chun revamps his entire cabinet.

12-82   Several years of embezzlement come to an end when an employee of Sam Bo Securities company, the country's largest stockbroker, turns incriminating evidence over to the attorney general. The company's books showed $ 26.3M in securities which the company did not have; employees had been trading with clients' money.

7-83   Access to the stock exchange is eased. Companies seeking access to the stock exchange need only have paid up capital of won 500M rather than the won 2.4B previously required. Also companies only need to offer 20% of their shares to the public rather than the 40 % previously required.

10-9-83   Four cabinet members are killed by North Koreans at a wreath laying ceremony in Burma. All four were key members of the economic liberalization team. President Chun quickly replaces them with new team committed to market reforms.

3-84   It is announced that by 7-84 enough goods will be removed from the import restriction list to raise South Korea's import liberalization ratio from 80.3% to 84.7%.

11-5-84   Interest rates are liberalized: (1) the lending ceiling for commercial banks is increased; (2)ceilings on time deposits of 1 to 3 years are raised; (3) the maximum rate that short term finance and mutual savings companies can charge is cut and the maximum rate they can pay on deposits is cut; (4) interest rates on call money and non-guaranteed corporate bonds are allowed to float for the first time.

7-1-85   235 items are freed of import restrictions of any kind. the proportion of liberalized goods rises from 84.7% to 87.7%

11-85   A three year plan for import liberalization is published. 300 items are to be liberalized in July of 1986, 1509 a year later, and 141 in 1988 bringing the percentage of liberalized imports to 95.4%.

11-15-86 False reports are broadcast that North Korean dictator KIM IL Sung is dead.

3-87   A tariff reduction list is made up for 14 items; tariffs are reduced from 20 or 25% to 2% on a range of products.

4-87   A list of tariff reductions is announced on 85 products including a wide range of consumer durables.

6-6-87   President Chun backs Roh Tae Woo as the Democratic Justice Party candidate; the DJP nominates Woo and protesters demonstrate what they see as seven more years of military rule.

6-11-87   Protesting students beseiged in Roman Catholic Church; growing sign of middle class support for students as protests persist.

6-16-87   Anti government rally in Seoul.

6-17-87   Kim Young Sam leads 2000 in call for Dae Jung's house arrest.

6-16-87   Worst rioting yet. Roh calls resumed party talks on constitution.

6-19-87   President Chun advised by the White house to re-open dialogue.

6-24-87   Dae Jung's house arrest is lifted.

6-29-87   Roh Tae Woo calls for direct presidential elections, press freedom, freeing of political prisoners, more local autonomy for provinces.

6-30-87   President Chun accepts all Roh's proposals.

7-87   From July through September there are labor disputes. Over 3,400 companies are affected by strikes; military hard liners consider stopping reforms.

7-1-87   Imports of cars with engines of over 2000 cubic centimeters are permitted.

9-87   It is announced that tariffs will be lowered by an average of 6% on 171 items. Tariffs on raw materials are to lowered by 3 to 15% starting in October.

12-16-87   Roh Tae Woo defeats the opposition-- Kim Young sam end Kim Dae Jung.

1-1-88   tariff cuts of between 5 and 20% take place on 104 items.

2-25-88   President Roh takes office.

3-88   Tariff rates on consumer durable goods are lowered by up to 30%.

4-88   An industrial strike erupts that persists through may and June.

11-88   Tariff rates on 109 items are brought down by an average of 6.4% to 16.6%; the tariff on

            cars, trucks, and buses are reduced from 25 to 20%; air conditioners, refrigerators and

            cameras from 30 to 20%; washing machines from 20 to 15%.

11-88   The minimum wage for 1989 is increased by 23% to $ .90 an hour.

12-5-88   Bank rates, lending rates and deposit rates are deregulated.

1-89   In the middle of January restrictions on investment in overseas real estate are abolished; the

            government begins to encourage Korean investment abroad; 14 agricultural products are

            removed from the import monitoring system.

3-1-89   Restrictions on the import of 113 raw materials is removed.

3-17-90   15 of 27 of Roh's cabinet members are replaced including the minister of finance and the

            minister of trade and industry.

5-31-90   North Korea makes disarmament proposals.

6-4-90   Gorbachev and Roh agree to pursue normalization of diplomatic ties.

10-1-90   The foreign ministers of Korea and the USSR announce the establishment of full

            diplomatic relations for the first time.

6-91   The ministry of finance announces guidelines for opening the stock market to foreigners in

            January of 1992.

7-1-91   Foreign firms are allowed to operate up to ten different retail outlets.

10-1-91   The limit on foreign banks issue of Cds is raised from 175% of their capital to 200%.

12-91 North and South Korea agree to "reconcilliation, non-agression, cooperation, and exchange."
        they agree to recognize respect and not interfere in each other's system.

10-91 8 South Korean city banks are "asked" by the government to lend won 200B to promote
        exports at a fixed annual rate of 12%; the market lending rate is 18%.

1-92   North Korea agrees to inspection of its military facilities.

3-92   The Daehan, Korea, and Citizen investment trusts have to be bailed out as they have
          collectively (for the year) lost $ 680M. The trusts are a major source by which Koreans
          invest in the stock market.

4-9-92   North Korean parliament ratifies an agreement reached in January with the International
          Atomic Energy Agency to open North Korea's nuclear installations to inspection.

8-24-92   The minister of finance announces measures to compel pension funds and mutual funds
          to invest a fixed proportion of their assets in equities.

12-8-92   Kim Young Sam of the Democratic Liberal party(DLP) wins the presidential election. His
          economic platform consisted of a commitment to lower interest rates and inflation. His
          cabinet is seen as reformist. He lays out a major plan to battle corruption in government.

3-12-93   Kim II Sung threatens to withdraw from the nuclear non-proliferation treaty.

3-93   In mid March the governor of the Bank of Korea, Cho Soon, is sacked. He is replaced by
          Kim Myung-ho.

5-93   At the end of August the government publishes a five year plan for the reform and
          liberalization of the financial system: (1) complete interest rate deregulation; (2) establish
          a financial futures market; (3) phase out of policy loans; (4) program to bring Korean
          accounting standards up to international levels.

6-93   It is announced that starting in 1994 foreigners will be able to invest directly in convertible bonds and starting on 8-1-93 they will be able to buy unlimited amounts in joint ventures of which foreigners already own 50%.

7-93   Foreigners are permitted to own up to 20 shops and the maximum area is lifted to 3000 square meters per shop.

8-12-93   Kim Young sam declares an emergency decree of "Real names" financial system. Fro this day forward it is illegal to open a bank or brokerage account in other than the real name of the holder. Those already in possesion of false accounts are given months to reveal their identity and register the money under their real name.

3-93   The ceiling on overseas bond issues is raised to $ 1.6B from $ 1B.

6-93   The ministry of finance places a ban on domestic firms issuing bonds overseas.

7-93   The ban on overseas issues is lifted

10-12-93   The real name financial system is scheduled to come into effect but is postponed.

11-1-93   The government moves to the second stage of its interest rate deregulation program; all lending rates except those on policy loans are freed, and 60% of deposit rates are freed.

12-15-93   The Uruguay round of GATT is successfully completed; Korea had to agree to reduction or elimination of tariffs on 253 industrial products.

3-19-94   Kim Il Sung threatens to reduce South Korea to a "Sea of Fire" if provoked too far by Korean, US or UN officials to honor its international obligations in the inspection of nuclear facilities.

3-94   The central bank announces that foreign banks are free to establish branches in Korea once they meet requirements; they must be one of the world's five largest in terms of assets.

4-1-94	manufacturing companies and small and medium sized firms are free to issue unlimited amounts of corporate bonds.
7-8-94	The North Korean leader Kim II sung dies.
10-5-94	It is announced that on 12-5-94 the foreign stock ownership limit will rise from 10 to 12%.

Malaysia: Major Events Since 1984

5-5-86	Elections held. The Christian dominated Parti Berstn Sabah (PBS) retained power. Winning 34 of 48 seats. Expected to bring greater political stability.
9-85	Govt. launches a 2 $M Billion New Investment Fund (NIF) to stimulate investment in priority areas. Resigned to channel funds at low cost into ventures in agriculture, manufacturing and tourism.
8-3-86	Snap general elections held and Prime Minister Dr. Mahathir Mohamad steers the ruling Barison National (National Front) Coalition to victory gaining a mandate for the following five years. Outlook said to be stable with mandate given to coalition.
5-88	Prime Minister announces that the New Economic Policy (NEP) would be temporally suspended in areas where there was no growth and that his government. was considering the exemption of enterprises manufacturing for the domestic market.
5-88	Case brought by Hong Kong govt. against Bumiputra Malaysia Finance (BMF) chairman, Lorrian Esmc Osman, and the former BMF director, Mohammed Mushin Shamsuddin opened in London. The two directors are accused of fraudulently releasing $500 M of bank funds to companies associated with George Tan, the former Land of the Currian group who is currently on trial in Hong Kong. Largest banking scandal in Malaysian history.
9-88	Prime Minister Dr. Mahathir Mohamad announces at 37th address of United Malaysia National organization (UMNO) that the period for implementation of the New Economic Policy (NEP) would be extended beyond its original target of 1990 due to slow down of the economy.

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9-30-86   Foreign interests will be allowed up to 100% equity holding in manufacturing concerns.

1-1-87   Privatization of the telecommunications company is set to go forward it is called Syariland
           Talikom Malaysia (STM).

8-86   23 deposit talking cooperatives (DTCs) suspended in an attempt to deal with a financial
           costs in the sector.

4-24-87   The Prime Minister narrowly maintains his position as head of the United Malaysia National
           Organization in its leadership elections vote of 761 to 718 over Tengku Razaleigh
           Mamzah. The challenge to his leadership was unexpected and was the result of a past
           between former rivals.

7-87   During his visit to the U.K. the Prime Minister announces that he is considering a cast in
           the corporate tax rate.

8-87   The education minister releases a four part plan to held increase employment among
           university graduates.

3-87   Major producers and consumers of natural rubber agreed on a new five year pact aimed
           at stabilizing prices. A new International Natural Rubber Agreement (INRA).

6-87   Malaysia is the first country to sign the new agreement.

10-27-87   Govt. arrests more that 90 people under the International security act (ISA). the prime
           minister says the move is necessary to pre-empt a recurrence of the 1969 race riots
           between the country's politically dominant Malaysians and the majority but economically
           powerful Chinese. The crackdown also led to the closure of 3 newspapers and the
           banning of public rallies. The United Malaysian National Organization (UMNO) had
           planned a Nov. 1 rally to celebrate the party's 41st anniversary. Organizers had expected
           ½ million in attendance and there were fears of a race riot breaking out.

10-23-87   Budget presented to parliament includes a call for an abolition of the 3% excess profits
           tax.

2-4-88   The high court rules that the United Malaysian National Organization, the dominant ruling party in an illegal organization under the country's Societies Act. Implies Prime Minister has no legitimate party although he still retains power. (some of party's branches were not properly registered)

1-28-88   Bank Negara (Central Bank) announces the final stage of a $M 1 Billion rescue plan for the country's Deposit Taking Cooperatives whose operations were frozen in 1986. 588,000 depositors were affected by the freeze.

3-88   Government issues a White Paper (a report) on the 10-87 crackdown that led to 106 arrests and the closure of 3 newspapers. The opposition Democratic Action Party is blamed for bringing the situation to a "critical stage" which was likely to lead to rioting.

4-88   Malaysia and China sign a trade pact. The two nations will grant each other Most Favored Nation treatment in levying duties and other trade related taxes. This means reductions in duties on a number of Malaysian export items: rubber, palm oil, coconut oil are down by 10% (30 to 20); farming and wood products lowered by 50%

8-6-88   Lord President of Supreme Court and country's most senior judge Tun Mohammed Silleh Abbas was dismissed. Seen as remaining obstacle in way of Prime Minister redefining boundaries of political power in favor of the executive.

