Fluctuation & Flexibility

A Case Study of Exchange Rate Regimes from the 1997-1998 East Asian Crisis

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Abstract

The choice between fixed and flexible exchange rate regimes has long-lasting impacts on a nation's economic security, and consequently, its political outlook. However, such a freedom of choice is almost always limited by the fiscal and monetary health of the nation. This paper evaluates the extent of such a freedom, and how choices in exchange rate regimes affect a country's economic performance. Specifically, this paper uses the East Asian economic crisis as a case study to examine the effects of exchange rate policies.

Introduction

The East Asian currency crisis of 1997-1998 is arguably one of the worst financial crises in recent financial history. While its scope and extent did not approach the current financial crisis facing the world, the concentration of its impact to a handful of countries enables us to examine an unhealthy economic phenomenon in a specific region in the light of relatively healthy global economic conditions elsewhere. In addition, the fiscal and monetary policies of the ASEAN economies under times of boom versus times of bust provide us a fulcrum with which to examine the rationale and outcomes of varying exchange rate policies.

This paper will attempt to perform such an analysis and propose a recommendation on the role of exchange rate regimes in recessionary conditions. In addition, this paper will also evaluate the fitness of such a recommendation to other similar economic conditions.

In the next section, this paper will analyze the origin of the East Asian crisis of 1997-1998, and the role that exchange rate regimes played in fostering the crisis. A multitude of global economic indicators will be examined with an effect to understand the role of such regimes before, during, and after the crisis.

Following this, this paper will demonstrate and utilize an existing model developed at the *Bank of Canada* to identify dominant exchange rate regimes, with South Korea as an example. This model will then be used to further understand collapsing economic regimes from the perspective of currency crisis models.

This will also include a brief discussion on the role of externalities and system shocks – and their impact on currency regimes – as an extension of the study of collapsing economic regimes. Finally, a conclusion will be provided based on the aforementioned analysis, with additional ideas for further research.

Also provided are several appendices on the data used, including a post-mortem section that looks at the applicability of this study elsewhere, including today's economic and political conditions.

Analyzing the East Asian Crisis

To further understand the East Asian crisis, we look several key indicators of the following countries of interest –

- Indonesia
- Malaysia
- Thailand
- Singapore
- Philippines

The key indicators are as follows –

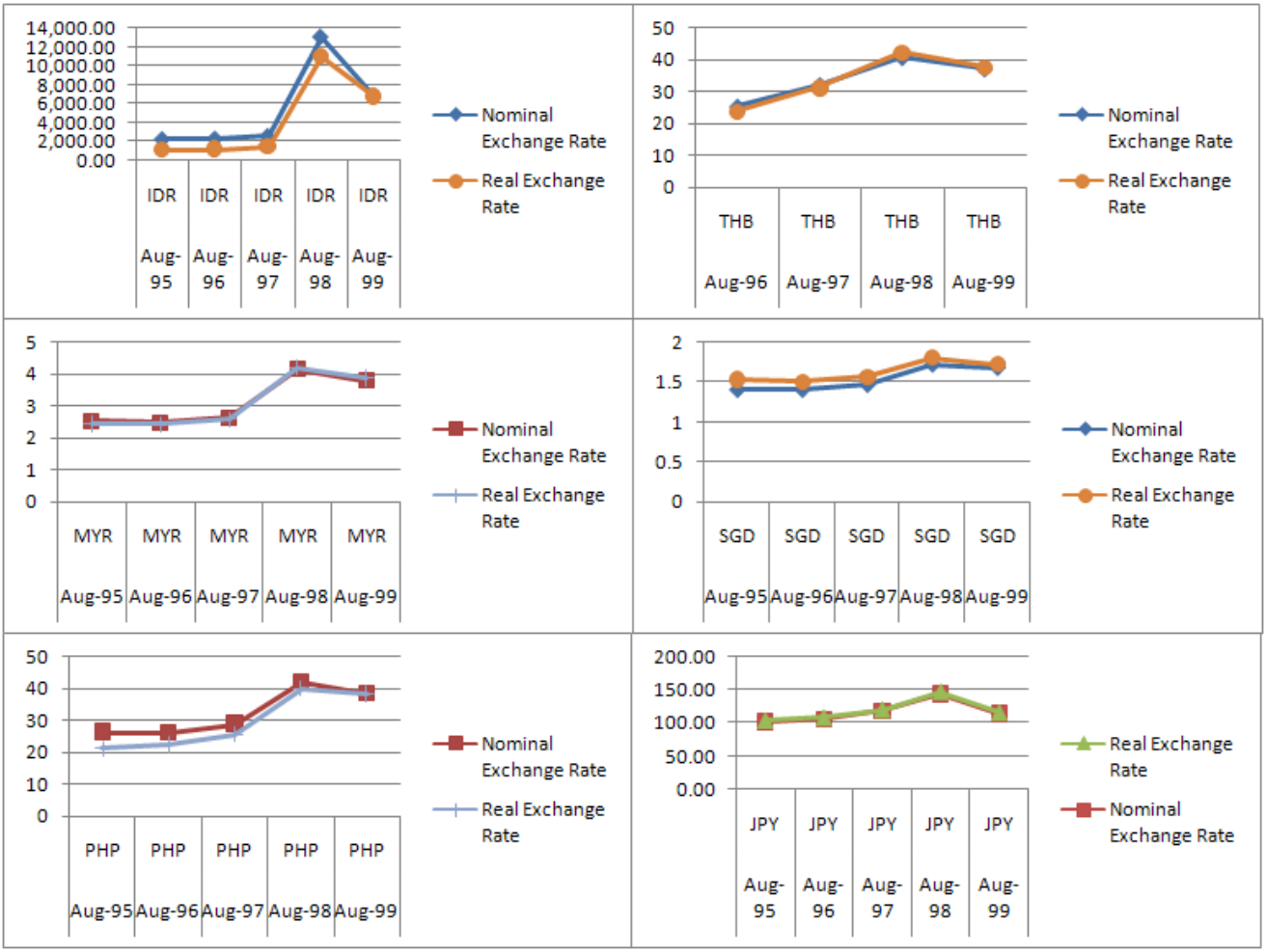
- Exchanges Rates against the US Dollar (Nominal & Real)
- Change in Gross Domestic Product
- Current Account Balance

