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A Calculus of Participation Approach to Monetary Integration in Asia

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I. Introduction

There are two related but separate questions to be answered when one discusses the topic of a monetary union. The first and more conventional question is what kind of monetary union is desirable for each participating country, for the union, and for the world as a whole. In other words, the question is what the ideal size and operation of a currency union are. This question is an economic question because it is concerned with the economic benefits and costs of a union and a normative question because what kind of configuration of currency areas should be adopted for the world.

The other question often ignored is as follows: Under what conditions a monetary union will be established as the result of the motivated choice of participating nations? This question is of political-economic nature rather than purely economic nature, and it is a positive question rather than a normative one. It asks what kind of monetary unions is likely to be realized if we consider the political incentives of (potentially) participating nations. Given the long history of European Union and the establishment of the euro Zone, Asian nations are contemplating whether to create a monetary union with more or less fixed exchange rates among their currencies or a common currency area in Asia.

This study addresses the latter, political-economic, and positive aspect of monetary integration as well as regime choices. Instead of studying what will be the

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benefits when a monetary union is achieved, we ask under what circumstances economic agents are motivated to join such a union. We also ask under what circumstances other countries outside a proposed Asian monetary union will be affected.

Methodologically, most of the approaches to international monetary regime have been a "mechanism design" approach that studies how to construct a system that works the best for all the participants. Here we take an incentive oriented approach, which may be called the calculus of participation approach, and ask if there is sufficient incentives for nations or governments to participate in the arrangement. Unless there are incentives for participating in a joint action, the plan will be like "pie in the sky" (or a "painted rice cake" in a Japanese expression). Remember the Aesop fable of a cat and mice. Mice think the best is realized by putting a bell on a cat, but the real problem is who dares to do the job! One can conceive of the ideal reform plans for an international monetary arrangement, but unless nations are motivated to agree on the system, the arrangement will never materialize.

The logic of collective action was studied in public economics (Olson, 1965). Joining a monetary union is, however, not merely an act of creating a public good. It is more precisely an act of joining a club, which provides community services to its participants but possibly excludes the services from non-participants. A creation of a monetary union and the process of monetary integration are appropriate topics of the theory of clubs, a branch of public choice theory (Buchanan, 1964).

Each nation has a minimum reservation utility. Without being secured of the minimum reservation utility level, a nation cannot participate in a joint action. In the language of game theory, each nation should satisfy the "individual (national) rationality." In an uncertain world, the "incentive compatibility" matters as well, but in this paper we abstract from the element of asymmetric information.

In reality, a national government consists of various groups that have differences in opinions and conflicting interests and is sustained upon the balance of conflicting opinions. Thus, negotiators and governments conduct negotiations subject to domestic political constraints. The <u>two-level</u> game theory illuminates the aspect that the negotiators are allowed to use only limited options in the presence of domestic conflicts. The fact that governments are bound may not always be disadvantageous. The

pre-commitment to certain actions may be advantageous, as tightly bound Ulysses could hear songs of Sirens without risking his life.[1]

Bagwell and Staiger (1990, 1997) analyze the time pattern of the benefit-cost structure of a collective action and institution building like the World Trade Organization (WTO) and the strength of willingness over time to commit to or to defect from a cooperative action. We will show the time profile of the benefit and cost of joining a monetary union affects the incentive of national governments to join the union.

Taking the attempt to create various alternative forms of monetary integration in Asia, this paper emphasizes the positive and political-economic approach to monetary integration rather than the normative and mechanism design approach to monetary union. It will exploit insight from public economics and the theory of clubs, in particular, from its calculus of participation.

In Section II, we review various forms of monetary integration proposed in Asia: (fixed) exchange rate union, the use of market basket, pegging to the dollar, and a complete unification of the currency. We discuss the benefits and costs that those regimes will provide to participating nations and the time profile by which these benefits and costs are provided and incurred. We will touch on the political cost, or the cost politicians and central bankers may perceive as the loss of control. The process of European Monetary Unification can be regarded as a process from the more or less flexible type of regime to the fixed exchange and even to a single currency regime.

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[1] The process of agreeing on a regime and playing by the rules of that agreement was conceived as a two-stage game (Hamada, 1985). The game of agreeing on rules of a game, or agreeing on an alternative regime is played while the game of policy interplays continue under a given ongoing regime. The first stage is a (sub)game of choosing an international regime and the second stage is a (sub)game of policy interplays. Here one can apply the principle of backward induction. If there is a reasonable policy outcome for each policy game under a given regime, then one could solve, by backward induction, the game of choosing an international regime. Only when the outcomes of the policy game are credible, would the game of choosing a regime be equivalent to the choice among these outcomes. If one restricts the equilibrium to Nash equilibrium, the requirement will be essentially that of "subgame perfect."

In Section III, we apply the calculus of participation to understand why some attempts at monetary integration succeeded and others failed in the past, and why an international regime was agreed to by participants and collapsed at a certain time. This section is a theoretical sketch of historical events (Capie, 1997), which we hope to elucidate our prospect for an Asian monetary union.