12-88   Malaysia becomes first Asian country to sign an agreement with Japan on the disbursement of loans under the $US 2 billion Asian-Japan Development Fund (ASDF) announced at the December 1987 Manila Asian summit. Malaysia to receive $M 890million in concessional loans, $M 880 million from the overseas economic cooperation fund (OECF). Loans involve 25 year repayment and 7 year grace period.

11-88   Malaysia and China sign two trade agreements setting up a joint economic and trade commission and providing for investment guarantees. Malaysians hope agreement will encourage Chinese investment and broaden trade between the two countries.

7-26-89   The Malaysian Development Authority announced that restructuring of companies in which foreigners hold a majority stake would not be required after 1990, to previously set

time limit. There had been fears that investment rules allowing foreigners to hold up to 100% equity stakes would be repealed with the expiration of the current phase of the NEP.

10-89   Overseas Petroleum and Investment Corporation (OPIC) a Taiwanese company discovers oil off the east coast of Sarawak.

9-89   Bank Negara (Central Bank) declares that domestic and foreign banks may now purchase limited amounts of shares in local companies. Banks can buy up to 10% of a manufacturers paid-up equity or the equivalent of 5% of the banks paid-up capital and reserves.

10-89   The Malaysian Stock Exchange splits with Singapore as 182 Malaysian firms listed in Singapore forced to immediately delist.

6-18-90   1,000 workers in Japanese-Malaysian Hitachi in consumer products went on strike in protest against not being allowed to join The National Electrical Industry Workers Union (EIWU). Government policy only allows in-house unions.

6-90   Telecommunications minister, Sammy Vella announces that up to 25% of Malaysia's National Electricity Board will be available to foreign investors. A fund is set up be September and company privatized by March 1991.

10-90   Prime Minister Matahir's Barisan Nasional (BN, National Front) coalition retains power with a 2/3 majority in the election, winning 727 of 180 parliamentary seats.

6-91   The second outline perspective plane (OPP2) is approved by Parliament. Outlines economic plan for 1991-2000. It has a notable absence of mention of equity ownership targets for the Bumiputras population and a new emphasis on the creation of Bumiputra commercial and industrial community.

11-91   The new Minister of Finance Dutak Sen Answar Ibustion, presents 1992 budget. It includes a major revision of investment incentives. Several incentives previously given to manufacturing are withdrawn (i) pioneer companies no longer exempt from 30% corporate tax. (ii) maximum tax allowance on investment reduced to 60% from 100%.

1-92	Government announces that manufacturing companies would be allowed to employ foreigners in all skill categories. Estimates place manual labor shortage at approximately 50,000-80,000.
1-92	Government reclassifies four wheel drive vehicles as passenger cars this implies an increase in import duty from 5% to 42%.
Q4-92	Import duties on 600 items reduced by between 10% and 30%. Items include: food stuffs, household goods, clothing, electrical and electronic goods and components for electrical goods.
1-93	Malaysia begins to cut tariffs on products such as vegetable oils, and pharmaceuticals as agreed under ASEAN Free Trade Area scheme.
4-93	Government issues a set of procedures for employers wanting to hire illegal immigrants. Employers allowed to hire detained illegal and obtain permits for illegal already working.
4-93	Government announces that it will accede to the GATT agreement on barriers to technical track. Also signed bilateral trade agreement with Iran with aim of increasing bilateral trade by as much as $200 million annually.
6-93	U.S. imposes a 6.6% duty on stainless steel tubing from Malaysia
Q4-93	Import duties on more than 500 items are reduced or abolished (135 food items, 100 types of building material, 79 types of components and medical equipment, 444 items of motor vehicle spare parts).
12-94	Bank Negara lifts ban on the sale of long term money instruments to non- residents.
11-94	Bank Negara Lifts ban on holdings by overseas investors of Ringgit Debt instruments of less than 12 months maturity.

Philippines: Major Events Since 1984

10-12-84	The IMF and the Philippines reach an agreement on a stand by loan.

5-85	The Philippines signs a debt rescheduling and refinancing agreement with the steering committee representing 483 creditor banks.
8-85	The first tranch of new credits from the commercial banks is released $ 925M.
9-85	The prime minister admits the country will have trouble meeting the IMF deficit target.
1-10-86	An agreement covering $ 2.9B of public sector debt is signed in New York with the international creditor banks; payments falling due between 10-17-83 and 12-31-86 is rescheduled as a 10 year loan with a five year grace period.
2-14-86	Marcos is "declared" the winner in the presidential election; the Catholic Bishops Conference claims Marcos won through ballot fraud. Marcos is overthrown and flees the country toward the end of February. Corazon Asquino takes office.
5-86	Import restrictions are lifted on 839 products.
7-6-86	Arturo Tolentino, Marcos' vice-presidential running mate, declares himself acting president in Aquino's absence (she is out of the country). He rounds up 500 troops and attempts to overthrow the government but fails.
8-86	Talks begin with the IMF on a new stand by credit.
9-86	The IMF approves a stand by credit of $ 300M and a $ 200M compensatory financing facility.
9-86	Import controls are lifted on 80 items including steel and paper products.
10-86	In early October defense minister Juan Ponce Enrile declares that Aquino has forfeit her presidential mandate and calls for new elections. he says her right was forfeit when she declared a revolutionary government and provisional constitution.
1-22-87	The marines guarding the presidential palace fire on a land reform demonstartion of 10,000 people; 15 are killed and 100 wounded. About 1 week later a group of 300 army men take over a television station as they try to stage a coup.

1-87	In late January the Paris Club agrees to reschedule $ 870M of debt due in in the 18 month period up to June 1988.
2-2-87	76% of the population votes "yes" on the new constitution.
3-87	An agreement is reached with the commercial banks on a $ 10.5B debt rescheduling; medium and long term credit is converted to dollar denominated zero coupon bonds with six year maturity at an interest rate of .875 over LIBOR.
3-87	The World Bank approves a $ 300M economic recovery loan to be used to support tax reform and trade liberalization.
4-87	The Philippine Long Term Equity Fund is established $ 20M.
5-11-87	22 of 24 seats in the senate are won by Aquino backed candidates.
7-87	The "revolutionary" period of Aquino's rule comes to an end as an elected legislature and popularly approved constitution take effect.
7-22-87	Aquino approves a comprehensive agrarian reform program consisting of the sale of government land to the public and the purchase from plantation owners for resale in smaller packets.
8-87	800 dissident troops stage a coup attempt against Aquino's government. The junta attacks 6 different points in Manila; there is 18 hours of fighting as 55 are killed and 300 wounded.
12-22-87	The commercial banks sign the debt rescheduling agreement reached in March.
2-8-88	landowners are required to register their land for the land reform program.
6-8-88	It is announced that the National Steel corporation will be listed on the stock exchange.
6-88	Congress approves Aquino's Comprehensive Agrarian reform Program (CARP).

9-88   Shearson, Lehman, Hutton and the IFC and 7 other US firms launch a $ 65.5M fund to serve for investment in Philippine equity through debt conversion.

9-88   Aquino approves the sale of shares in the Manila Electric Company (Meralco) held by the Philippines Development Bank.

11-86   Negotiations begin with the IMF on extended fund and contingent financing facilities; import liberalization is to be part of the package.

1-89   The IMF accepts the Philippine plan.

5-89   The IMF formally approves of the Philippine Mobilization plan; the Paris Club agrees to reschedule $ 2.2B in debt service.

6-89   The Philippines National Bank is privatized.

8-7-89 The Philippines begin discussion on a Brady deal; agreement is reached on 8-16-89.

11-89   The First Philippine Fund is launched.

12-1-89 A section of the armed forces launches a coup attempt on Aquino's government. They seize an air force base, an army camp, and two television stations before the revolt is put down.

5-90   A spate of bomb explosions occur in Makati, the Manila financial district.

6-90   The cabinet approves an economic reform package: (1) abolition of price controls; (2) relaxation of controls on foreign investment; (3) deregulation of financial markets; (4) accelerated privatization; (5) reductions in import tariffs.

7-10-90 Two arms of the security forces engage in a gun battle in Makati.

7-13-90 There are more bombings in Manila; Cobra claims responsibility.

7-16-90	An earthquake registering 7.7 on the Richter scale rocks Manila and its northern outskirts.; 1,600 people are killed and the damage is estimated at between P 15B and P 20B.
8-18-90	There are four bomb attacks in two days targetting businesses owned by supporters of the president.
10-3-90	Two groups of 300-400 soldiers led by Colonel Alexander Noble take control of two army camps; the coup attempt is put down after a couple of days.
2-21-91	The IMF approves a $ 905M financing package.
3-91	The Foreign Investment Act of 1991 receives its final rasing in the senate; it calls for 100% equity participation in any sector.
6-91	Approximately one million people are displaced as Mount Pinatubo erupts. Three regions, Pampanga, Zambales, and Tarlac are effected; estimates say if all production there stops GDP will fall by 2%.
8-27-91	The US and the Philippines sign a treaty of friendship, cooperation and security as the US Navy receives a 10 year extension on the use of Subic Bay. Four other US facilities are to be handed over to the Philippines by mid September.
8-91	Tariff reductions are put in motion; the effective tariff rate is to fall to 21% by July 1995.
11-91	21.6 million shares of the Manila Electric Company are sold.
1-30-92	Philippine Airlines goes to the auction block; 67% of equity is offered to the private sector for $ 256M.
1-92	The foreign exchange rules are liberalized: (1) an individual may posses foreign exchange in any amount and is not required to surrender it to the bank for pesos; (2) any Filipino may take an unlimited amount of foreign exchange out of the country provided the money has not been purchased from the banks; (3) the ceiling on foreign exchange that can be bought from the banks and taken out of the country is increased to $ 5,000; (4) foreign

investors no longer need central bank approval to repatriate profits; (5) Filipinos can freely open foreign exchange deposits.

2-92 The IMF approves the Philippines economic performance and clears the way for a $ 5.3B loan rescheduling.

2-92 The Philippines reach an agreement in principle with the commercial banks for a $ 5.3B Brady deal.

3-92 The amount of dollars that exporters can borrow from foreign exchange deposits without prior approval is raised from 50 to 70% of letters of credit and purchase orders.

5-11-92 Fidel ramos is elected president with 24% of the vote in a seven candidate race; he is expected to maintain IMF endorsed policies.

5-92 The stock exchanges in Manila and Makati are merged.

5-92 The buy back of $ 1.3B of commercial debt completes the first part of the Brady deal.

6-92 17.8 % of Union Bank, a commercial bank rescued by takeover under Marcos, is sold to the private sector.

6-92 An agreement on the rescheduling of $ 702M in credits with the Japanese government is signed.

7-24-92 Representatives of the government and the commercial bank creditors sign the Brady debt relief arrangement agreed to in February.

7-92 Restrictions on the methods of financing imports related to the nature of the transaction are removed. The number of import classifications is reduced from five to three: (1)freely imported; (2) regulated; (3) prohibited. Quantitative restrictions are removed for over 100 items.

7-92 the number of days in which export proceeds must be remitted is doubled to 180 days.

8-15-92   All controls are lifted on foreign exchange transactions involving exports, imports and dollar retention and remittance. There are no more restrictions on the amount of Philippine currency that can be brought in or out of the country. Filipinos may hold accounts abroad. Filipinos may buy up to $ 1M in foreign exchange for investment abroad without approval.

1-93   The central bank restarts its debt for equity swap program.

2-93   The government announces a plan to auction a 13% stake in Philippine Airlines.

4-93   Negotiations with the IMF begin on an extended fund facility.

7-93   The government begins to sell off its interest in the country's copper smelting company.

8-93   The committee on privatization approves the sale of 87% of the equity in Philippine shipyard and Engineering.