- External Debt & Debt Service Payments
- Consumer Price Index (Nominal)

To better understand the Asian Crisis of 1997-1998, it is worthwhile to note the environment in which the crisis precipitated. Specifically, the 1990s were a period of great liberalization of the ASEAN economies. In addition, several of countries in the region had also pegged their currencies against the US Dollar during that period, to ease trade with the newly opened international markets [Oatley 339-340] [Woo, Sachs 165-167, 257-259].

The opening of these economies with a USD peg to western and international markets had several consequences to the domestic economies of those nations. The most important of these was the leveraging of the difference between domestic and international interest rates – the former being towards long term lending and the latter being towards short term lending [Oatley 339-340].

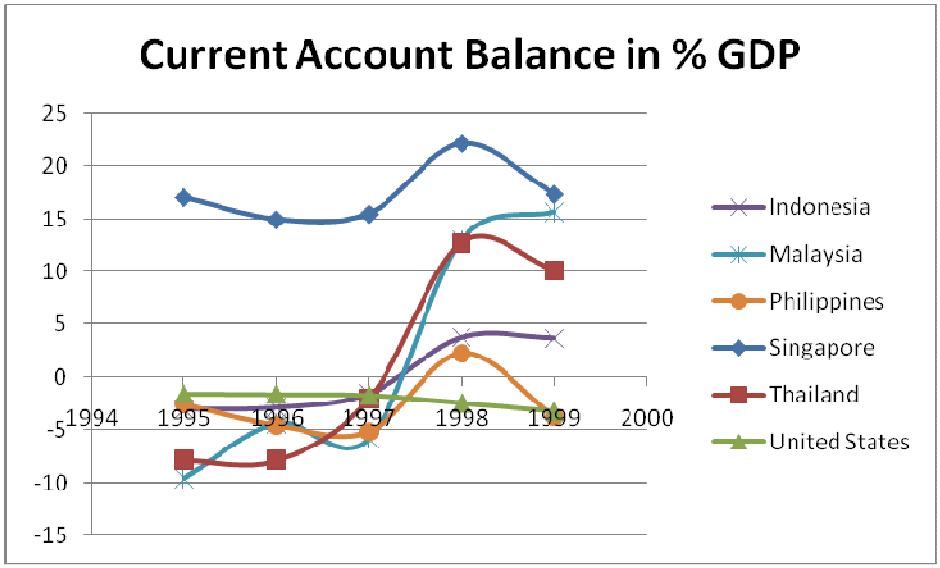
In this light, it is interesting to compare the Exchange Rates of the countries of interest against various economic indicators. The charts below show the exchange rates for Indonesian Rupiah (IDR), Malaysian Ringitt (MYR), Philippine Peso (PHP), Thai Baht (THB), Singapore Dollar (SGD) and the Japanese Yen (JPY).

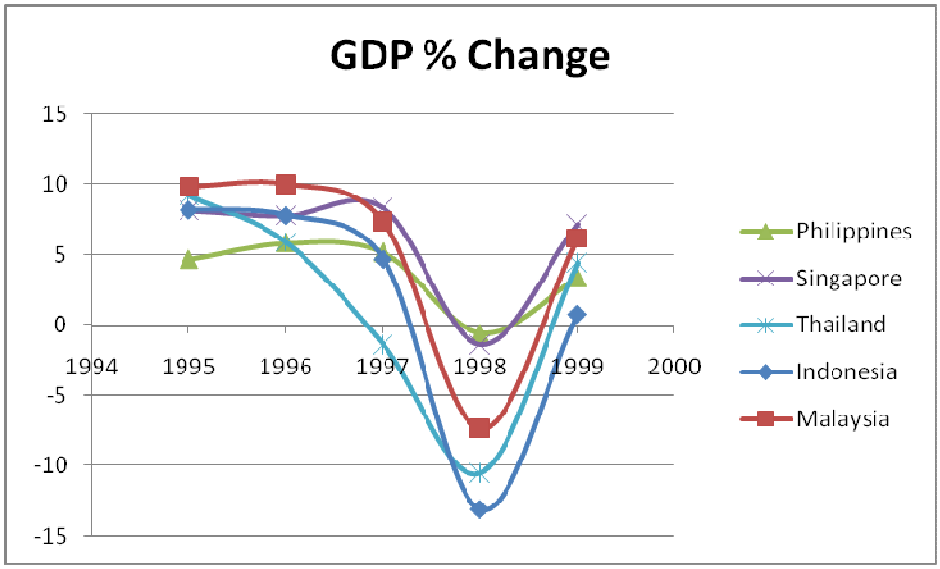


***Source**: Historical exchange rate information vs. USD from the U.S. Federal Reserve.*

It is important to note that in the exchange rate graph above, Japan is also included. This is because Japan was a leading importer of goods from several of the ASEAN countries. In addition, the collapse of the ASEAN countries had other externalities, which included Japan [1 Oatley] [Woo, Sachs 13-20].