The main purpose of this paper is to set the whole question of monetary integration into a proper political economic framework. Detailed quantitative studies on the benefits and costs, and, as equally importantly, on the perceived benefits and costs will need further work in the future. We will consider in Section IV, however, how the process of European monetary integration and the introduction of the Euro illustrate the relative magnitude of the benefit costs. At the same time, the recent performance of Hongkong, China, under the fixed exchange rate will be referred as a case in point.

In Section V, we apply the calculus of participation to the prospect of Asian monetary integration. We are concerned not so much with the potential benefits of creating a monetary union to countries and to the world as the plausible prospects of making a monetary union politically feasible.

In the Concluding Section, we sketch the role of ideas and perceptions in the process of monetary integration. We regards that the benefits and costs, and their time profiles are most important determinants of materializing a monetary union. At the same time, the role of political and intellectual leadership must have been critical. It would be impossible to conceive the existence of the Euro area, for example, without the entrepreneurship of Robert Triffin.

II. Forms of Monetary Integration: Their Definitions, and Benefits

There are alternative forms of international monetary integration, and the costs as well as benefits of joining a union or cooperation for a participating country differ according to the form of monetary union (Hamada and Porteous, 1992) Alternative forms of monetary integration are arranged roughly form weaker forms to tighter forms.[2]

(1) In the weakest form, monetary integration implies the linking of national currencies with fixed parities accompanied by a narrowing or vanishing band of exchange without common reserves or a common central bank. This is what Corden (1972) called the pseudo-exchange rate union. The coordination of economic policies, particularly monetary policies, is needed to prevent disequilibria in the balance of payments. There are a few examples of this union.

(1a) Fixed Exchange Rates by Political Commitment:

Governments can announce the fixity of exchange rates. The degree by which the public believes in the endurance of the fixed exchange rates depends on many economic and political factors. The Adjustable Peg (Bretton Woods) Regime was a variation of this. Gold played the role of an anchor for the fixed parity initially but later lost its importance. Most notably, there was a kind of escape clause from the system. Participants could change the parity if it was under the "fundamental disequilibrium," a phrase that caused lots of policy controversies and academic discussions but was never defined clearly by the IMF.

(1b) Metallic Standard such as the Gold Standard and other Commodity Standards:

Here a metal or commodities are used as an anchor for keeping the fixed exchange parities among currencies. Thorough the species flow mechanism, coordination of monetary policy is supposed to function automatically. In this regime, however, the credibility of the constancy of parities is not absolute. Governments have the choice to change the parities of currency to gold, for example. History abounds with examples where credibility for the parities eroded, and where governments betrayed the expectation of the public on the fixed parity.

[2] The term "monetary integration" or "monetary unification" encompasses varying degrees of integration, and it is usually used for the union of a group of countries and not for all countries of the world.

(2) The degree of monetary integration is enhanced by the establishment of public confidence in the irrevocable nature of the fixed exchange parities, accompanied by full convertibility between currencies for capital and current account transactions. This confidence normally emerges only after a substantial transition period during which de facto fixed exchange parities are successfully maintained or after some kind of political unification.

(3) Full monetary integration or unification is only realized when a common currency issued by a single central bank circulates in the area of the monetary union. We can divide two cases for this single money case.

(3a) A unified currency in an area where multiple governments exist: This is the situation after the unified money, Euro, has been circulated in the Euro Zone. Each participating nation retains the right to exit the union, and an exit option will be conceptually possible. But, in practice, to leave a currency union where a single money circulates will be extremely difficult. This adds to the credibility of the continuation of the currency union.

(3b) The circulation of a unified money with a single government: A single currency circulates in a region. Since the government is also unified, discrepancy of fiscal policy can be neglected. More importantly, people believe that this currency area will never be divided again. For example, after the German unification, Germans trusted in the irrevocable "exchange rate" between the D-Mark and the O-Mark again. In this regime, in general, the credibility of the fixed parity is warranted by the sole medium of exchanges, and taking an exit option is out of the question as long as political unity persists. Historically, as is seen in the next Section, a single money with a unified government could resolve into a region with multiple currencies.

Under the floating regime, monetary authorities can engage in cooperative actions to keep exchange rates in a certain range, or a zone. Naturally, joint interventions are more effective than unilateral interventions. As shown in Hamada (1985), the fixed exchange rate necessitates, at least partially, exchange rate coordination by the nature of its rule, and, if not necessitated, coordination has a positive benefit under

the fixed exchange rate. Under the flexible exchange rate, national monetary authorities recover the independence of monetary policy. The need for, as well as the benefit from, coordination becomes almost negligible. Often the call for exchange rate coordination under flexible rates may result in denying the very merit of the flexible exchange rate regime.

Now let us turn to the basic benefits and costs of attempting monetary integration. The benefits from monetary integration are of microeconomic nature: users of a common currency economize on information costs and transaction costs. A member of a monetary union enjoys the benefits of increased trade as a result of the reduction or even disappearance of uncertainty about fluctuations in the exchange rates among member currencies. This benefit is partially delivered by a pseudo-exchange union but substantially realized only after the emergence of public confidence in the fixity of exchange rates. Only after full monetary unification is achieved, are the transactions costs arising from currency conversion eliminated, and the consequent benefits of increased trade and tourism enjoyed. Recent provocative studies by Frankel and Rose (*e.g.*, Frankel and Rose, 2002; Rose 2002; Rose and E. Engel, 2002) show mostly by the gravity method of estimation that the last stage's benefits, *i.e.*, the trade creation effect by a single currency are unexpectedly large. Roughly speaking, adoption of a single money across the national border will enhance trade across it by three times.