11-93   Privatization of the National Steel Corporation is approved.

1-94   In late January an agreement is reached in principle with the IMF on a three year program $ 650M.

2-94   In early February an agreement is reached on the sale of 40% of the equity in the government owned Petron Corporation $ 502M.

3-94   An investment company collapses after traders abscond leaving P 388M in treasury bills undelivered.

5-18-94   The terms of entry and participation for foreign banks is liberalized: (1) up to ten banks may enter the country in the next five years; (2) at least 70% of the banking system's total resources must be owned by Philippine entities; (3) the bank must be in the top 5 of the country of origin.

8-94   The IMF approves a 3 year loan of $ 680 M from its extended fund facility.

6-94   The 40% ceiling on foreign equity is removed in many sectors.

7-94   The Paris Club reschedules $ 469M worth of debt; 1 billion shares (P 25.5B) of Petron are put on the market.

Taiwan: Major Events Since 1984

1-1-85   The import duty is reduced from 20 to 15%.

4-1-85   The government allows major banks to set their own prime rates within a sepcified government band.

5-85   The ministry of finance approves 3 indirect stock investment funds from abroad.

12-85   The government announces that financial institutions, corporations and individuals can invest in foreign government securities and bank financial instruments.

4-86   Foreign equipment leasing firms are allowed to hold 90% of equity of a Taiwanese leasing venture.

7-86   The Board of Foreign Trade announces that bans have been lifted on 63 categories of imports.

8-18-86   Foreign exchange licensing is abolished; businesses can freely import and export without approval from the central bank; firms earning foreign exchange are no longer required to deposit allo of their earnings with a designated bank or to sell them to the central bank.

10-6-86   The export import bank offers to insure overseas investments against confiscation by foreign governments.

11-86   The maximum import tariff is reduced from 87.5% to 57.5%; the duty on industrial raw materials is abolished.

12-86   The Taiwan Fund Inc. is established $ 25M.

3-4-87   More than 400 tariff cuts are announced on items ranging from steel plates and pesticides to video game machines.

3-87   The quota of US investment companies allowed is raised.

3-87   Restrictions are imposed on capital inflows; commercial remittances of more than $ 1M and individual remittances of more than $ 10,000 require central bank approval.

4-18-87   tariffs are reduced on 862 consumer, agricultural and industrial goods.

4-87   Tariff cuts are announced on 862 items; cuts exceed 50% on more than four hundred items; 150 items have tariff cuts between 10 and 15%.

5-31-87   The government freezes banks' foreign borrowing at the level prevailing on that day.

6-15-87   Tariffs are reduced on 331 items.

7-14-87   Martial law is lifted.

7-87   Plans for tariff reductions on over 200 farm items is announced.

10-87   The Executive Yuan announces that starting in January of 1988 it is cutting tariffs on 3,500 items. The duty on sedan cars is cut from 55% to 42.5%.

12-31-87 The chairman and 3 members of a Taipei brokerage are arrested for their involvement in an illegal margin lending racket.

1-1-88   The 40 year embargo on new newspapers is lifted.

1-13-88   President Chiang Ching-Kuo dies of heart failure at the age of 77. Lee teng-hai takes over as president.

1-88   The government announces plans to list shares of China Petrochemical Corporation on the Taipei Stock exchange. The total capitalization is NT$ 6.4B and 20% of the shares are to be offered.

1-88 The securities and exchange law is revised permitting new stock brokerages to be formed and permitting foreign brokers to open branch offices.

4-88 President Lee suggests that the government banks be privatized.

5-88 The executive Yuan approves a plan to grant new licenses for securities firms and to allow foreigners to invest in securities houses.

8-88 The finance ministry announces a plan to allow foreign insurance companies to invest directly in the Taiwan Stock Exchange.

9-88 The government imposes a capital gains tax; the finance minister announces that as of January 1, 1989 a .3% tax will be imposed on profits of transactions exceeding NT$ 3M a year.

10-3-88 The capital gains tax is reduced to .15%.

11-88 The government announces a plan to privatize 10% of its holding in China Steel Corporation.

3-89 180 million shares of China Steel Corporation is placed on the market.

4-3-89 The central bank eases control over the exchange rate: (1) 2.25% limit on daily fluctuations abolished; (2) the weighted central bank exchange rate is to be abolished. formerly decreed by the central bank it is now to be determined by five government banks and four foreign banks.

5-89 Prime minister Yu Kuo-hwa steps down and is succeeded by Lee huan. The central bank governor also steps down.

5-89 Vietnam, Cambodia, Laos and Cuba are taken off the banned list for direct trade.

7-11-89 A banking reform bill is passed: (1) flotation of 51% of Taiwan's state controlled commercial banks; (2) legalization of granting of bank licenses to an unlimited number of private sector banks; (3) easing of access for foreign banks to the Taiwan market.

8-89   The executive Yuan adds ten names to the list of state owned enterprises to be privatized.

9-89   The maximum inflow remittances allowed by local residents is raised to $ 500,000.

11-89:   The maximum inflow remittances allowed by local residents is raised to $ 1,000,000.

1-90   Taiwan applies for membership in GATT.

1-90   The government announces that the privatization of 3 banks is set to take place in the first
         half of the year.

5-29-90 A new prime minister, Han pei-tsun is elected.

8-90   Tariffs are cut on 1,813 import items lowering the average rate to 8.87%.

9-90   In late September the Labor Insurance Fund (pension fund) is granted permission to
         invest up to 20% of its NT$ 43B in assets in the stock market.

9-90   The government announces that foreign institutional investors will be allowed to invest
         directly in the stock market instead of just through the 4 large mutual funds established in
         1985.

4-10-91 The Commission of National Corporations announces that it will sell 377 million shares in
         the state run China Steel Industry.

4-30-91 President Lee Teng-hui proclaims the ending of National Mobilization for Suppression of
         Communist Rebellion; China is now recognized as a political entity.

6-26-91 15 new private banks are licensed to begin operations.

3-11-92 The minister of finance Wang Chien-Shien approves Taiwanese companies to issue
         Global Depository Receipts.

5-92   the government sells off NT$ 680M worth of China Steel.

10-7-92   The finance minister Wang Chien-Shien resigns after President Lee Teng-hui compromised his proposal increased taxation on land sales; the 1990 stock market collapse propmpted property market speculation and the minister wanted to tax this.

1-93   The government announces that 9 of 10 remaining government companies are to be privatized within the next five years.

1-14-93   Taiwan passes trade laws to enable it to enter GATT.

2-10-93   Lien Chan replaces Han Pei-tsun as prime minister.

11-25-93   The finance ministry announces that it is going to raise the foreign ownership limit from 5 to between 10 and 15% for a single entity; the total foreign ownership limit will be raised to between 20 and 30%. Also, all limits on outward remittances of principal and capital gains will be abolished.

12-9-93   Vincent Siew, chairman of the Council for Economic Planning and development says Taiwn has to prepare steps to cope with the international trend toward liberalizing rice imports.

2-24-94   In an attempt to enter GATT Taiwan promises to: (1) cut tariffs on imports by an average of 100%; (2) abolish alcohol and tobacco monopolies and establish taxes on these items at levels prevailing in other countries; (3) open construction projects in the six year national development plan to foreign bids.

3-94   The government offers 288 million shares in the China Steel Corporation; the ceiling on foreign investment is doubled to $ 10B.

5-94   The Chung Kuo insurance company is privatized.

6-20-94   The China Petrochemical Development Corporation is privatized.

6-94   The ministry of finance approves the establishment of foreign banks in Taiwan either as joint ventures or wholly owned subsidiaries of foreign banks; foreigners are permitted to open accounts in local currency.

7-1-94   The Council for Economic planning and Development announces that foreign investment will be permitted in some service sectors.

7-94   The governor of the central bank announces that the limit on foreign ownership in the stock market will be raised.

8-94   Y C Huang director general of the Board of Trade says that the tariff on industrial goods will fall to 45 on admission to GATT.

8-5-94   The government lifts a ban on the import of 138 items from China.

10-94   Chen Wu-hsiung, director of the economics and planning department says that the average tariff on farm produce will fall to 15.98% when Taiwan joins GATT.

10-94   A stock market scandal erupts when there is a payment default on NT$ 7B of share payments by 15 locally owned brokerage houses.

Thailand: Major Events Since 1976

10-76   The Seni government is overthrown by a military coup and Thanin Kraivichien is installed as the new prime minister; Kraivichien is seen as distinctly anti-labor.

3-77   A coup attempt is made on the Thanin government.

10-20-77   In a bloodless coup Thanin Kraivichien is overthrown by Sanyad Chalaryoo. General Krianysak Chamanand is appointed prime minister.

5-78   A capital gains tax of 10% is introduced on profits from share dealing.

10-5-79   A trade agreement is signed with Australia that allows for mutual preferential treatment.

10-19-79   A trade agreement is signed with China.

12-79   Thailand goes to the IMF for short term credits.

4-80   Prime minister Krianysak Chamanand resigns and is replaced by Prem Tinsulanond; talks
            with the IMF break down and $ 600M stand by credit does not come through.

1-81   the ban on strikes and lockouts is lifted.

4-81   A group of young military officers attempt to overthrow Prem. The coup is unsuccessful
            and Prem is praised for his handling of the crisis.

4-81   The corporate tax rate is lowered by 5 points to 30% for companies listed on the stock
            exchange and 40% for those not listed. The tax credit on for listed companies is raised
            from 25 to 35%.

5-81   Thailand goes to the IMF for a stand by credit; the Baht is devalued by 1%.

7-81   The Baht is devalued by 9%.

2-82   The personal income tax is lowered but the business tax on foreign exchange transactions
            is raised from 10 to 15%.

10-82   The World Bank president announces a second structural adjustment loan for Thailand.

11-82   Thailand joins GATT

9-83   A freeze on wage increases is imposed by the National Minimum wage committee.

11-2-84   The Baht is devalued by 14.8%.

11-6-84   The cabinet bans Chit funds. Chit funds are essentially a pyramid scheme run in the
            informal credit market by Chamoy Thipso, the wife of an airforce officer.

10-31-84   Price controls are imposed.

11-1-84   The 20% surcharge on imports is removed.

9-9-85   A small group in the Thai military stages an unsuccessful coup attempt.

9-9-85   The Thai Fund is launched by Merrill Lynch $ 30M.

3-86   The Chit fund scandal emerges again as the extent of a second major operation is revealed.

5-1-86   The government of General Prem Tinsulanon is defeated in parliament on a series of votes concerning Prem's proposed economic reforms; Prem dissolves the government and calls for a general election on July 27th.

7-27-86   The democrats retain power in the House of Representatives elections and General Prem Tinsulanon remains in power as prime minister.

10-86   Siam City Bank comes under pressure as it becomes clear that it can't cover its bad loans; the episode raises questions of more widespread banking problems.

12-86   A tax reform package is announced that will take effect in the new year: (1) a maximum of 15% tax of capital gains on dividends and debentures; (2) the business tax is lowered from 9 to 7% for a range of labor-intensive and agro-intensive industries; (3) the export industry business tax is lowered to .1%.

12-86   The government announces that it will privatize the operation of three large ports: Laem Chabang, Phuket, and Songkhla.

12-86   Import duties are reduced from between 20 and 25% to 10% on telephone components, vitamins for animal food, graphite moulds, and copper luminates for integrated circuits.

12-86   The Thailand Fund $ 30M is established by Citibank affiliate Vickers de Costa.

2-87   General Chaovalit Yongchaiyut begins calling for a revolution to create a political system which would better serve the people's interests and bring about economic and social reforms.

2-87   The US imposes a 2.75% anti-dumping tariff on Thai exports of pipe fittings; these exports were worth $ 3.1M in 1985.