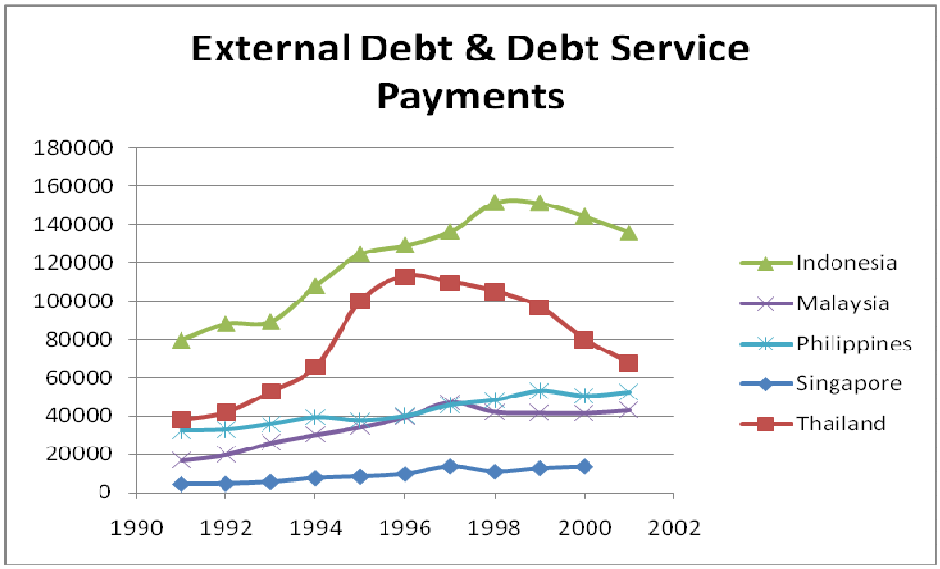
In comparison to the currency charts above, given below are the charts outlining the Current Account Balance (in % GDP) versus the GDP % Change –





***Source**: World Economic Outlook Database, International Monetary Fund (2009)*

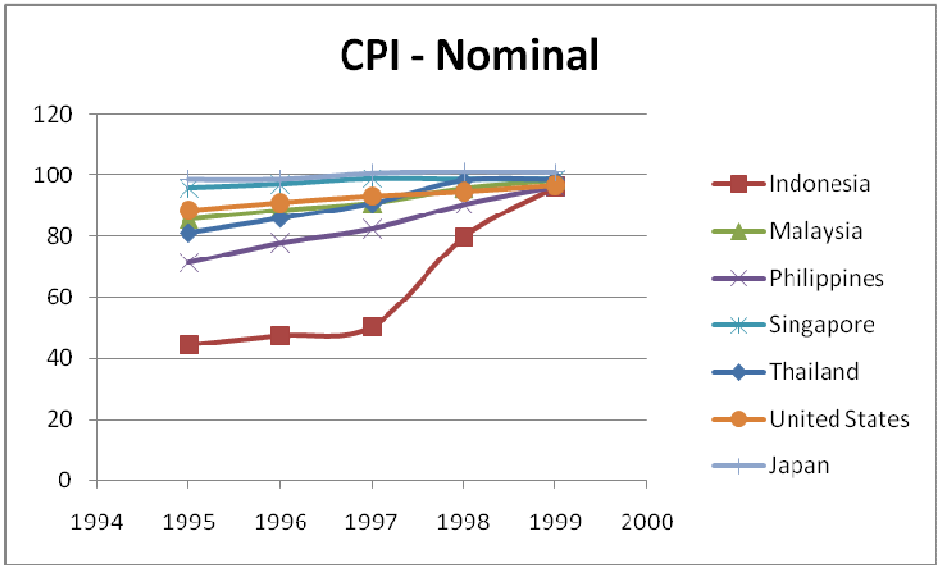
In addition, it is also useful to look at External Debt & Debt Service Payments by the same set of countries during this period –



***Source**: World Economic Outlook Database, International Monetary Fund (2009).*

All numbers in USD Million.

Also given below are charts comparing the inflation in the countries of interest, plus the US and Japan –



***Source**: World Economic Outlook Database, International Monetary Fund (2009).*

All numbers in %.

These charts point to us several key pieces of information that are well in agreement with what are generally agreed to be macroeconomic root-causes of the Asian Economic Crisis [Oatley 335-342] [Lau 4]. These can be summed up as follows –

(1) There was a significant current account imbalance, which was made worse by the peg against an appreciating USD.
(2) There were inadequate foreign reserves to meet foreign debt, which was made worse by falling GDP and a sharp uprising of Current Balance as a percentage of GDP.
(3) Increase in domestic rates of inflation equal to or greater than the US inflation, resulting in an exchange rate appreciation.

Significant research has been done on the above causes, and this paper will not delve into further detail than to acknowledge the aforementioned factors as being key contributors to the crisis.

The next goal of this paper is to identify a dominant rate regime and evaluate its fitness for the Asian Crisis.

Identifying a Dominant Exchange Rate Regime

In order to identify a dominant exchange rate regime, we will use a model developed at the *Bank of Canada* to identify dominant currency regimes. In addition, we will also look at a few corollaries that can be derived from the results of the aforementioned model.

This model incorporates the effects of changes in exchange rates "owing to liability dollarization, financial fragility, or balance-sheet vulnerabilities, into traditional models of exchange rate regime" [Osakwe 11] through the use of a loss function that effectively calibrates the variance between real and expected changes in the exchange rates.