These microeconomic benefits are closely associated with the function of money as a medium of exchange. Money economizes on the information costs required for transactions and allows for the procurement of a stable bundle of goods at a lower cost than under barter. For an attempt to analyze the nature of this cost saving, see Ryou (2003). The use of a common currency carries an intrinsic externality as a result of its informational properties. These benefits from economy of transaction costs and from information spillover are of non-rivalry nature for consumption; moreover, enjoyment by one member does not reduce the enjoyment of other members. This non-exclusiveness in enjoyment is one characteristic of a public good. These benefits of complete monetary integration are obtained only partly by the adoption of the fixed exchange rate regime.

A secondary benefit from monetary integration is macroeconomic. Mundell's theory of policy assignment indicates that the effect of regionally specific real shocks may be absorbed by flexible exchange rates (Mundell, 1968). However, recent studies on regime choice show that country, foreign, specific monetary shocks can be better managed under fixed exchange rates or under highly managed exchange rates (e.g. Boyer 1978, Fukuda and Hamada 1987, Eichengreen, 1998).

Thus the primary benefits of joining a monetary union are microeconomic, and the macroeconomic benefits are limited to smoothing monetary disturbance. In contrast, the costs are mainly macroeconomic, and they are the cost of making each country vulnerable to real country-specific shock. By joining a monetary union, or by adopting a fixed exchange rate, a country has to give up its monetary independence. It is particularly true when international capital mobility is high and when wages and prices are rigid for some reason. Therefore a nation must sacrifice the attainment of locally desired levels of unemployment and prices. The floating exchange rate system gives national economies the opportunity to secure the minimum state of affairs that can be obtained independently, that is, the opportunity to follow a maxi-min strategy in the interplay of monetary policies. By joining a monetary union, a country gives up this maxi-min position and must adhere to the mutual consensus that results from policy coordination. Since countries differ in their rates of productivity growth, and in their preferences concerning the choice between unemployment and inflation, a fixed exchange rate or a single currency often means that the participating countries or regions will have to sacrifice attainment of their individual policy objectives.

Another cost, which that was explicitly recognized in the 19th century, was somewhat neglected later, and recently reemphasized, is the foregoing of seigniorage revenues. If countries allowed foreign coins under a metallic system to circulate within their borders as legal tender, they gave up the coinage charge which they could have earned by reminting the foreign coins into their own currency. Today, seigniorage is earned through requiring the holding of currency on which no return is paid, for example, through required bank reserves. Differences in the degree of dependence on seigniorage revenues among potential member countries in a currency union mean that the opportunity costs of foregoing this revenue are unevenly distributed. Large differences

could be the potential to destabilize a union (Grilli, 1989). Although individual nations may forfeit seigniorage on their own currencies as the result of creating a unified currency, seigniorage revenue may be earned instead on the common currency in a monetary union. Whether a member would, on balance, lose from foregoing seigniorage at the national level would depend on the mechanisms stipulated for distribution of common revenues amongst members.

In general, the benefits and costs of monetary integration have several characteristics. First, in contrast to the benefits of monetary integration, which are to be enjoyed collectively and have a public-good nature, the sacrifices made by joining a monetary union are of not public nature but mostly individually national nature. This contrast between the benefits and costs of monetary integration is a crucial element when we apply below the calculus of participation to the incentive problem of monetary integration.

Second, the benefit-cost payoff to participating countries changes over time. Initially, the costs of sacrificing domestic economic objectives and an independent monetary policy are large. As capital market integration proceeds, so the financing of fiscal deficits becomes easier and hence these adjustment costs become smaller. However, the common benefits of monetary integration are usually enjoyed only at a later stage when the credibility of fixity of exchange rates is established or when currencies are unified into a single one. For example, the saving of the costs of currency conversion occurs only after a complete exchange rate union has been attained, and the benefits arising from the stability of exchange rates can be reaped only after confidence in the fixity of parities has been established. Unless a single money is introduced at an early stage of monetary integration, the benefits may be attained only in the long run, and uncertainty remains as to whether they will actually be realized or not. On the other hand, the costs of sacrificing an independent monetary policy are incurred with certainty at an early stage.

The only way to make the time profile of the benefits lean toward the present is to adopt a single currency. In fact, the Euro Zone attempted with apparently considerable success. I mentioned “apparently” because the assessment of the great experiment of the Euro should be made with caution as will be discussed later.

Third, the openness to trade and factor flows of the economy of a monetary union member country has an important influence on the magnitude of the benefits and costs which she derives from monetary integration. If an economy is relatively open, with large import and export flows relative to domestic transactions, the costs of adjusting its output or employment level for balance of payments reasons will be small (McKinnon 1963). The savings in currency conversion costs will also be proportionately larger in a more open economy. If the economy is closed, however, these savings will be less significant, while the costs of adjustment will be relatively large. Prior integration of the markets for goods and services and factors of production among member countries may increase the desirability of monetary integration by increasing average levels of openness.[3]

Finally, we have to note the asymmetry of incentives between those for forming or participating in a monetary union, or participating in a regime of the fixed exchange rate, and those for leaving it. Usually, a nation can unilaterally leave a monetary union or a fixed exchange rate regime (except for the single money system), but to form or to join a monetary union or a fixed exchange rate system requires a collective action.