7-87   The economic ministers of ASEAN agree to extend the existing preferential trading agreement; the list of items is expanded to 18,000.

11-30-87 At the end of the parliamentary session the four parties composing the base of Prem's government begin to fragment.

4-88   At the end of April Prem Tinsulanon dissolves parliament and calls for fresh elections scheduled for July.

7-88   General Chartchai Choonhavan wins the election and becomes prime minister. He issues a statement at the end of August indicating his commitment to Prem's economic policies of fiscal stability and decentralization of industry.

8-88   Chartchai Choonhavan takes office.

11-88   The UK based Thailand International Fund begins operation with an initial purchase of Baht 200M in shares.

1-89   The ceiling on private sector foreign borrowing is raised to $ 1.2B.

2-89   The US places a countervailing duty on Thai pipe fittings.

3-89   In late March the US places a duty on miniature ball bearings produced by Thailand.

7-89   The opposition party launches a no confidence vote against four government ministers and charges of corruption emerge as some officials are accused of vote buying.

1-90   Labor leaders call a strike to protest privatization as the government moves to place the Laem Chabang deep water port in private hands.

2-90   150 logging workers are arrested for clearing land that was marked for reforestation; they are employees of a company owned by a democratic senator Damnern Chanwanit. The ruling party's shaky hold comes under pressure.

3-90   General Chaovalit Yongchaiyuth retires from the armed forces at the end of the month to become deputy prime minister.

3-90   The finance minister raises the ceiling on loans to 16.5% for commercial banks and 19.5% for other institutions; the central bank governor is sacked and replaced by Chavalit Thanachanan who resolves to liberalize the Thai monetary system.

6-11-90   general Chaovalit Yongchaiyuth resign his post as deputy prime minister and defense minister after just two months in office after some corruption charges are brought against him.

6-27-90   Prime minister Chartchai Choonhavan sacks or moves a total of 20 ministers.

9-90   Senior officials in the Thai Chairty party become involved in a row over a Baht 150B telecommunications project.

12-17-90   Chartchai reshuffles his cabinet again

2-23-91   the first successful coup since 1977 is launched. Chartchai is arrested at the airport and 22 cabinet members have their assets frozen pending investigation of corruption allegations. General Suathorn Kongsompong is named head of the Junta and martial law is imposed.

3-1-91   An interim constitution is approved and Anand Panyarachun is named caretaker prime minister; he promises continuity on economic policy.

3-91   at the end of March the National Peace Keeping Council pushes 2 bills through the legislative assembly making unions illegal within state enterprises. workers may form associations but they have no right to strike.

4-1-91   The public is allowed to buy, sell and transfer large amounts of foreign exchange with less documentation and to posses, deposit and borrow foreign currencies: (1) accounts of up to $ 500,000 per person are allowed ; (2) no restrictions on the amount to Thai or foreign currency brought in; (3) up to Baht 50,000 may be taken out; (4) no restrictions on capital investment, foreign borrowing or repatriation of investment funds, dividends and profits.

4-4-91   The interim government of Anand Panyarachun lays out its economic plan. There is an emphasis on liberalization of the financial sector and privatization.

4-15-91   payments into the social security system begin.

5-91   At the beginning of May martial law is lifted in all areas except the districts bordering Cambodia and Burma.

6-91   In mid June the AFL-CIO asks George Bush to remove all Thailand's trade privileges because of the National Peace Keeping Council's ban on unions in state enterprises.

7-91   The import tax on completely knocked down vehicles (ones for assembly) is reduced to 20%. The total tax on completely built vehicles falls to 60%.

8-91   The "elder statesman" of the National Peace Keeping Council Chaovalit Yongchaiyuth calls for elections.

9-91   A bill is passed which will allow all companies to issue bonds.

9-91   The tension increases between the National Peace Keeping Council and the government as prime minister Anand announces that the military should consider a cut in its numbers in line with the new world political situation.

12-91   A new constitution is passed.

3-22-92   Elections are held but no party can claim decisive victory. Since no party hes a dominant positionGeneral Suchinda Kraprayoon is appointed prime minister by King Bhumibol. Kraprayoon appoints several members of the former Chartchai government who had been under investigation for being "unusually rich".

5-18-92 The military opens fire on protestors in Bangkok; 10 people are killed and dozens are injured.

5-23-92 Suchinda resigns.

5-25-92 Parliament passes constitutional amendments.

5-24-92 Meechai Ruchapan is named interim prime minister.

6-92 King Bhumibol appoints Anand Panyarachun interim prime minister to oversee the new elections.

8-92 The Petroleum authority of Thailand begins the process of partial privatization with the announcement of a Baht 1.08B share issue.

9-13-92 The democrats gain a narrow victory in the election and name Chuan Leekphai as their prime minister.

10-21-92 Prime minister Chuan Leekphai announces his economic plan, vague ramblings about equalizing income ditribution through ioncreased rural spending.

11-20-92 Song Watcharasirot and his associates are arrested for manipulating the stock market after buying 20% of the shares of the Bangkok Bank of Commerce.

4-93 First City Investments, a finance company charged with share manipulation.

9-94 The Association of South East Nations (ASEAN) economic ministers meet and agree to cut the timetable for establishing a common effective preferential tariff scheme from 15 to 10 years.

Appendix B

The Full Table of Granger Causality Test and Cointegration Test

**Table B.1. The Granger causality test of the stock market quality and
the level of stock market integration**

The granger causality models (equation 22 through 31) are performed to study the relationship between degree of market integration and the quality of stock market. The results from the estimation are mixed.

Hong Kong

a				b			
lag 1	lag 2	Lag 3	lag 4	lag 1	lag 2	Lag 3	lag 4
Granger causality between *liquidity* and *degree of stock market integration*							
Equation 22 : $\lambda_t = \Sigma a_i \lambda_{t-i} + \Sigma b_i \alpha_{t-i}$				Obs = 75		$R^2 = 0.4105$	
0.3931	0.3559	0.1514	0.0085	-2.8426	1.2684	1.6384	-1.0567
(3.4715**)	(3.8491**)	(1.6293)	0.0970)	(-2.5645)	(0.9954)	(1.2669)	(-0.8758)
Equation 23 : $\alpha_t = \Sigma a_i \lambda_{t-i} + \Sigma b_i \alpha_{t-i}$				Obs = 68		$R^2 = 0.2387$	
0.0161	2.20e-04	0.030	-0.0179	0.2795	0.3355	0.0331	0.0835
(1.221)	(0.0210)	(0.2778)	(-1.8118)	(2.0682**)	(2.2689**)	(0.2289)	(0.6151)
Granger causality between *volatility* and *degree of stock market integration*							
Equation 24 : $m_t = \Sigma a_i m_{t-i} + \Sigma b_i \alpha_{t-i}$				Obs = 68		$R^2 = 0.7863$	
1.1142	-0.1853	0.0661	-0.0738	17.9321	-9.2998	-1.3164	-3.3700
(10.5973**)	(-1.0999)	(0.5019)	(-0.6736)	(1.8079*)	(-0.8872)	(-0.1242)	(-0.3445)
Equation 25 : $\alpha_t = \Sigma a_i m_{t-i} + \Sigma b_i \alpha_{t-i}$				Obs = 62		$R^2 = 0.2063$	
-0.0024	0.0035	-0.0032	0.0019	0.3080	0.2623	0.0060	0.0294
(-1.6887*)	(1.5445)	(-1.3749)	(1.269)	(2.3352**)	(1.8588*)	(0.0399)	(0.2210)
Granger causality between *liquidity* and *likelihood of stock market integration*							
Equation 26 : $\lambda_t = \Sigma a_i \lambda_{t-i} + \Sigma b_i \phi_{t-i}$				Obs = 114		$R^2 = 0.3301$	
0.2275	0.3700	0.1933	-0.0732	8.8707	-2.7172	5.6356	-0.0181
(2.3403**)	(3.7740**)	(1.9809**)	(-0.7589)	(0.6080)	(-0.1619)	(0.3770)	(-0.0012)
Equation 27 : $\phi_t = \Sigma a_i \lambda_{t-i} + \Sigma b_i \phi_{t-i}$				Obs = 113		$R^2 = 0.3560$	
1.22e-04	-4.40e-04	-4.13e-05	4.20e-04	0.2756	0.2591	0.1896	0.2718
(0.1941)	(-0.6990)	(-0.0659)	(0.6789)	(2.9373**)	(2.7019**)	(1.9760**)	(2.8847**)
Granger causality between *volatility* and *likelihood of stock market integration*							
Equation 28 : $m_t = \Sigma a_i m_{t-i} + \Sigma b_i \phi_{t-i}$				Obs = 107		$R^2 = 0.72663$	
1.0308	-0.2034	0.0958	-0.1340	42.4020	24.1660	-49.1717	58.7140
(10.3850**)	(-1.4283)	(0.6721)	(-1.3400)	(0.4268)	(0.2382)	(-0.4863)	(0.5936)
Equation 29 : $\phi_t = \Sigma a_i m_{t-i} + \Sigma b_i \phi_{t-i}$				Obs = 106		$R^2 = 0.3601$	
1.84e-05	4.27e-05	2.75e-05	-5.66e-05	0.2870	0.2550	0.1912	0.2731
(0.1697)	(0.3073)	(0.1968)	(-0.5801)	(2.7472**)	(2.5752**)	(1.9368*)	(2.8233**)
Granger causality between *liquidity* and *volatility*							
Equation 30 : $\lambda_t = \Sigma a_i m_{t-i} + \Sigma b_i \lambda_{t-i}$				Obs = 108		$R^2 = 0.3033$	
-0.0116	-0.0021	-0.0051	0.0173	0.2574	0.4685	0.2686	-0.0065
(-0.6942)	(-0.0857)	(-0.2078)	(1.1207)	(2.5953**)	(4.3733**)	(2.3853**)	(-0.0583)
Equation 31 : $m_t = \Sigma a_i m_{t-i} + \Sigma b_i \lambda_{t-i}$				Obs = 107		$R^2 = 0.7768$	
1.1011	-0.3549	0.2215	-0.1429	2.5003	-1.2038	0.7350	-0.5637
(11.0383**)	(-2.4125**)	(1.5112)	(-1.5532)	(4.2376**)	(-1.8864*)	(1.0938)	(-0.8505)