The model also provides a loss function which weights the buffer provided by the nation's central bank to address exchange volatility through forex and bullion reserves.

To this end, we used the simulation and calibration data used by the model by analyzing the liability dollarization, financial fragility, and balance sheet vulnerabilities for South Korea. Specifically, the data used for South Korea was from 1966 – 1998.

We find that the evaluation of the model using the data for South Korea brings out the flexible-rate regime to be dominant over a fixed-rate regime, despite other shortcomings – *when using one of the approaches used by the model* [Osakwe 17]:

> "In this version of the model, we demonstrated that a necessary, but not a sufficient, condition for a flexible-rate regime to dominate either a collapsing or fixed-rate regime, in an economy buffeted by monetary, real demand, and capital flow shocks, is that the parameter capturing the real effects of unanticipated exchange rate changes in the aggregate demand equation be less than the sum of the parameters on the level of the real exchange rate and the interest rate."

However, this determination comes with a caveat. When using the second approach used by the model, which incorporates externalities and protection against system shocks, we are required to weight the importance the central bank of South Korea places on such shocks and exchange rate volatility. This is because the loss function directly ties to not only the variance of the real output of the South Korean economy, but also the real exchange rate of the South Korean currency.

Therefore, if we were to assume that the central bank *is* in fact buffering externalities, economic shocks, and exchange rate vulnerabilities through the use of forex reserves, we will need to weight the importance of such a buffer higher. This consequently results in a model which favors a fixed exchange rate peg.

Applicability to the Asian Crisis

Several corollaries can be gathered from the results of this analysis, which could be applied to the Asian Crisis of 1997-1998.

(A) One of the starting assumptions of the model was that under capital-market equilibrium conditions, the domestic interest rates would be equal to foreign interest rate. Therefore, to introduce capital flows into the model, foreign interest rate was assumed be a combination of constant rate and a foreign interest rate in the form of capital shocks. [Oswake 5] When this is examined further, we find that this relationship is in fact the inverse of what accounted for the current balance in (1).

When an exchange rate is fixed in either approach of the model, the inverse would result in a higher likelihood of disparity between interest rates. When such a disparity grows in favor of the domestic economy, it is likely to be strengthened by domestic economic forces, which follows by Stopler-Samuelson theorem that this would push political power towards those factors that were more favorable to domestic political and economic changes. [Rogowski 318]

In relation to the Asian Crisis, the disparity in interest rates only strengthened domestic financial and political institutions which favored the difference in the interest rates in favor of domestic economies, resulting in increased domestic logrolling furthering such actions. [Alt, Gilligan 340] [Oatley 340-342]

(B) Another assumption made by the model is that domestic money supply would consist of a domestic credit component and an international reserves component, and the domestic credit is assumed to grow at a constant rate, tied in with the domestic output of the economy in question.

However, a consequence of (A) would be a disparity between domestic and world market interest rates in favor of the domestic financial institutions. This would result in domestic financial institutions borrowing from the world markets to lend to domestic markets, resulting in a drastic increase in availability of domestic credit. Consequently, this would also have the side effect of increased domestic inflation.

In addition, this would also result in an increase in the cost of domestic raw materials (stemming from inflation), affecting imports and effectively reducing the output of the economy in question.

This could directly be tied to (2) and (3), when the difference in interest rates of the Asian economies increased with the fixed peg to the USD, resulting in increased domestic credit. In addition, the peg to the USD also had the unfortunate effect that when the USD rose, so did these currencies, adversely affecting their export regimes. The combination of these factors resulted in a decreased GDP, while the leveraged nature of their debt made it difficult for their central banks to quickly correct the disparities between short-term international borrowing and long-term domestic lending.

Conclusion

In conclusion, we find that the determination of any particular exchange rate regime is dependent on a multitude of domestic and international factors.

Applying the results of the model to before and after the Asian Crisis in South Korea yields some interesting results. In the absence of any economic volatility, the central bank favored a fixed peg over a fluctuating rate. This is line with the South Korean won prior to the Asian Crisis. However, as a consequence of the crisis, the South Korean won became a floating currency in 1997, owing to increased speculation and volatility.

Furthermore, a simple attempt at extending the results of the model to Singapore and Thailand also yielded similar results. However, this was not necessarily so in the case of Indonesia. There are several possible explanations towards why this could be so.

This paper only used the "Credible Regimes" approach from the model, and did not attempt to use the externalities and system shocks that come from a (then) politically unstable economy such as Indonesia. Furthermore, the model also assumes that the goal of a nation's fiscal and monetary institutions is to increased output (measured in terms of GDP) and increased stability of currency. However, other goals and factors, political (e.g. logrolling) or economic (e.g. short-term economic growth) could affect the fundamental assumptions behind this model [Osakwe 17].

Therefore, a future extension of this paper could potentially be to incorporate additional details of this model and similar models, and to evaluate their fit towards predicting exchange-rate regimes based on not just economic policies, but also societal and political conditions.