III. A Calculus of Participation Approach.

Given the benefits and costs of joining a monetary union, let us study the incentive for each nation to join a monetary union (Hamada 1985, Ch. 3). According to the theory of rational participation (for example, Riker and Ordeshook 1973, Chapter 3), an individual decision unit decides to participate in a collective action if the expected benefit is larger than the expected cost. The rational decision for a country contemplating membership in a monetary union is to join if the benefits from participation, such as the reduction in uncertainty, are larger than the costs, such as the sacrifice of an independent monetary policy.

When the benefits of collective action exhibit a public-good character, however, the amount of collective action may be less than Pareto optimal. Olson showed this by

[3] Feldstein (1992) makes the case that monetary integration is not a necessary condition for the benefits of other forms of economic integration to be enjoyed..

applying the theory of public goods to collective action (Olson 1965; Olson and Zeckhauser 1966). Following the Samuelson principles of public goods provision, a rational individual decides on the level of public good provision by equating the marginal private benefit from the public good with the marginal cost of supplying a unit of the good. Thus, the supply of the public good may be less than optimal because an individual decision unit does not take account of the external effect on other decision units. Therefore, even when a consensus exists concerning the objective of a collective action, the amount produced may be too small.

Let us proceed to examine the process of forming a monetary union. The process of the rule-making or institution-building process of international monetary unification followed by the interplay of macroeconomic policy under the agreed-upon rule can be formulated as a two-stage game (see, Hamada 1985, 1992). The choice can be decomposed into the choice of a regime and the subgame of policy interactions under the rule chosen in the first stage. The subgame of the first stage has a pay-off structure of the "Battle of the Sexes," because the present status quo continues unless a new rule is agreed upon. The backward induction, or more precisely the logic of sub-game perfectness, makes the choice of regimes to predict the final outcome generated by interplays of macroeconomic policies.

In a game situation, each participant is considered to satisfy the individual rationality constraint that each participant is secured at least the initial utility level. In the international sphere, naturally national governments are considered to require the national, rationality constraint.

In the real world, however, active players are not limited to nations. Interest groups within a country are affected by the same regime in a different manner. Some of them are opposed to the new regime and some welcome it. Therefore, in order to make everybody happy, the reservation utility level of each group should be satisfied. In other words, (individual) group rationality constraint would be required. In many political situations, of course, politicians do not need to satisfy all the interest groups. A government can reach other nations as long as it does not endanger the political power in a nation, that is, as long as it would not jeopardize the election. This idea was formalized by Putnam (1988) and others as "two-level" games, where groups impose restrictions on

the government concerning feasible choices in international negotiations. If the national representation does not follow the restrictions, the government will not be re-elected. In this two-level game approach, the "win-set" is defined as the set of actions (or outcomes) in the international strategy space that would allow the re-election of the incumbent government. If the government is able to reconcile the domestic opposition, by political maneuver, the "win-set" will be enlarged so that more opportunities emerge for reaching an international agreement. Thus, nations are players, but actually there are many sub-groups behind a nation and nations are constrained within some win-set because they should be re-elected by the majority voting rule. Therefore, the negotiator's choice is restricted by the, so-to-speak, win-set rationality.

To join in a monetary union is also a joint action that may affect groups in a country differently. If a common currency area brings price stability and price stability affects wage earners unfavorably relative to landlords, then the logic of "two-level" game will apply. Also, monetary integration is welcomed by the industry but not by the Central Bank that loses independence of monetary policy and seigniorage, then the government is constrained by the preference of the central bank.

Let us illustrate the strategic structure of the game of regime choices and policy interactions. Forget all the realistic complications like conflicts of group interests within a nation and assume that there are two governments as players, A and B, who behave according to their national interest.

Under the flexible rates, monetary policy retains autonomy. In particular, in the long run, or if the two economics are in the classical world where money is neutral, there is no interdependence in monetary policy. Even if there is some interdependence, which is characterized as the relationship of "strategic complements," autonomous monetary in each country policy can usually choose the best point on the Phillips curve, namely, the trade-off between inflation and unemployment. Accordingly, the situation leaves little conflict of interest or strategic interaction between countries.

Under the fixed rate, the price level becomes a kind of common variable across the national border and takes on the nature of public good.

The level of international reserves should be maintained. Because of the economy of transactions and information cost, the fixed-rate system may enjoy a certain advantage over the flexible rates because of the savings in transaction and information costs. Each country cannot attain by itself the desired combination of inflation rate and levels of international reserves because participating countries to a fixed exchange rate union or to a currency union cannot choose independent price level. Reaction of monetary policy depicts the property of "strategic substitutes." If one country contracts its money supply, then the other country has to contract its money supply as well, though not proportionally, in order to prevent the loss in international reserves. Thus, the Nash equilibrium of mutually independent actions of monetary policy may result in the inflationary or the deflationary side of the Pareto frontier depends on the supply of outside money to the world (Hamada, 1985).