a				b			
lag 1	Lag 2	Lag 3	Lag 4	lag 1	lag 2	Lag 3	lag 4
Granger causality between *liquidity* and *degree of stock market integration*							
Equation 22 : $\lambda_t = \Sigma a_i \lambda_{t-i} + \Sigma b_i \alpha_{t-i}$				Obs = 76		$R^2 = 0.6725$	
0.6340	-0.0763	0.3948	0.0808	0.2984	1.6665	3.1542	-2.2764
(4.9987**)	(-0.6313)	(2.6334**)	(0.5738)	(0.0705)	(0.3617)	(0.7383)	(-0.6120)
Equation 23 : $\alpha_t = \Sigma a_i \lambda_{t-i} + \Sigma b_i \alpha_{t-i}$				Obs = 66		$R^2 = 0.5239$	
0.0035	-0.0063	0.0053	-0.0036	0.3840	0.4297	0.0025	0.1107
(0.8634)	(-1.3107)	(1.1566)	(-0.6405)	(2.3836**)	(2.4642**)	(0.0174)	(0.9466)
Granger causality between *volatility* and *degree of stock market integration*							
Equation 24 : $\varpi_t = \Sigma a_i \varpi_{t-i} + \Sigma b_i \alpha_{t-i}$				Obs = 69		$R^2 = 0.8283$	
1.0937	-0.2634	0.1456	-0.0115	1.4959	-7.3440	-3.0465	-6.4813
(9.4111**)	(-1.3454)	(0.7240)	(-0.0925)	(0.1780)	(-0.6133)	(-0.3601)	(-0.8477)
Equation 25 : $\alpha_t = \Sigma a_i \varpi_{t-i} + \Sigma b_i \alpha_{t-i}$				Obs = 61		$R^2 = 0.5319$	
-0.0011	0.0013	0.0017	-0.0018	0.3614	0.4350	0.0510	0.0724
(-0.5716)	(0.4054)	(0.5361)	(-0.9053)	(2.3745**)	(2.4967**)	(0.3517)	(0.5922)
Granger causality between *liquidity* and *likelihood of stock market integration*							
Equation 26 : $\lambda_t = \Sigma a_i \lambda_{t-i} + \Sigma b_i \phi_{t-i}$				Obs = 114		$R^2 = 0.7231$	
0.6330	0.0306	0.3281	0.0029	-124.1140	-192.1545	-10.6100	331.0399
(6.8839**)	(0.2930)	(3.0573**)	(0.0264)	(-1.5255)	(-2.4906**)	(-0.1377)	(4.1656**)
Equation 27 : $\phi_t = \Sigma a_i \lambda_{t-i} + \Sigma b_i \phi_{t-i}$				Obs = 113		$R^2 = 0.1740$	
1.26e-04	1.42e-04	-2.11e-04	-2.55e-05	0.1048	0.2627	0.2733	0.3582
(1.1956)	(1.1495)	(-1.7177*)	(-0.2202)	(1.1253)	(2.9793**)	(3.1028**)	(3.9068**)
Granger causality between *volatility* and *likelihood of stock market integration*							
Equation 28 : $\varpi_t = \Sigma a_i \varpi_{t-i} + \Sigma b_i \phi_{t-i}$				Obs = 107		$R^2 = 0.8174$	
1.1622	-0.2429	-0.0968	0.0464	384.6277	-544.3462	-372.1330	583.3766
(12.0756**)	(-1.6515*)	(-0.6535)	(0.4636)	(1.9843**)	(-2.7708**)	(-1.9154*)	(2.9250**)
Equation 29 : $\phi_t = \Sigma a_i \varpi_{t-i} + \Sigma b_i \phi_{t-i}$				Obs = 106		$R^2 = 0.1424$	
-9.64e-05	5.49e-05	-.83d-05	-4.64d-05	0.1164	0.3437	0.2259	0.3072
(-2.0624**)	(0.7680)	(1.3659)	(-0.9512)	(1.2486)	(3.5995**)	(2.3937**)	(3.1318**)
Granger causality between *liquidity* and *volatility*							
Equation 30 : $\lambda_t = \Sigma a_i \varpi_{t-i} + \Sigma b_i \lambda_{t-i}$				Obs = 108		$R^2 = 0.6770$	
-0.0560	0.1196	-0.0208	-0.0170	0.6281	0.0052	0.2095	0.0722
(-1.2910)	(1.7808*)	(-0.3053)	(-0.3838)	(6.2087**)	(0.0432)	(1.7817*)	(0.6655)
Equation 31 : $\varpi_t = \Sigma a_i \varpi_{t-i} + \Sigma b_i \lambda_{t-i}$				Obs = 107		$R^2 = 0.7859$	
1.1825	-0.2840	0.0266	0.0095	0.5620	-0.3542	-0.0170	8.96e-04
(11.7684**)	(-1.8179*)	(0.1685)	(0.0911)	(2.3935**)	(-1.2827)	(-0.0602)	(0.0036)

a				b			
lag 1	lag 2	Lag 3	lag 4	lag 1	lag 2	Lag 3	lag 4
Granger causality between *liquidity* and *degree of stock market integration*							
Equation 22 : $\lambda_t = \Sigma a_i \lambda_{t-i} + \Sigma b_i \alpha_{t-i}$				Obs = 71		$R^2 = 0.2757$	
0.5788	0.0618	0.2424	0.0968	0.9736	-0.7268	-0.5772	0.4333
(4.4916**)	(0.4188)	(1.5665)	(0.6715)	(1.2154)	(-0.9029)	(-0.6848)	(0.5634)
Equation 23 : $\alpha_t = \Sigma a_i \lambda_{t-i} + \Sigma b_i \alpha_{t-i}$				Obs = 66		$R^2 = 0.2092$	
0.0277	-0.0122	-0.0394	0.0274	0.4184	0.1651	-0.0146	-0.0141
(1.2753)	(-0.4773)	(-1.5281)	(1.1656)	(3.1677**)	(1.2163)	(-0.1052)	(-0.1123)
Granger causality between *volatility* and *degree of stock market integration*							
Equation 24 : $\varpi_t = \Sigma a_i \varpi_{t-i} + \Sigma b_i \alpha_{t-i}$				Obs = 71		$R^2 = 0.7881$	
1.1393	-0.3174	0.1404	-0.0431	-2.4279	0.6463	11.4116	-5.5983
(9.1601**)	(-1.6315)	(0.7517)	(-0.4115)	(-0.3356)	(0.0883)	(1.5906)	(-0.8340)
Equation 25 : $\alpha_t = \Sigma a_i \varpi_{t-i} + \Sigma b_i \alpha_{t-i}$				Obs = 66		$R^2 = 0.3277$	
-0.0068	0.0111	-0.0082	0.0040	0.5209	0.0348	-0.0355	0.0625
(-3.1687**)	(3.2641**)	(-2.5606**)	(2.2063**)	(4.1273**)	(0.2623)	(-0.2816)	(0.5358)
Granger causality between *liquidity* and *likelihood of stock market integration*							
Equation 26 : $\lambda_t = \Sigma a_i \lambda_{t-i} + \Sigma b_i \phi_{t-i}$				Obs = 114		$R^2 = 0.4385$	
0.5796	0.0402	0.1656	-0.0668	9.1224	7.0213	-2.4342	-7.1539
(6.0023**)	(0.3632)	(1.4301)	(-0.6584)	(1.2159)	(0.9327)	(-0.3238)	(-0.9526)
Equation 27 : $\phi_t = \Sigma a_i \lambda_{t-i} + \Sigma b_i \phi_{t-i}$				Obs = 113		$R^2 = 0.3330$	
5.59e-04	-1.31e-04	9.46e-04	-8.37e-04	0.2234	0.2522	0.2158	0.2944
(0.4619)	(-0.0912)	(0.6527)	(-0.6598)	(2.3984**)	(2.6987**)	(2.3120**)	(3.1473**)
Granger causality between *volatility* and *likelihood of stock market integration*							
Equation 28 : $\varpi_t = \Sigma a_i \varpi_{t-i} + \Sigma b_i \phi_{t-i}$				Obs = 107		$R^2 = 0.7950$	
1.1917	-0.3997	0.1463	-0.1216	6.7221	-20.5927	22.4710	60.4225
(12.0002**)	(-2.5811**)	(0.9490)	(-1.2089)	(0.0791)	(-0.2423)	(0.2663)	(0.7177)
Equation 29 : $\phi_t = \Sigma a_i \varpi_{t-i} + \Sigma b_i \phi_{t-i}$				Obs = 106		$R^2 = 0.3186$	
-1.10e-04	2.64e-04	-1.99e-04	4.92e-05	0.2366	0.2476	0.2096	0.3009
(-0.9758)	(1.5215)	(-1.1207)	(0.4315)	(2.4554**)	(2.5730**)	(2.1699**)	(3.1467**)
Granger causality between *liquidity* and *volatility*							
Equation 30 : $\lambda_t = \Sigma a_i \varpi_{t-i} + \Sigma b_i \lambda_{t-i}$				Obs = 108		$R^2 = 0.3834$	
-0.0039	-0.0163	0.0245	-0.0011	0.6372	0.1242	0.1703	-0.0026
(-0.4252)	(-1.1344)	(1.6954*)	(-0.1209)	(6.2940**)	(1.0719)	(1.4672)	(-0.0267)
Equation 31 : $\varpi_t = \Sigma a_i \varpi_{t-i} + \Sigma b_i \lambda_{t-i}$				Obs = 107		$R^2 = 0.7888$	
1.2069	-0.4063	0.1699	-0.0664	0.5805	0.8654	0.1008	0.1741
(11.9485**)	(-2.5666**)	(1.0659)	(-0.8483)	(0.5159)	(0.6771)	(0.0754)	(0.1508)

a				b			
lag 1	lag 2	Lag 3	lag 4	lag 1	lag 2	Lag 3	lag 4
Granger causality between *liquidity* and *degree of stock market integration*							
Equation 22 : $\lambda_t = \Sigma a_i \lambda_{t-i} + \Sigma b_i \alpha_{t-i}$				Obs = 67		$R^2 = 0.4758$	
0.3527	0.7163	0.0051	-0.1140	-0.2616	-0.3400	-1.0824	0.2968
(2.7434**)	(7.9450**)	(0.0458)	(-1.2372)	(-0.4006)	(-0.5185)	(-1.6243)	(0.4321)
Equation 23 : $\alpha_t = \Sigma a_i \lambda_{t-i} + \Sigma b_i \alpha_{t-i}$				Obs = 57		$R^2 = 0.1859$	
0.0102	-0.0145	0.0266	-0.0077	0.3089	0.2121	0.1990	-0.2727
(0.4084)	(-0.9762)	(1.1702)	(-0.4951)	(2.8050**)	(1.9004*)	(1.7759*)	(-2.2453**)
Granger causality between *volatility* and *degree of stock market integration*							
Equation 24 : $\varpi_t = \Sigma a_i \varpi_{t-i} + \Sigma b_i \alpha_{t-i}$				Obs = 61		$R^2 = 0.7172$	
1.2381	-0.4201	0.1725	-0.0660	-2.6220	-0.0024	7.9725	10.0367
(9.0001**)	(-1.8722*)	(0.7550)	(-0.4779)	(-0.2201)	(-1.92e-04)	(0.7136)	(0.9446)
Equation 25 : $\alpha_t = \Sigma a_i \varpi_{t-i} + \Sigma b_i \alpha_{t-i}$				Obs = 51		$R^2 = 0.2659$	
-0.0019	0.0027	-2.11e-06	2.20e-04	0.3880	0.1779	0.1621	-0.1908
(-1.4723)	(1.3036)	(-9.45e-04)	(-0.1648)	(3.3081**)	(1.1732)	(1.5278)	(-1.8107*)
Granger causality between *liquidity* and *likelihood of stock market integration*							
Equation 26 : $\lambda_t = \Sigma a_i \lambda_{t-i} + \Sigma b_i \phi_{t-i}$				Obs = 113		$R^2 = 0.1378$	
0.2246	0.2075	0.1658	0.0030	-16.7388	5.8128	-3.1155	21.8487
(2.3090**)	(2.1079**)	(1.6811*)	(0.0314)	(-1.0691)	(0.3455)	(-0.1919)	(1.3971)
Equation 27 : $\phi_t = \Sigma a_i \lambda_{t-i} + \Sigma b_i \phi_{t-i}$				Obs = 112		$R^2 = 0.3513$	
2.69e-04	4.26e-04	1.14e-04	-3.34e-04	0.2952	0.2436	0.1822	0.2896
(0.4587)	(0.7116)	(0.1915)	(-0.5692)	(3.1246**)	(2.4853**)	(1.6521*)	(3.0601**)
Granger causality between *volatility* and *likelihood of stock market integration*							
Equation 28 : $\varpi_t = \Sigma a_i \varpi_{t-i} + \Sigma b_i \phi_{t-i}$				Obs = 107		$R^2 = 0.7687$	
1.1553	-0.3865	0.1936	-0.1458	140.2375	-39.3570	66.1662	-96.5900
(11.6789**)	(-2.5674**)	(1.2831)	(-1.4647)	(1.1374)	(-0.3057)	(0.5134)	(-0.7623)
Equation 29 : $\phi_t = \Sigma a_i \varpi_{t-i} + \Sigma b_i \phi_{t-i}$				Obs = 106		$R^2 = 0.3539$	
-3.88e-05	9.82e-05	-6.24e-05	4.95e-05	0.3121	0.2437	0.1407	0.2917
(-0.5009)	(0.8318)	(-0.6959)	(0.6353)	(3.2319**)	(2.4166**)	(1.3914)	(3.0096**)
Granger causality between *liquidity* and *volatility*							
Equation 30 : $\lambda_t = \Sigma a_i \varpi_{t-i} + \Sigma b_i \lambda_{t-i}$				Obs = 108		$R^2 = 0.1395$	
0.0381	-0.0256	-0.0041	0.0156	0.1891	0.1569	0.1503	0.0022
(3.0341**)	(-1.2646)	(-0.2014)	(1.2314)	(1.9043*)	(1.5417)	(1.4786)	(0.0223)
Equation 31 : $\varpi_t = \Sigma a_i \varpi_{t-i} + \Sigma b_i \lambda_{t-i}$				Obs = 107		$R^2 = 0.7789$	
1.2616	-0.6033	0.3705	-0.1650	2.2936	-1.0748	1.8087	-1.2583
(13.1164**)	(-3.8369**)	(2.3656**)	(-1.6688*)	(2.9709**)	(-1.3581)	(2.2774**)	(-1.6480*)