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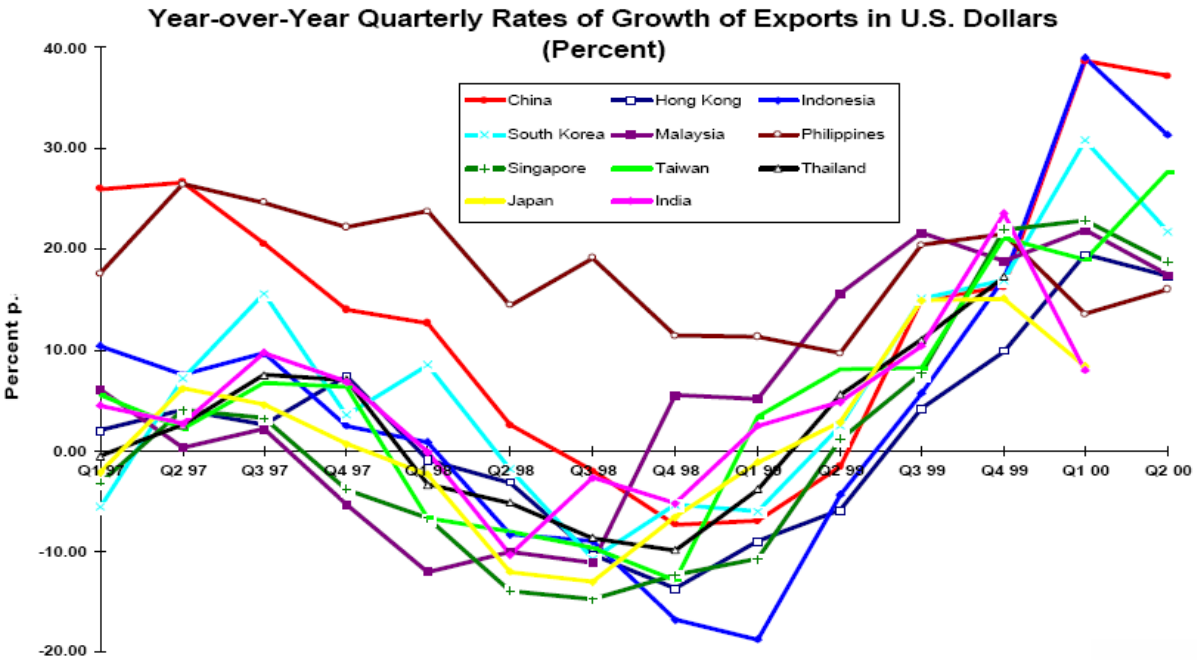
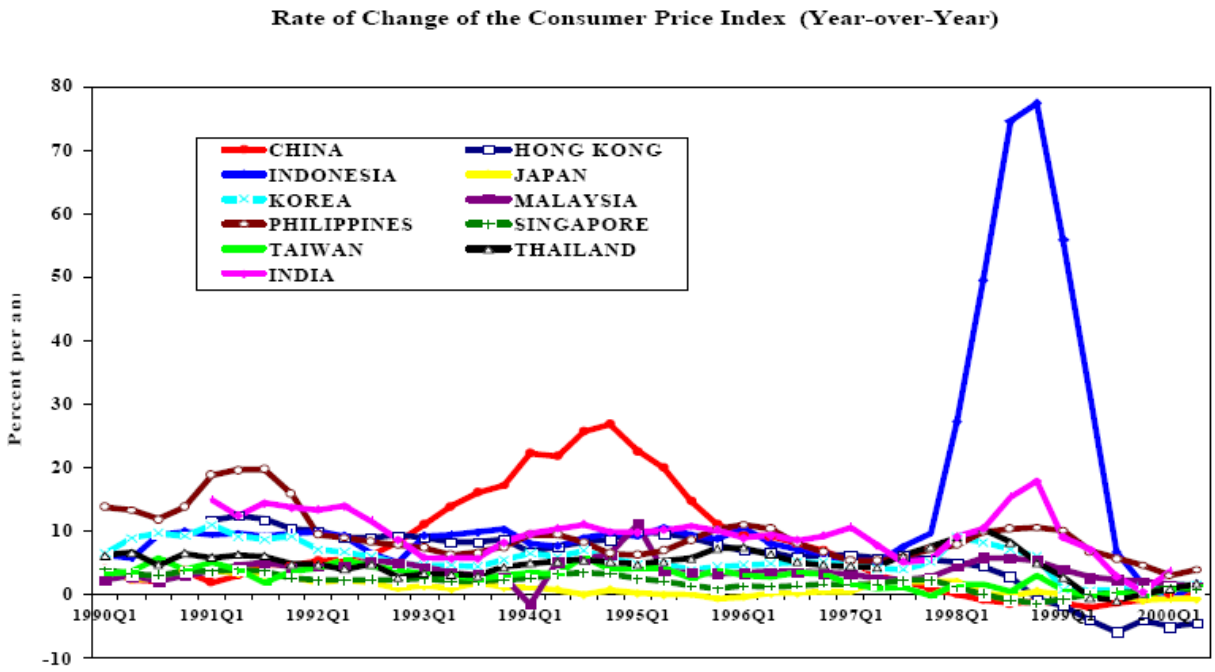
Appendix I – Year-over-Year Quarterly Rates of Growth of Exports in U.S. Dollars



***Source**: The East Asian Currency Crisis and Recovery, Lawrence J. Lau, Stanford University.*

Appendix II – Rate of Change of the Consumer Price Index (Year-over-Year)



***Source**: The East Asian Currency Crisis and Recovery, Lawrence J. Lau, Stanford University.*

Appendix I – International Monetary Fund World Economic Outlook Indicators (2009)