Let us return to the starting point that the process of joining a monetary union and interacting by macroeconomic policy is a two-stage game. The process of joining a monetary union is affected by the anticipated the policy interaction game of the second stage. Here, if a nation to decide to join in a monetary union, then the nation will be benefited by savings of transaction and information costs. The savings are certainly substantial. If the nation has a history of inflationary management, it will enjoy the benefit of reputation effect that it cannot engage in inflationary policies because it abandons independent monetary policy. Moreover, politicians and economic diplomats may enjoy the prestige value that they belong to a larger monetary union rather than merely to their nation.

On the other hand, the cost side is obvious. By abandoning automatic monetary policy, a nation imposes a limitation to the effectiveness of monetary policy under a fixed exchange rate regime, and gives up monetary policy entirely under a single currency. Fiscal policy remains to the nation's discretion to some extent, but if its power of smoothing business cycles are

limited.

When exogenous real shocks are highly correlated, or, in other words, individual nations within the region are subject to similar shocks, then the need for independent monetary policy is not so great. In such a case, nations can endure the common price level. Also, when exogenous shocks are stable and nations are patient, the probable outcomes are favorable cooperative solutions that emerge from trigger strategies as the Folk theorem of repeated game theory implies. Therefore, one can state that *under synchronized shocks among the member countries and under stable and synchronized macroeconomic disturbances, the choice of international monetary regimes tends to favor the fixed exchange rate and a monetary unification.*

If macroeconomic disturbances are prevalent, and they affect countries in different ways, countries prefer flexible exchange rates. Under such conditions, a uniform currency gives hard burdens to participating countries, and the fixed exchange rate regime is at any time under the pressure to shift back to flexible exchange rates. *Under volatile desynchronized macroeconomic disturbances, nations favor the flexible exchange rate*.

Here enters the role of political leadership or entrepreneurship. As Frohlich, Oppenheimer and Young (1971) developed years ago, politicians develop their influence by spending money and effort in order to gain more rewards in terms of political power, votes and influence. According to them, politicians input resources as long as the marginal gain from political efforts is more than their marginal costs. Since they equate the marginal gain of leadership to the marginal cost, they will obtain “leadership surplus” just like consumers obtain “consumers’ surplus.”

The view that each country needs individual national rationality or win-set rationality seems to be the core of the “liberal” view of the international political economy. The concept of the win-set illustrates the difficulty for national governments to agree to engage in fruitful policy coordination.

Consider a situation of a two-level game where an international

agreement brings gains to a nation as a whole in terms of national income, but the outcome is not in the win-set because it hurts a group of important voters. There are two ways for a politician to manage this situation. One way is to change the image or perception of the benefit-cost structure. Politicians will tell voters that the new regime is good for those who consider themselves apparently as losers from the agreement. In fact, they will say, it is a beneficial improvement. Changes in the image and in the perception are often very effective. Secondly, a politician may devise a certain subsidy scheme to change the benefit-cost structure for groups. By using transfer mechanism to make side-payments available among groups, they can expand the combination of political feasible distribution to groups.

Under a certain regime, political leaders of the world can change the perception of people. This interacts with the idea by Haas (1992), who argues that if you have the common image, then you can achieve better coordination cooperation in international relations. Haas emphasizes the need for epistemological convergence of policy makers and the public to render international agreement to be effective. Thus, political leadership in the world can certainly change the payoff structure by persuasion, deception, or side-payments.

In this context, the role of a hegemon, or a large country in a region like China and Japan in Asia, is important. A hegemon is interested, of course, in enhancing her own welfare, and a hegemon can be very imposing to the rest of the world, or to the rest of her community members. At the same time, as Olson (1965) emphasized, a hegemon behaves as if the world's interests were approximately her interests. A hegemon has the power to change the image possessed by other nations, or generates the device for side-payments necessary for agreement.

A hegemon is also well-qualified to be a political entrepreneur. Though many nations do not enjoy being dictated to, still sometimes the hegemon can be effective in exercising persuasive skills and leadership power to achieve desirable moves from the status quo. For the duration of a regime, it is also important for people to believe that the same regime will continue for a long time. Thus, like the existence of metal money, the existence of a hegemon generally helps the initiation as well as the continuation of a regime.

In sum, it is helpful to consider the process in a framework of a two-stage, two-level, game situation that consists of the choice to participate in a monetary union and then the game of interplay of monetary policies and that each government is sustained by the political balance of various interest groups. A national rationality or win-set rationality interacts to agree on a game or to join a monetary union.

The political economy or incentive approach to a monetary union assumes that a country will decide to join a monetary union only if the benefit and cost from the action should improve the national well-being, and only if the participation does not erode the constituency basis of the incumbent government. This type of consideration from the standpoint of political economy generates several hypotheses concerning the process of the formation of a monetary union as follows. Some of them may be discerned by mere common sense, but by analyzing the incentive structure of participating in a monetary union, one can grasp the political-economy forces involved in a formation of monetary union.