a				b			
lag 1	Lag 2	Lag 3	lag 4	lag 1	lag 2	Lag 3	lag 4
Granger causality between *liquidity* and *degree of stock market integration*							
Equation 22 : $\lambda_t = \Sigma a_i \lambda_{t-i} + \Sigma b_i \alpha_{t-i}$				Obs = 63		R^2 = 0.4331	
0.5462	0.1588	0.1358	0.1300	0.0833	-0.5254	0.1920	-0.0719
(4.1638**)	(1.0115)	(0.6699)	(0.9245)	(0.0979)	(-0.6030)	(0.2102)	(-0.0760)
Equation 23 : $\alpha_t = \Sigma a_i \lambda_{t-i} + \Sigma b_i \alpha_{t-i}$				Obs = 53		R^2 = 0.1859	
0.0277	-0.0086	-0.0203	-1.90e-04	-0.0390	0.0970	0.2448	0.4043
(1.3023)	(-0.3488)	(-0.8341)	(-0.0082)	(-0.2729)	(0.6900)	(1.6619*)	(2.7701**)
Granger causality between *volatility* and *degree of stock market integration*							
Equation 24 : $\varpi_t = \Sigma a_i \varpi_{t-i} + \Sigma b_i \alpha_{t-i}$				Obs = 60		R^2 = 0.8244	
1.1435	-0.2176	0.0605	-0.0506	4.3761	-1.2400	-13.2372	8.2265
(10.8176**)	(-1.2852)	(0.3697)	(-0.4835)	(0.5554)	(-1.1521)	(-1.8169)	(0.9702)
Equation 25 : $\alpha_t = \Sigma a_i \varpi_{t-i} + \Sigma b_i \alpha_{t-i}$				Obs = 51		R^2 = 0.2611	
-0.0028	0.0015	0.0025	-9.97e-04	9.38e-04	0.1387	0.2766	0.3605
(-1.5753)	(0.5186)	(0.8557)	(-0.5516)	(0.0064)	(0.9821)	(1.9318*)	(2.5234**)
Granger causality between *liquidity* and *likelihood of stock market integration*							
Equation 26 : $\lambda_t = \Sigma a_i \lambda_{t-i} + \Sigma b_i \phi_{t-i}$				Obs = 114		R^2 = 0.4468	
0.5013	0.1146	0.1309	0.0453	12.8009	22.2103	0.7937	-31.3198
(5.2202**)	(1.0595)	(1.2126)	(0.4499)	(0.5554)	(0.9509)	(0.0342)	(-1.3908)
Equation 27 : $\phi_t = \Sigma a_i \lambda_{t-i} + \Sigma b_i \phi_{t-i}$				Obs = 113		R^2 = 0.2591	
-5.46e-04	-1.45e-04	5.14e-04	4.39e-04	0.2396	0.4227	0.1691	0.1638
(-1.3460)	(-0.3246)	(1.1483)	(1.0246)	(2.4940**)	(4.3815**)	(1.7624*)	(1.7171*)
Granger causality between *volatility* and *likelihood of stock market integration*							
Equation 28 : $\varpi_t = \Sigma a_i \varpi_{t-i} + \Sigma b_i \phi_{t-i}$				Obs = 107		R^2 = 0.7512	
1.0694	-0.2189	0.0625	-1.1071	168.2270	133.8181	-364.9770	128.3320
(10.6625**)	(-1.5019)	(0.4327)	(-0.0789)	(0.6075)	(0.4610)	(-1.2650)	(0.4598)
Equation 29 : $\phi_t = \Sigma a_i \varpi_{t-i} + \Sigma b_i \phi_{t-i}$				Obs = 106		R^2 = 0.3201	
-9.25e-06	1.29e-05	-1.69e-05	7.06e-06	0.2756	0.3893	0.1097	0.2469
(-0.2599)	(0.2461)	(-0.3285)	(0.2000)	(2.7578**)	(3.5784**)	(1.0695)	(2.4474**)
Granger causality between *liquidity* and *volatility*							
Equation 30 : $\lambda_t = \Sigma a_i \varpi_{t-i} + \Sigma b_i \lambda_{t-i}$				Obs = 108		R^2 = 0.5031	
-0.0037	0.0217	-0.0315	0.0237	0.5671	0.1165	-0.0018	0.1506
(-0.4596)	(1.7884*)	(-2.5900**)	(2.9320**)	(5.9427**)	(1.0450)	(-0.0164)	(1.5497)
Equation 31 : $\varpi_t = \Sigma a_i \varpi_{t-i} + \Sigma b_i \lambda_{t-i}$				Obs = 107		R^2 = 0.7692	
1.1292	-0.2947	0.1482	-0.1215	3.1755	-1.0536	2.9404	-3.2481
(11.6921**)	(-2.0452**)	(1.0261)	(-1.2591)	(2.7938**)	(-0.7823)	(2.2114**)	(-2.7484**)

a				b			
lag 1	Lag 2	Lag 3	lag 4	lag 1	lag 2	Lag 3	lag 4
Granger causality between *liquidity* and *degree of stock market integration*							
Equation 22 : $\lambda_t = \Sigma a_i \lambda_{t-i} + \Sigma b_i \alpha_{t-i}$				Obs = 72		$R^2 = 0.4253$	
0.8458	-0.0748	0.0886	0.3281	7.2013	-3.3529	3.8001	-11.2171
(5.4167**)	(-0.5267)	(0.5966)	(2.4663**)	(1.0098)	(-0.4204)	(0.5019)	(-1.5256)
Equation 23 : $\alpha_t = \Sigma a_i \lambda_{t-i} + \Sigma b_i \alpha_{t-i}$				Obs = 67		$R^2 = 0.4551$	
3.97e-06	-9.91e-04	-5.61e-04	6.71e-04	0.4300	0.3997	-0.0240	0.2512
(0.0016)	(-0.3547)	(-0.1741)	(0.2474)	(3.1507**)	(2.7360**)	(-0.1647)	(0.1656)
Granger causality between *volatility* and *degree of stock market integration*							
Equation 24 : $\varpi_t = \Sigma a_i \varpi_{t-i} + \Sigma b_i \alpha_{t-i}$				Obs = 74		$R^2 = 0.7520$	
1.0615	-0.1806	0.2060	-0.1491	7.7140	-12.2606	-0.8950	10.1486
(8.6574**)	(-1.1007)	(1.2052)	(-1.1842)	(0.8422)	(-1.2530)	(-0.0937)	(1.1987)
Equation 25 : $\alpha_t = \Sigma a_i \varpi_{t-i} + \Sigma b_i \alpha_{t-i}$				Obs = 68		$R^2 = 0.4943$	
-0.0020	-0.0013	0.0028	8.07e-04	0.4143	0.4543	-0.0873	-0.0136
(-1.1736*)	(-0.4918)	(1.0945)	(0.3421)	(2.9349**)	(3.2824**)	(-0.6367)	(-0.1119)
Granger causality between *liquidity* and *likelihood of stock market integration*							
Equation 26 : $\lambda_t = \Sigma a_i \lambda_{t-i} + \Sigma b_i \phi_{t-i}$				Obs = 98		$R^2 = 0.5241$	
0.6678	-0.0148	0.0516	0.0864	15.4673	33.5866	-66.1700	51.6002
(6.3807**)	(-0.1161)	(0.4399)	(0.8536)	(0.3728)	(0.8086)	(-1.5902)	(1.2361)
Equation 27 : $\phi_t = \Sigma a_i \lambda_{t-i} + \Sigma b_i \phi_{t-i}$				Obs = 97		$R^2 = 0.3623$	
-4.24e-05	1.63e-04	2.03e-04	-1.94e-04	0.2321	0.2503	0.2322	0.2618
(-0.1651)	(0.5377)	(0.6935)	(-0.7896)	(2.2782**)	(2.4535**)	(2.2722**)	(2.5498**)
Granger causality between *volatility* and *likelihood of stock market integration*							
Equation 28 : $\varpi_t = \Sigma a_i \varpi_{t-i} + \Sigma b_i \phi_{t-i}$				Obs = 107		$R^2 = 0.7868$	
1.0850	-0.2379	0.0909	-0.0920	8.6333	26.0673	17.0420	7.9275
(10.6876**)	(-1.8173)	(0.6114)	(-0.9199)	(0.1467)	(0.4430)	(0.2923)	(0.1362)
Equation 29 : $\phi_t = \Sigma a_i \varpi_{t-i} + \Sigma b_i \phi_{t-i}$				Obs = 106		$R^2 = 0.3359$	
-1.35e-04	3.85e-04	-3.25e-04	1.22e-04	0.2521	0.2282	0.2236	0.2727
(-0.8209)	(1.5889)	(-1.3264)	(0.7412)	(2.6010**)	(2.3572**)	(2.3306**)	(2.8460**)
Granger causality between *liquidity* and *volatility*							
Equation 30 : $\lambda_t = \Sigma a_i \varpi_{t-i} + \Sigma b_i \lambda_{t-i}$				Obs = 99		$R^2 = 0.4983$	
0.0060	0.0673	-0.1773	0.1397	0.7060	0.0270	0.0323	0.1305
(0.1736)	(0.5705)	(-1.52680)	(1.6942*)	(6.7910**)	(0.2116)	(0.2614)	(1.2430)
Equation 31 : $\varpi_t = \Sigma a_i \varpi_{t-i} + \Sigma b_i \lambda_{t-i}$				Obs = 98		$R^2 = 0.7659$	
1.0766	-0.2157	0.0387	-0.0500	0.1507	1.1999	0.0133	-0.0472
(10.1264**)	(-1.3838)	(0.25190)	(-0.5112)	(1.0899)	(1.1882)	(0.0811)	(0.3351)