Country	Subject Descriptor	Units	Scale	1997	1998	1999
Indonesia	Gross domestic product, constant prices	National currency	Billions	1,506,602.70	1,308,835.10	1,319,189.64
Indonesia	Gross domestic product, constant prices	Annual percent change		4.7	-13.127	0.791
Indonesia	Gross domestic product, current prices	National currency	Billions	693,619.27	1,056,131.53	1,215,231.19
Indonesia	Gross domestic product, current prices	U.S. dollars	Billions	238.408	105.469	154.705
Indonesia	Gross domestic product, deflator	Index		46.039	80.692	92.12
Indonesia	Gross domestic product per capita, constant prices	National currency	Units	7,482,391.38	6,403,537.80	6,359,468.17
Indonesia	Gross domestic product per capita, current prices	National currency	Units	3,444,790.61	5,167,173.61	5,858,311.70
Indonesia	Gross domestic product per capita, current prices	U.S. dollars	Units	1,184.03	516.014	745.792
Indonesia	Output gap in percent of potential GDP	Percent of potential GDP				
Indonesia	Gross domestic product based on purchasing-power-parity (PPP) valuation of country GDP	Current international dollar	Billions	517.782	454.896	465.24
Indonesia	Gross domestic product based on purchasing-power-parity (PPP) per capita GDP	Current international dollar	Units	2,571.51	2,225.60	2,242.80
Indonesia	Gross domestic product based on purchasing-power-parity (PPP) share of world total	Percent		1.435	1.218	1.186
Indonesia	Implied PPP conversion rate	National currency per current international dollar		1,339.60	2,321.70	2,612.05
Indonesia	Investment	Percent of GDP				
Indonesia	Gross national savings	Percent of GDP				
Indonesia	Inflation, average consumer prices	Index, 2000=100		50.503	79.804	96.364
Indonesia	Inflation, average consumer prices	Annual percent change		6.194	58.02	20.75
Indonesia	Inflation, end of period consumer prices	Index, 2000=100		50.499	89.655	91.453
Indonesia	Inflation, end of period consumer prices	Annual percent change		10.268	77.538	2.005
Indonesia	Six-month London interbank offered rate (LIBOR)	Percent				
Indonesia	Unemployment rate	Percent of total labor force				
Indonesia	Employment	Persons	Millions			
Indonesia	Population	Persons	Millions	201.353	204.393	207.437
Indonesia	General government balance	National currency	Billions			
Indonesia	General government balance	Percent of GDP				
Indonesia	General government structural balance	National currency	Billions			
Indonesia	General government structural balance	Percent of potential GDP				

Indonesia	General government net debt	National currency	Billions			
Indonesia	General government net debt	Percent of GDP				
Indonesia	General government gross debt	National currency	Billions			
Indonesia	General government gross debt	Percent of GDP				
Indonesia	Current account balance	U.S. dollars	Billions	-3.8	4	5.752
Indonesia	Current account balance	Percent of GDP		-1.594	3.793	3.718
Japan	Gross domestic product, constant prices	National currency	Billions	500,066.40	489,820.70	489,130.00
Japan	Gross domestic product, constant prices	Annual percent change		1.564	-2.049	-0.141
Japan	Gross domestic product, current prices	National currency	Billions	515,644.20	504,905.40	497,628.50
Japan	Gross domestic product, current prices	U.S. dollars	Billions	4,261.84	3,857.03	4,368.73
Japan	Gross domestic product, deflator	Index		103.115	103.08	101.737
Japan	Gross domestic product per capita, constant prices	National currency	Units	3,968,437.13	3,876,738.18	3,863,982.87
Japan	Gross domestic product per capita, current prices	National currency	Units	4,092,059.75	3,996,127.65	3,931,118.52
Japan	Gross domestic product per capita, current prices	U.S. dollars	Units	33,821.23	30,526.86	34,511.71
Japan	Output gap in percent of potential GDP	Percent of potential GDP		1.213	-1.641	-2.325
Japan	Gross domestic product based on purchasing-power-parity (PPP) valuation of country GDP	Current international dollar	Billions	3,046.18	3,017.48	3,057.56
Japan	Gross domestic product based on purchasing-power-parity (PPP) per capita GDP	Current international dollar	Units	24,173.95	23,882.16	24,153.78
Japan	Gross domestic product based on purchasing-power-parity (PPP) share of world total	Percent		8.443	8.077	7.797
Japan	Implied PPP conversion rate	National currency per current international dollar		169.276	167.327	162.754
Japan	Investment	Percent of GDP		28.342	26.256	24.848
Japan	Gross national savings	Percent of GDP		30.643	29.226	27.496
Japan	Inflation, average consumer prices	Index, 2000=100		100.489	101.076	100.783
Japan	Inflation, average consumer prices	Annual percent change		1.885	0.584	-0.29
Japan	Inflation, end of period consumer prices	Index, 2000=100		100.98	101.569	100.49
Japan	Inflation, end of period consumer prices	Annual percent change		1.879	0.583	-1.062
Japan	Six-month London interbank offered rate (LIBOR)	Percent		0.654	0.711	0.239
Japan	Unemployment rate	Percent of total labor force		3.395	4.106	4.676
Japan	Employment	Persons	Millions	65.569	65.14	64.618
Japan	Population	Persons	Millions	126.011	126.349	126.587
Japan	General government balance	National currency	Billions	-20,775.30	-28,277.70	-36,904.80