(1) A transition from a regime that is a variant of flexible exchange rates to a regime that is a variety of fixed exchange rates normally requires time, effort and the concerted coordination of most of the participants. The only exception is probably the case of the euro. By taking the option of introducing a single currency, all the threats from disturbed exchange rates by speculation do not matter after a single currency is achieved.

(2) The time profile of benefits and costs is important. As far as the gradual approach to more fixed exchange rates is taken, costs of unified action towards fixed exchange rates, that is, the loss of monetary independence comes immediately, and the benefit of unified currency comes at the last moment where an irrevocable fixed exchange rate is confidently believed. Therefore, unless the government has leadership strong enough to take a very long-run view, the potentially useful currency union may not be realized through the gradual method. The “euro” type of direct and immediate transition to the use single currency may avoid this time-wise discrepancy of benefits and costs.

(3) Economic knowledge, belief, political or economic policy related ideology, persuasion and coercion all help nations change images and recognitions of reality, economic models and the future outcomes of cooperation. They may even change the pay-off structure itself. Thus, the role of international leadership or a hegemon is

significant.

Finally a lesson from the public-goods approach is as follows. Positive externalities from a monetary union extend beyond the union's border. American and European tourists or businessmen, for example, benefit from the reduction of exchange costs due to common money or fixed exchange parity in Asia and the reduction of calculation costs due to the fixed parity among European currencies. The Asian Wall Street Journal will enjoy not having to print its price in terms of all the European currencies, if European currencies are exactly aligned.[4] It follows from this existence of externalities, that the size of a voluntarily made currency union is likely to be smaller than the optimal size for the world (Casella 1990, Hamada 1985).

IV. Interpretations of Historical Examples of Monetary Unions and Regime Choices

Given the framework of regime choices sketched above, let us review and interpret historical examples of monetary unions, the concerted choice of new regimes, and the necessitated shift of one regime to another. Some of them are within a nation, some are among a group of nations in a region, and others are among most nations of the world.

History presents since the 19th century many examples of monetary unification. The German Monetary Union among Zollverein members from 1857 to 1967, the Latin Monetary Union established in 1865 under the leadership of France, Italian monetary unification, and the unification of currency by redeeming paper notes (han satsu) in Japan are all examples of monetary unification. (For their incentive-related analysis, Hamada, 1985, Hamada and Porteus, 1992.) The Gold Standard and the Bretton Woods System can be regarded as variants of fixed-exchange rate unions. Also, the history of disintegration of a monetary union (e.g., Austria Hungary, the Commonwealth of Independent States

[4] Often one neglects the welfare of outsiders or nations who are left behind. In contrast to the case of regional trade agreement, where the spillover to the rest of world is likely to be negative because of the trade diversion effect (see, Goto and Hamada, 1996), the spillover effect from monetary integration is generally positive because of the reduction in transaction costs and in information costs to the rest of the world.

(CIS)) is quite intriguing. For our purpose of evaluating the political economy incentives of the formation of a monetary union, however, we will mainly discuss the three cases of monetary integration, Scandinavian Monetary Union, Wet African Monetary Union, German Monetary Integration, and the process from EMS, EMU through Euro Zone.

(1) Scandinavian Monetary Union

A monetary union was formed between the neighboring Scandinavian countries of Sweden and Denmark in 1873. Norway joined this union in 1875. A common currency unit, the krone, which was based on gold, circulated as legal tender in member countries. In Sweden, note issue was in the hands of the Bank of Sweden and private banks, while in Norway and Denmark issue was restricted to the Bank of Norway and the National Bank of Denmark respectively. The union was extended to cover note circulation when in 1894, note issuing banks in Norway and Sweden agreed to accept each other's notes at par. Denmark joined this agreement in 1900. From 1905, the conditions of circulation of note issue were amended to allow for a commission to be charged on foreign notes. Despite this added cost, joint circulation of notes continued until the outbreak of World War I, when redemption of bank notes was suspended and the union in effect ended (Nielsen, 1933).

(2) West African Monetary Union

The longest surviving present day monetary union is probably the West African Monetary Union (WAMU) between seven countries of Francophone West Africa (Hamada and Porteous, 1992). This union was created around the Central Bank of West African States (BCEAO) in 1962 and has continued since then, with a major revision in its operating arrangements in 1974. WAMU is one region in the wider CFA Franc zone in francophone Africa, originally established in 1948. In the other region, six central African states have a common central bank, the Bank of Central African States (BEAC) which issues in each state a separate currency which is legal tender in all six. Our focus here, however, is on the former region, WAMU, which constitutes a more tightly defined monetary union. In WAMU, the BCEAO issues a common currency, the CFA franc, which was tied to the French franc at a rate of 50:1, and now at a rate of 100.1 with the “support” of the French government. This support now takes the form of an overdraft

facility at the French Treasury with which the bulk of foreign exchange reserves of the union are deposited. In return, France exercises direct influence over the affairs of the union through appointees on the Board of the Bank. She also exercises considerable indirect influence on individual members through concessional assistance and commercial links. Therefore, the word “support” is euphemistic for the word “leadership,” if not “exploitation.”