	a				b		
lag 1	Lag 2	lag 3	lag 4	lag 1	lag 2	Lag 3	lag 4
Granger causality between *liquidity* and *degree of stock market integration*							
Equation 22 : $\lambda_i = \Sigma a_i \lambda_{i-i} + \Sigma b_i \alpha_{i-i}$				Obs = 75		$R^2 = 0.2769$	
0.8253	-0.0635	0.0089	0.2094	0.6935	-1.3848	3.0913	-3.2570
(6.7060**)	(-0.3979)	(0.0582)	(1.7168*)	(0.3272)	(-0.6005)	(1.2149)	(-1.3922)
Equation 23 : $\alpha_i = \Sigma a_i \lambda_{i-i} + \Sigma b_i \alpha_{i-i}$				Obs = 67		$R^2 = 0.3413$	
0.0025	0.0039	0.0039	-0.0064	0.3660	0.0315	0.0336	0.3338
(0.3631)	(0.4373)	(0.4614)	(-0.9979)	(3.0450**)	(0.2307)	(0.2429)	(2.7883**)
Granger causality between *volatility* and *degree of stock market integration*							
Equation 24 : $\varpi_i = \Sigma a_i \varpi_{i-i} + \Sigma b_i \alpha_{i-i}$				Obs = 72		$R^2 = 0.7349$	
1.1647	-0.2941	0.0975	-0.0210	2.8942	-4.1353	-3.3868	-1.6967
(9.1825**)	(-1.4815)	(0.49660)	(-0.1689)	(0.2660)	(-0.3494)	(-0.2695)	(-0.1404)
Equation 25 : $\alpha_i = \Sigma a_i \varpi_{i-i} + \Sigma b_i \alpha_{i-i}$				Obs = 65		$R^2 = 0.3245$	
-1.46e-04	0.0012	-9.48e-04	2.90e-04	0.3991	0.0182	0.3338	0.3637
(-0.1105)	(0.5717)	(-0.4630)	(0.2234)	(3.2731**)	(0.1306)	(0.2396)	(2.8885**)
Granger causality between *liquidity* and *likelihood of stock market integration*							
Equation 26 : $\lambda_i = \Sigma a_i \lambda_{i-i} + \Sigma b_i \phi_{i-i}$				Obs = 114		$R^2 = 0.3327$	
0.6332	0.0124	-0.1363	0.1603	1.4992	-6.7715	4.8851	. 16.4545
(6.5717**)	(0.1095)	(-1.21670	(1.6423*)	(0.0927)	(-0.4275)	(0.3095)	(1.0388)
Equation 27 : $\phi_i = \Sigma a_i \lambda_{i-i} + \Sigma b_i \phi_{i-i}$				Obs = 113		$R^2 = 0.2838$	
6.32e-04	-6.39e-04	0.0012	-7.85e-04	0.2139	0.2497	0.2154	0.2974
(1.1366)	(-0.9784)	(1.8627*)	(-1.3925)	(2.2910**)	(2.7311**)	(2.3640**)	(2.2483**)
Granger causality between *volatility* and *likelihood of stock market integration*							
Equation 28 : $\varpi_i = \Sigma a_i \varpi_{i-i} + \Sigma b_i \phi_{i-i}$				Obs = 107		$R^2 = 0.7652$	
1.1109	-0.2742	0.0945	-0.1019	18.1059	14.8844	27.5319	8.7348
(11.1009**)	(-1.8079*)	(0.6067)	(-0.9841)	(0.22850	(0.1884)	(0.3601)	(0.1141)
Equation 29 : $\phi_i = \Sigma a_i \varpi_{i-i} + \Sigma b_i \phi_{i-i}$				Obs = 106		$R^2 = 0.2609$	
-2.52e-04	4.68e-04	-2.21e-04	4.82e-05	0.2332	0.2467	0.2030	0.2959
(-2.0717**)	(2.5355**)	(-1.1650)	(0.38230	(2.4159**)	(2.5660**)	(2.1829**)	(3.1751**)
Granger causality between *liquidity* and *volatility*							
Equation 30 : $\lambda_i = \Sigma a_i \varpi_{i-i} + \Sigma b_i \lambda_{i-i}$				Obs = 108		$R^2 = 0.3602$	
0.0067	0.0462	-0.0966	0.0598	0.7150	9.34e-04	-0.1181	0.2256
(0.3322)	(1.56860	(-3.1941**)	(2.9609**)	(7.6527**)	(0.0063)	(-1.0487)	(2.4188**)
Equation 31 : $\varpi_i = \Sigma a_i \varpi_{i-i} + \Sigma b_i \lambda_{i-i}$				Obs = 107		$R^2 = 0.7644$	
1.1342	-0.2601	0.0666	-0.0232	0.5443	0.3617	0.4102	-0.8154
(11.4582**)	(-1.7372*)	(0.4426)	(-0.2347)	(1.1937)	(0.6562)	(0.7471)	(-1.7808*)

* significantly different from zero at 90% level of significance
** significantly different from zero at 95% level of significance

To investigate the long-run relationship between the level of Asian stock markets integration and the Asian stock markets quality, in term of liquidity and volatility, the conintegration test between them is performed. Each variable is paired to see the equilibrium relationship for them. L-D stands for liquidity and the degree of integration. V-D stands for volatility and the degree of integration. L-L stands for liquidity and the likelihood of integration. V-L stands for volatility and the likelihood of integration. D-L stands for the degree of integration and the likelihood of integration.

Hong Kong

HK	Dickey - Fuller test			Augment Dickey - Fuller test						
	RESID	Obs	R^2	RESID	DRESID(1)	DRESID(2)	DRESID(3)	DRESID(4)	Obs	R^2
L – D	-1.0604	114	0.6453	-1.0646	0.0199	-0.1151	-0.0335	-0.0514	110	0.4791
	(-3.6788**)			(-3.6721**)	(0.0894)	(-0.6736)	(-0.2144)	(-0.5772)		
V – D	-0.7479	114	0.3597	-0.8761	0.0983	0.0149	0.0409	0.1154	110	0.3384
	(-3.7064**)			(-3.9766**)	(0.4992)	(0.0913)	(0.2950)	(1.0287)		
L – L	-1.0209	114	0.5091	-1.0836	0.0627	0.0595	0.0336	0.0379	110	0.4919
	(-3.8269**)			(-3.8084**)	(0.3122)	(0.3452)	(0.2397)	(0.3873)		
V – L	-0.8496	114	0.4234	-0.8106	-0.0437	-0.0268	0.0231	0.0486	110	0.4048
	(-3.1092)			(-3.5759**)	(-0.2560)	(-0.1752)	(0.1788)	(0.4937)		
D – L	-1.2893	115	0.7260	-0.9533	-0.0328	-0.0443	-0.0161	-0.1050	111	0.4277
	(-4.0417**)			(-2.3045**)	(-0.0979)	(-0.1588)	(-0.0673)	(-0.5674)		

Korea

KO	Dickey - Fuller test			Augment Dickey - Fuller test						
	RESID	Obs	R^2	RESID	DRESID(1)	DRESID(2)	DRESID(3)	DRESID(4)	Obs	R^2
L – D	-1.1319	115	0.5580	-0.7984	-0.2772	-0.4832	-0.1991	-0.1624	111	0.5714
	(-3.2455**)			(-2.1490**)	(-0.8049)	(-1.6137)	(-0.6752)	(-0.9963)		
V – D	-0.6974	115	0.3235	-1.0073	0.3091	0.0822	0.1252	0.1339	111	0.3929
	(-4.3057**)			(-4.4555**)	(1.6064)	(0.3926)	(0.9748)	(1.1775)		
L – L	-0.9812	115	0.4912	-1.0227	0.0391	0.0315	-0.0518	-0.1099	111	0.4834
	(-4.4901**)			(-4.4975**)	(0.1960)	(0.1671)	(-0.3730)	(-1.0898)		
V – L	-1.0017	115	0.5009	-0.8921	-0.1079	-0.0762	-0.0741	-0.0955	111	0.4876
	(-4.8964**)			(-4.1599**)	(-0.5620)	(-0.4548)	(-0.5356)	(-0.9799)		
D – L	-1.3026	115	0.7146	-0.4353	-0.6705	-0.4993	-0.1392	0.0183	111	0.2472
	(-4.0884**)			(-0.6038)	(-1.0530)	(-0.9494)	(-0.3560)	(0.0437)		

Malaysia

MY	Dickey - Fuller test			Augment Dickey - Fuller test						
	RESID	Obs	R^2	RESID	DRESID(1)	DRESID(2)	DRESID(3)	DRESID(4)	Obs	R^2
L - D	-0.9784 (-5.6987**)	115	0.4581	-0.6055 (-1.6926*)	-0.3655 (-1.0908)	-0.1364 (-0.4493)	-0.2012 (-0.8630)	-.01766 (-0.8828)	111	0.4043
V - D	-0.9786 (-4.0827**)	115	0.5048	-0.7852 (-3.3074**)	-0.1993 (-0.9582)	0.1558 (0.9354)	0.3606 (2.6199**)	0.1677 (1.6915*)	111	0.5577
L - L	n/a			n/a	n/a	n/a	n/a	n/a		
V - L	n/a			n/a	n/a	n/a	n/a	n/a		
D - L	n/a			n/a	n/a	n/a	n/a	n/a		

Philippines

PH	Dickey - Fuller test			Augment Dickey - Fuller test						
	RESID	Obs	R^2	RESID	DRESID(1)	DRESID(2)	DRESID(3)	DRESID(4)	Obs	R^2
L - D	-0.7899 (-3.3944**)	115	0.4035	-0.5433 (-1.7872*)	-0.2411 (-0.6909)	-0.1891 (-0.7341)	-0.0504 (-0.2187)	0.0843 (0.4922)	111	0.3035
V - D	-0.9965 (-4.1944**)	115	0.4968	-0.8469 (-2.2364**)	-0.0580 (-0.1669)	-0.1785 (-0.5911)	-0.1088 (-0.4466)	-0.0311 (-0.1681)	111	0.4201
L - L	-0.9928 (-4.6398**)	115	0.4982	-1.1168 (-5.1110**)	0.1033 (0.5361)	0.0619 (0.3740)	0.0517 (0.3876)	0.0634 (0.6740)	111	0.4915
V - L	-0.9723 (-4.3312**)	115	0.4835	-0.9392 (-4.5027**)	-0.0334 (0.1764)	-0.0092 (-0.0559)	-0.0246 (-0.1817)	0.0231 (0.2320)	111	0.4660
D - L	-1.3379 (-3.9890**)	115	0.7346	-0.1653 (-1.4189)	-1.0715 (-6.2056**)	-0.8106 (-2.9103**)	-0.5689 (-2.7739**)	-0.1171 (-1.0319)	111	0.9153

Singapore

SG	Dickey - Fuller test			Augment Dickey - Fuller test						
	RESID	Obs	R^2	RESID	DRESID(1)	DRESID(2)	DRESID(3)	DRESID(4)	Obs	R^2
L - D	-1.0466 (-4.2947**)	115	0.5216	-0.7727 (-2.2160**)	-0.2124 (-0.7314)	-0.1197 (-0.4664)	-0.1115 (-0.5123)	-0.2547 (-1.5918)	111	0.5648
V - D	-0.9595 (-3.6355**)	115	0.4792	-1.0228 (-3.1161**)	0.0050 (0.0173)	-0.0633 (-0.2602)	-0.1272 (-0.7238)	-0.0775 (-0.8110)	111	0.4618
L - L	-1.0779 (-4.5454**)	111	0.5479	-1.0113 (-4.3110**)	-0.0152 (-0.0730)	-0.0462 -(0.2551)	-0.0202 (-0.1391)	-0.0815 (0.8065)	111	0.5017
V - L	n/a			n/a	n/a	n/a	n/a	n/a		
D - L	-1.3175 (-3.5787**)	115	0.7474	-0.2894 (-1.6470*)	-0.7101 (-2.8984**)	-0.3166 (-1.1789)	-0.1574 (-0.5552)	-0.1444 (-0.5064)	76	0.4088