Japan	General government balance	Percent of GDP		-4.029	-5.601	-7.416
Japan	General government structural balance	National currency	Billions	-22,769.77	-25,674.06	-32,970.76
Japan	General government structural balance	Percent of potential GDP		-4.469	-5.001	-6.472
Japan	General government net debt	National currency	Billions	179,236.90	233,279.50	267,877.90
Japan	General government net debt	Percent of GDP		34.76	46.203	53.831
Japan	General government gross debt	National currency	Billions	552,386.60	606,332.20	665,790.90
Japan	General government gross debt	Percent of GDP		107.126	120.088	133.793
Japan	Current account balance	U.S. dollars	Billions	96.553	119.065	114.526
Japan	Current account balance	Percent of GDP		2.266	3.087	2.622
Malaysia	Gross domestic product, constant prices	National currency	Billions	333.516	308.972	327.935
Malaysia	Gross domestic product, constant prices	Annual percent change		7.323	-7.359	6.138
Malaysia	Gross domestic product, current prices	National currency	Billions	286.051	287.521	305.307
Malaysia	Gross domestic product, current prices	U.S. dollars	Billions	101.682	73.265	80.344
Malaysia	Gross domestic product, deflator	Index		85.768	93.057	93.1
Malaysia	Gross domestic product per capita, constant prices	National currency	Units	15,393.89	13,930.50	14,438.91
Malaysia	Gross domestic product per capita, current prices	National currency	Units	13,203.06	12,963.36	13,442.62
Malaysia	Gross domestic product per capita, current prices	U.S. dollars	Units	4,693.25	3,303.27	3,537.53
Malaysia	Output gap in percent of potential GDP	Percent of potential GDP				
Malaysia	Gross domestic product based on purchasing-power-parity (PPP) valuation of country GDP	Current international dollar	Billions	190.494	178.469	192.209
Malaysia	Gross domestic product based on purchasing-power-parity (PPP) per capita GDP	Current international dollar	Units	8,792.51	8,046.55	8,462.92
Malaysia	Gross domestic product based on purchasing-power-parity (PPP) share of world total	Percent		0.528	0.478	0.49
Malaysia	Implied PPP conversion rate	National currency per current international dollar		1.502	1.611	1.588
Malaysia	Investment	Percent of GDP				
Malaysia	Gross national savings	Percent of GDP				
Malaysia	Inflation, average consumer prices	Index, 2000=100		91.036	95.855	98.473
Malaysia	Inflation, average consumer prices	Annual percent change		2.655	5.293	2.731
Malaysia	Inflation, end of period consumer prices	Index, 2000=100		91.568	96.432	98.811
Malaysia	Inflation, end of period consumer prices	Annual percent change		2.916	5.313	2.466
Malaysia	Six-month London interbank offered rate (LIBOR)	Percent				

Malaysia	Unemployment rate	Percent of total labor force				
Malaysia	Employment	Persons	Millions			
Malaysia	Population	Persons	Millions	21.666	22.18	22.712
Malaysia	General government balance	National currency	Billions			
Malaysia	General government balance	Percent of GDP				
Malaysia	General government structural balance	National currency	Billions			
Malaysia	General government structural balance	Percent of potential GDP				
Malaysia	General government net debt	National currency	Billions			
Malaysia	General government net debt	Percent of GDP				
Malaysia	General government gross debt	National currency	Billions			
Malaysia	General government gross debt	Percent of GDP				
Malaysia	Current account balance	U.S. dollars	Billions	-5.935	9.529	12.604
Malaysia	Current account balance	Percent of GDP		-5.837	13.006	15.687
Philippines	Gross domestic product, constant prices	National currency	Billions	893.151	888	918.16
Philippines	Gross domestic product, constant prices	Annual percent change		5.185	-0.577	3.396
Philippines	Gross domestic product, current prices	National currency	Billions	2,426.74	2,665.06	2,976.91
Philippines	Gross domestic product, current prices	U.S. dollars	Billions	83.736	66.596	76.157
Philippines	Gross domestic product, deflator	Index		271.706	300.119	324.225
Philippines	Gross domestic product per capita, constant prices	National currency	Units	12,482.93	12,139.81	12,283.77
Philippines	Gross domestic product per capita, current prices	National currency	Units	33,916.84	36,433.91	39,827.05
Philippines	Gross domestic product per capita, current prices	U.S. dollars	Units	1,170.32	910.436	1,018.88
Philippines	Output gap in percent of potential GDP	Percent of potential GDP				
Philippines	Gross domestic product based on purchasing-power-parity (PPP) valuation of country GDP	Current international dollar	Billions	156.337	157.191	164.921
Philippines	Gross domestic product based on purchasing-power-parity (PPP) per capita GDP	Current international dollar	Units	2,185.01	2,148.96	2,206.43
Philippines	Gross domestic product based on purchasing-power-parity (PPP) share of world total	Percent		0.433	0.421	0.421
Philippines	Implied PPP conversion rate	National currency per current international dollar		15.523	16.954	18.05
Philippines	Investment	Percent of GDP				
Philippines	Gross national savings	Percent of GDP				
Philippines	Inflation, average consumer prices	Index, 2000=100		82.409	90.405	96.183
Philippines	Inflation, average consumer prices	Annual percent change		5.848	9.703	6.391
Philippines	Inflation, end of period consumer prices	Index, 2000=100		81.933	90.372	93.897