Within WAMU, Cote d'Ivoire, accounting for almost a third of the total GDP, is the dominant state. Monetary policy within the Union operates in a fairly decentralized fashion in that the National Monetary Committees in each member country decides on the issue of currency within the overall credit allocation guidelines decided by the BCEAO Board. The Bank itself sets rediscount ceilings for each member, reserve ratios and the rediscount rate. Total bank lending to a member government may not exceed twenty per cent of total revenues from the previous year. The Union was under considerable strain until its drastic devaluation in 1994 of one hundred percent as a result of the overvaluation of the CFA franc relative to other currencies. This strain arises due to its peg to the relatively strong French franc.

However, without the maintenance of the convertibility of the CFA franc, which is supported by France, one of the main raisons d'etre of the union would be removed. The union is notable for low levels of intra-union trade (only 7.5% of total international trade is with union members) and factor market integration, hence the external link to larger trade markets is all the more important (Robson 1983, Bhatia 1985). Broughton (1991) suggested that WAMU did not meet conventional criteria for an optimal currency union. Its survival should be understood as a result of the link to the French franc, and the political leadership by France rather than as a result of being a defined monetary union. Hence, it could be interpreted as a form of monetary standard, more than a currency union per se, in which the external anchor has brought discipline and credibility to the economic policy regime of member countries.

(3) German Economic Monetary and Social Union (GEMSU)

A recent example of a monetary union following political unification is the German Economic Monetary and Social Union (GEMSU) Treaty between West Germany and the German Democratic Republic (East Germany) which came into force on July 1, 1990. Driven by the political necessity of symbolic unity, as well as by fears of economic instability in the GDR, the treaty made provision for a two-tier system of conversion of Ostmarks (OM) into Deutschmark (DM). Salaries and wages, pensions, debt contracts and personal savings up to OM 2000 were converted at a rate of 1 for 1. This rate was well in excess both of black market exchanges of DM for OM prior to the union and of measures of purchasing power parity. Other balances were converted at the rate of 2 OM to 1 DM, resulting in an average conversion rate of 1.8 to 1 for all exchanges.

Akerlof et. al. (1991) have allowed the effects of monetary unification. The conversion of labor costs at the preferential exchange rate level has caused a cost-price squeeze for eastern German firms that were unable to raise prices. This was because demand for their goods has declined dramatically as eastern Germans took advantage of their newly gained purchasing power to obtain western products of higher quality. However, a large fiscal burden has followed unification as a result of the costs of harmonizing physical and social infrastructure, and of selling off or closing bankrupt firms caught in the cost-price squeeze. In the absence of politically unpopular tax increases, the German budget deficit has swollen. As a result, the German inflation rate has moved above that of other northern European nations for the first time in years. Monetary policy has been left to bear the brunt of the battle against inflation, resulting in the high interest rates which caused unsustainable strains on many EMS partners.

In terms of our basic framework, this unification is a shift to a single money with a single government. People had the expectation of the irrevocability of the single money, and therefore the credibility of the reform was perfect. West Germany as the dominant partner in the union undertook the role of monetary entrepreneur in initiating the union and in underwriting the fiscal consequences. The conversion rates explained above gave a large distributional consequence to both economies. Because of the dramatic changes in many environments in the East and West Germany, it would be difficult to blame the shift (slowdown for the West Germany) in growth trends solely to

the monetary unification.

(4) The European Monetary System (EMS), the European Monetary Union (EMU) through the Euro Zone.

Development of the European Monetary System since its inception in 1979 has offered a striking contemporary example of the process of monetary integration. The EMS was founded as a "flexible, symmetric version of the Bretton-Woods system" (Kenen 1992), following long standing plans of monetary union in Europe. The Werner Report of 1970 envisaged the development of a monetary union by 1980, although the turbulent environment of the 1970's, was not conducive to economic harmonization. Harmonization implies the process whereby the differences in key national economic indicators such as the inflation rate, interest rates and levels of government deficits and accumulated debt gradually narrow. By contrast with the 1970s, remarkable harmonization of intent at least, if not always harmonization of actual economic conditions, took place in the 80s amongst the original eight ERM members. The eight were joined by Spain in 1989, the UK in 1990, and Portugal in 1992. After frequent early adjustments to the Exchange Rate Mechanism, there were no major realignments from 1987 until September 1992. This period of quiet contributed to the sense of inevitability in the progression towards a fixed parity system, but proved to be the lull before the storm of suspensions and devaluations of member currencies in September 1992.

Increasingly, the Deutsche Bundesbank served as the monetary anchor of the EMS by virtue of the size of the German economy and strength of the Deutschmark. This strength was jealously guarded by the Bundesbank with its reputation for high inflation aversion. In a decade when anti-inflationary political commitment ran high, the credibility offered to the EMS by Germany through the ERM came to be valued by politicians in other European countries. Late ERM entrants such as Britain, sought entry as a mechanism for disciplining domestic wages and prices. By joining the currency system, entering nations signaled an anti-inflationary stance to the market and bought into the credibility of the Bundesbank, with benefits in terms of lower interest rates. By claiming that their economic policy options were limited through the constraints of EMS

membership, politicians could avoid some of the blame for higher unemployment and lower income in non-competitive industries that failed without the protection of a depreciating exchange rate.