Taiwan

TA	Dickey - Fuller test			Augment Dickey - Fuller test						
	RESID	Obs	R^2	RESID	DRESID(1)	DRESID(2)	DRESID(3)	DRESID(4)	Obs	R^2
L - D	-1.0616 (-3.9480**)	115	0.5248	-1.3261 (-3.8805**)	0.2001 (0.6362)	0.0518 (0.1915)	-0.1469 (-0.7215)	-0.0106 (-0.0670)	108	0.5381
V - D	-0.7656 (-2.2153**)	115	0.3852	-1.1574 (-4.2683**)	0.2656 (1.1001)	0.0876 (0.4366)	-0.0145 (-0.0891)	0.1427 (1.1150)	108	0.4852
L - L	-1.1096 (-4.3725**)	115	0.5567	-1.0396 (-4.3076**)	-0.0616 (-0.2830)	-0.0388 (-0.2065)	-0.0599 (-0.3935)	0.0060 (0.0582)	111	0.5668
V - L	-1.0894 (-4.0868**)	115	0.5369	-0.9541 (-4.0622**)	-0.1003 (-0.4710)	-0.0881 (-0.4687)	-0.0051 (-0.0338)	-0.0127 (-0.1234)	111	0.5097
D - L	-1.3105 (-4.0268**)	115	0.7392	-0.4705 (-1.6545*)	-0.4861 (-1.7160*)	-0.3486 (-1.2278)	-0.3274 (-1.3793)	-0.2791 (-1.5247)	96	0.4137

TH	Dickey - Fuller test			Augment Dickey - Fuller test						
	RESID	Obs	R^2	RESID	DRESID(1)	DRESID(2)	DRESID(3)	DRESID(4)	Obs	R^2
L - D	-1.0377 (-3.9464**)	115	0.5437	-1.0847 (-2.4550**)	-0.1110 (-0.2919)	-0.0111 (-0.0347)	-0.0676 (-0.2599)	-0.0916 (-0.5070)	111	0.5348
V - D	-0.7573 (-3.1473**)	115	0.3887	-0.9357 (-3.7465**)	0.2016 (0.8697)	0.1190 (0.5900)	0.1240 (0.73780)	0.1691 (1.2269)	111	0.3701
L - L	n/a			n/a	n/a	n/a	n/a	n/a		
V - L	n/a			n/a	n/a	n/a	n/a	n/a		
D - L	n/a			n/a	n/a	n/a	n/a	n/a		

* statistically significantly cointegrated at 95% due to Engle-Yoo critical value

Appendix C

Stock Market Integration: Thailand Perspective

Another benefit of market integration can be considered in term of productivity. As stated earlier, the market integration expands supply of investment resources from foreign investment. Simultaneously, it increases the demand for domestic securities. This increased demand will drive up the price of domestic securities. Consequently, the price-earning ratio will be higher and reducing the cost of capital, eventually. If this is true, along the gradually increase in the degree of stock market integration during 1980s, we should observe the higher investment level. In figure C.1., during 1980s, we can see the slightly upward of the investment index curve. The investment index is quite stable after the period of 1980s. It drops during the Asian financial crisis during the end of 1990s.

Figure C.1.

Thailand Investment Index

The plotted annual investment index is from the calculation by the Bank of Thailand (BOT). The calculation period is 1980 – 1999. The investment index is the percentage changes of 12-month backward moving average of main investment components. They are mainly in construction, import of capital goods, capital investment registration, and the promotional privileges from Board of Investment (BOI). The full table of the index can be obtained in the appendix.
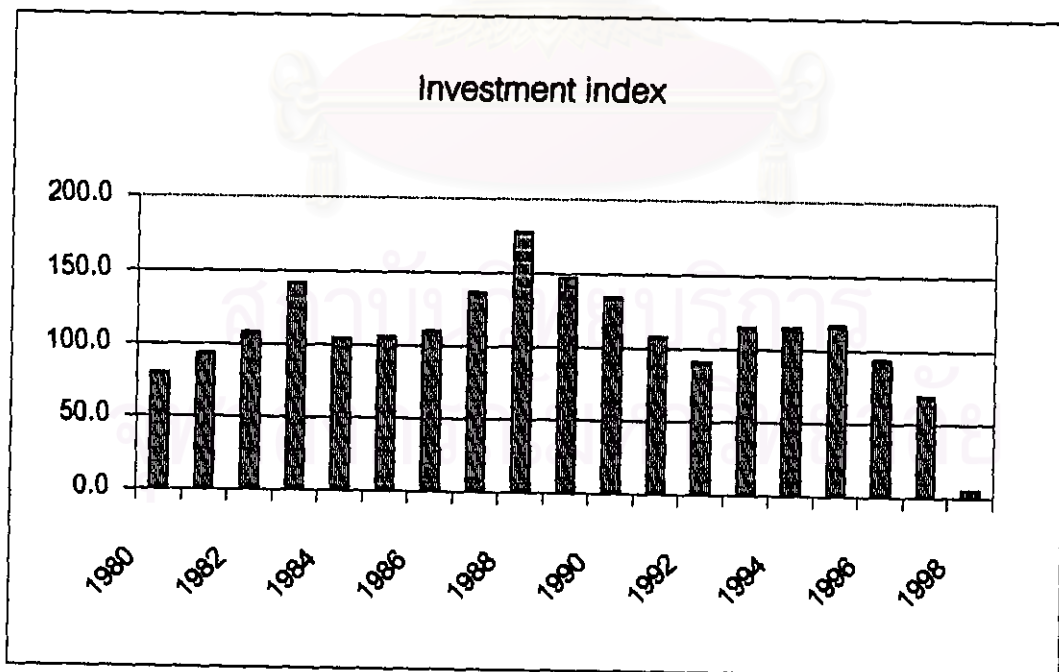
Figure C.2.

Net Portfolio Flow to Thailand

The plotted annual net portfolio capital flow to Thailand is based on the data provided by the Bank of Thailand (BOT). The data covers the period of 1970 – 1999. The unit shown is million baht.

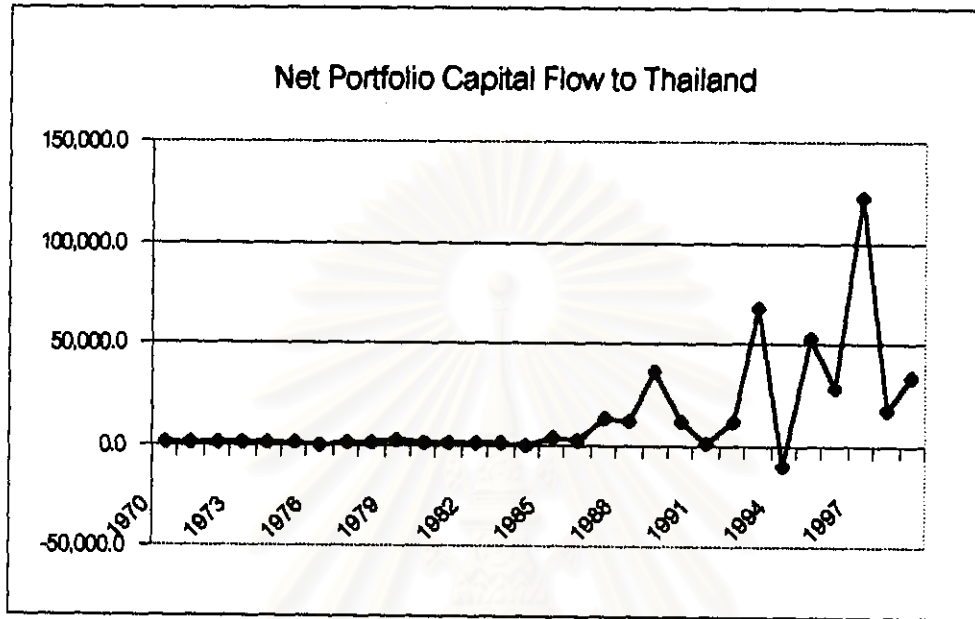Net Portfolio Capital Flow to Thailand

Figure C.3.

Net Portfolio Flow to Thailand Classified by Sources of Flow

The plotted annual net portfolio capital flow to Thailand is based on the data provided by the Bank of Thailand (BOT). The data covers the period of 1970 – 1999. The unit shown is million baht. The categories in this figure is classified according to the investment from each region. They are Asian and Australia, United States, European countries, and the others.

Capital Inflow by Region

——— Asia & Australia · · · · · · · U.S.A. — · — · — Europe — — — — Others
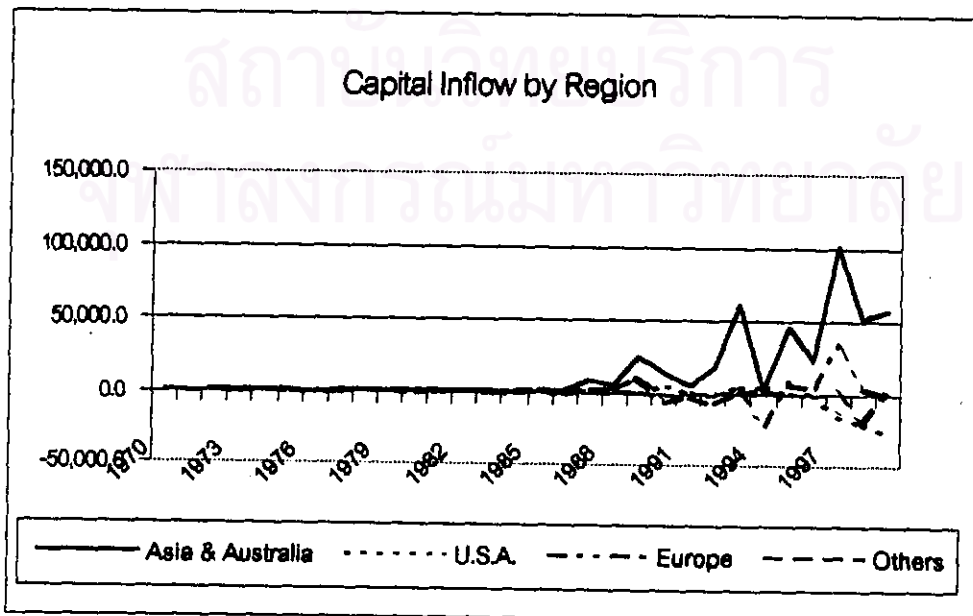
From the figure C.2., it can be observed that the increase in capital inflow appears obviously since 1985, the beginning period of the openness of Thai financial. The source of the capital flow mostly comes from Asian countries and Australia, according to figure C.3. European portfolio investment in Thailand is also high while the flow from United States and Canada is not so much.

The correlation between the degree of market integration, the portfolio capital inflow, and the investment index for Thailand case are calculated and reported in table C.1. to observe any correlation between them.

Table C.1.

The Correlation Matrix of Thai Degree of Integration, Portfolio Flow, and Investment Index

The correlation matrix between the degree of Thai stock market integration, the amount of portfolio capital flow, and the investment index. The period of the calculation begin with January 1997 for the amount of portfolio capital flow. The monthly time-series of Thai stock market integration and the investment index begins with January 1990.

	Integration	Cap Flow	Investment
Integration	1	-0.1294	-0.1221
Cap Flow		1	0.4294
Investment			1

From the table C.1., the figures in the table do not show high correlation between the degree of Thai stock market integration with portfolio capital flow and the investment index. However, the direction of the correlation is consistent with the expectation. The direction of correlation between the degree of integration and the other two variables are negative. This is because higher degree of integration implies the less of the value of the measure. However, the correlation between the portfolio capital flow and the investment is so high as 0.4294. This correlation can be concluded that the relationship between the degree of stock market integration, the capital flow, and the investment level are quite reasonable according to our explanation.

Biography

Mr. Santi Kiranand was born on February 8, 1962 in Bangkok, Thailand. He started his study from childhood at Bangkok Christian College and Suankularb College. He received his bachelor degree in Accounting with second class honor from Faculty of Commerce and Accountancy, Chulalongkorn University in 1983. He earned his two master degrees in Computer Science and Business Administration from Faculty of Engineering, Chulalongkorn University in 1987 and Faculty of Commerce and Accountancy, Thammasat University in 1989. He is also granted the bachelor degree in Business Economics from Sukhothai Thammathirat University in 1992.

He started his doctorate study in Finance at the Joint Doctoral program in Business Administration (JDBA) under Chulalongkorn University in 1994.