Philippines	Inflation, end of period consumer prices	Annual percent change		7.3	10.3	3.9
Philippines	Six-month London interbank offered rate (LIBOR)	Percent				
Philippines	Unemployment rate	Percent of total labor force				
Philippines	Employment	Persons	Millions			
Philippines	Population	Persons	Millions	71.55	73.148	74.746
Philippines	General government balance	National currency	Billions			
Philippines	General government balance	Percent of GDP				
Philippines	General government structural balance	National currency	Billions			
Philippines	General government structural balance	Percent of potential GDP				
Philippines	General government net debt	National currency	Billions			
Philippines	General government net debt	Percent of GDP				
Philippines	General government gross debt	National currency	Billions			
Philippines	General government gross debt	Percent of GDP				
Philippines	Current account balance	U.S. dollars	Billions	-4.33	1.51	-2.874
Philippines	Current account balance	Percent of GDP		-5.171	2.268	-3.774
Singapore	Gross domestic product, constant prices	National currency	Billions	137.364	135.473	145.23
Singapore	Gross domestic product, constant prices	Annual percent change		8.341	-1.377	7.202
Singapore	Gross domestic product, current prices	National currency	Billions	142.341	137.902	140.022
Singapore	Gross domestic product, current prices	U.S. dollars	Billions	95.865	82.399	82.611
Singapore	Gross domestic product, deflator	Index		103.623	101.794	96.414
Singapore	Gross domestic product per capita, constant prices	National currency	Units	36,186.51	34,495.98	36,686.24
Singapore	Gross domestic product per capita, current prices	National currency	Units	37,497.71	35,114.69	35,370.63
Singapore	Gross domestic product per capita, current prices	U.S. dollars	Units	25,254.28	20,981.51	20,868.16
Singapore	Output gap in percent of potential GDP	Percent of potential GDP				
Singapore	Gross domestic product based on purchasing-power-parity (PPP) valuation of country GDP	Current international dollar	Billions	108.509	108.224	117.726
Singapore	Gross domestic product based on purchasing-power-parity (PPP) per capita GDP	Current international dollar	Units	28,585.21	27,557.65	29,738.55
Singapore	Gross domestic product based on purchasing-power-parity (PPP) share of world total	Percent		0.301	0.29	0.301
Singapore	Implied PPP conversion rate	National currency per current international dollar		1.312	1.274	1.189
Singapore	Investment	Percent of GDP				
Singapore	Gross national savings	Percent of GDP				
Singapore	Inflation, average consumer prices	Index, 2000=100		98.915	98.647	98.67

Singapore	Inflation, average consumer prices	Annual percent change		2.023	-0.271	0.024
Singapore	Inflation, end of period consumer prices	Index, 2000=100		98.731	97.321	97.981
Singapore	Inflation, end of period consumer prices	Annual percent change		2.047	-1.428	0.678
Singapore	Six-month London interbank offered rate (LIBOR)	Percent				
Singapore	Unemployment rate	Percent of total labor force		1.425	2.5	2.8
Singapore	Employment	Persons	Millions	1.849	1.883	1.921
Singapore	Population	Persons	Millions	3.796	3.927	3.959
Singapore	General government balance	National currency	Billions	13.031	4.961	6.383
Singapore	General government balance	Percent of GDP		9.155	3.597	4.559
Singapore	General government structural balance	National currency	Billions			
Singapore	General government structural balance	Percent of potential GDP				
Singapore	General government net debt	National currency	Billions			
Singapore	General government net debt	Percent of GDP				
Singapore	General government gross debt	National currency	Billions			
Singapore	General government gross debt	Percent of GDP				
Singapore	Current account balance	U.S. dollars	Billions	14.874	18.298	14.356
Singapore	Current account balance	Percent of GDP		15.516	22.206	17.377
Thailand	Gross domestic product, constant prices	National currency	Billions	3,072.62	2,749.68	2,871.98
Thailand	Gross domestic product, constant prices	Annual percent change		-1.371	-10.51	4.448
Thailand	Gross domestic product, current prices	National currency	Billions	4,732.61	4,626.45	4,637.08
Thailand	Gross domestic product, current prices	U.S. dollars	Billions	150.891	111.86	122.63
Thailand	Gross domestic product, deflator	Index		154.025	168.254	161.459
Thailand	Gross domestic product per capita, constant prices	National currency	Units	50,829.03	44,951.51	46,487.21
Thailand	Gross domestic product per capita, current prices	National currency	Units	78,289.66	75,632.61	75,057.93
Thailand	Gross domestic product per capita, current prices	U.S. dollars	Units	2,496.14	1,828.67	1,984.94
Thailand	Output gap in percent of potential GDP	Percent of potential GDP				
Thailand	Gross domestic product based on purchasing-power-parity (PPP) valuation of country GDP	Current international dollar	Billions	301.664	273.009	289.347
Thailand	Gross domestic product based on purchasing-power-parity (PPP) per capita GDP	Current international dollar	Units	4,990.31	4,463.12	4,683.51
Thailand	Gross domestic product based on purchasing-power-parity (PPP) share of world total	Percent		0.836	0.731	0.738

Thailand	Implied PPP conversion rate	National currency per current international dollar		15.688	16.946	16.026
Thailand	Investment	Percent of GDP				
Thailand	Gross national savings	Percent of GDP				
Thailand	Inflation, average consumer prices	Index, 2000=100		90.849	98.19	98.493
Thailand	Inflation, average consumer prices	Annual percent change		5.583	8.08	0.308
Thailand	Inflation, end of period consumer prices	Index, 2000=100		93.917	97.924	98.608
Thailand	Inflation, end of period consumer prices	Annual percent change		7.615	4.266	0.699
Thailand	Six-month London interbank offered rate (LIBOR)	Percent				
Thailand	Unemployment rate	Percent of total labor force				
Thailand	Employment	Persons	Millions			
Thailand	Population	Persons	Millions	60.45	61.17	61.78
Thailand	General government balance	National currency	Billions			
Thailand	General government balance	Percent of GDP				
Thailand	General government structural balance	National currency	Billions			
Thailand	General government structural balance	Percent of potential GDP				
Thailand	General government net debt	National currency	Billions			
Thailand	General government net debt	Percent of GDP				
Thailand	General government gross debt	National currency	Billions			
Thailand	General government gross debt	Percent of GDP				
Thailand	Current account balance	U.S. dollars	Billions	-3.11	14.291	12.466
Thailand	Current account balance	Percent of GDP		-2.061	12.776	10.166