However, the monetary discipline provided by the Bundesbank became punitive as Germany suffered the real fiscal shock of unification. The costs to other countries of enjoying Bundesbank credibility soared, as high German real interest rates were transmitted throughout the ERM. Members with below full employment felt the effects of the squeeze on interest sensitive sectors like housing and construction. The growing divergence of costs and benefits of maintaining the fixed parity created uncertainty about the future unified money. It opened the door for speculators to bet that the ERM link was too costly for weaker currencies to sustain. Despite regularly reaffirmed commitments to preserve these currency links, and despite defensive purchases of weaker currencies by central banks, the speculative attacks of September 1992 succeeded in forcing several devaluations. Thus temporarily, confidence in the ERM bands was substantially undermined.

Instead of giving up the process of monetary integration, EMS countries (except Great Britain and Italy) started to continue the firm strategy to create a common currency area without the slow process of converging exchange rates. In 1994, the European Currency Unit (ECU) had been determined. In January 1999, the single currency Euro was introduced as the unit, and the European Central Bank (ECB) was established to conduct a unified monetary policy. In the next section, we will discuss what kind of lessons this remarkable monetary experiment gives to the future in Asia.

The Euro experience gives quite new sets of insights to the positive theory of monetary integration. Unlike common wisdom, monetary integration could proceed political integration. The time profile of benefits can be changed so that benefits of a common currency come together with the cost. Again, we will explore what kind of lessons the Euro experience will give the Asian governments that contemplate a monetary unification.

In spite of the criticism by economists (e.g. Feldstein, 1992; 1997, a group of German economists represented by Neumann, 1997), and in spite of severe speculative attacks in 1992, the momentum for the e*uro* was strong enough to establish the euro zone. The economic benefit of unification is clear: the economy of transaction and information cost. Also the political will, that is, the perception of political benefits by national leaders, must have been the driving force of currency unification in Europe. This benefit is enhanced if really the single money circulates.[5]

The cost is the loss of monetary control of each participating nation. Countries that suffer from chronic unemployment will lose the macroeconomic policy instrument for a short-run stimulus. If countries cannot contain their desire to deviate from the norm of monetary expansion, then the currency could potentially be under speculative attack..

V. Empirical Assessment of a Monetary Union.

Recently, many authors addressed the benefits and costs of a monetary union, currency board, and the dollarization. It would be difficult to do justice to the large literature on this issue, but we could probably summarize the results for our purpose as follows.

(1) Jeffery Frankel, Andrew Rose and others conducted extensive research on the benefit of a single currency in numerous articles. They conclude, mostly by applying the gravity equation method to cross-country data, that a single money exerts a substantial influence on flow of trade and national income. According to their estimates, the use of a single currency triples the amount of trade and increases national income approximately by a half percent (*e.g.,* Frankel and Rose, 2002; Glick and Rose, 2002; and Rose and Engel 2002).

[5] There are, though, examples where the process may *not* be irrevocable even after the realization of a single currency.

This effect is presumably much larger than the effect of the fixity of exchange rates. It is worth noting that the trade of member countries to out of the euro region did not shrink. Thus, the trade diversion from the external trade to the euro¥zone internal trade did not appear to have taken place.

(2) Alesina and Barro (2002) and Alesina, Barro and Tenreyro (2002) show by various indicators that trade within Europe is very intense and that there is enough satellite-like relationship between US and many other countries. In other words, one might define the European Trade Area and the North America Trade Area. In Contrast, Japan trades with many trade partners all over the world so that it is difficult to conceive such an entity to be called the Japan Trade Area. Thus the EU had and the NAFTA has preconditions for a currency, but the Asian economic zone does not possess that proper can be justified but not necessarily the Asian Trade zone, and according the case for the conditions to call for an Asian Monetary Union.

(3) Goto (2002) argues, on the other hand, by using the principal component approach that the confluence of business cycles among Asian countries is even stronger than that among European countries and that among NAFTA countries. The principal component analysis is a useful method of measuring the degree of synchronization of multiple variables in contrast with the conventional method of taking bilateral correlation between each pair of countries. In that respect, this seems to be a promising approach (Goto and Hamada, 1996). Goto (2002) particularly emphasizes the time series observation that integration among Asian economies is in progress in recent years. Most variables were correlated with the U.S. variables in the past, now they are moving together with Japanese variables as well.

Reservations remain about his findings. First, even though macroeconomic and trade variables are moving together in Asia as detected by the principal component analysis, the openness of Asian countries are not as

great as in Europe. Trade moves together, but the degree of openness of countries are often small. Therefore, the level test may fail. The use of the trade intensity index, which is a powerful tool for describing trade interdependence of trade flows, may not indicate the close relationship between countries because the trade intensity index can be high even though the particular goods are not traded in a great amount after all.

Given these findings and deliberations what we can tell about the positive theory of Asian Monetary Union? We try to assemble arguments for and against the currency union in Asia, from the normative and system-design ground first, and then ask if these arguments are good enough incentives to join a monetary union as a positive analysis. In the mean time, we will refer to the charts of recent macroeconomic performance of Hong Kong, the euro countries and the non-euro EU countries. They provide valuable cues to judge the benefit and cost of a monetary unification, though they hardly render themselves to a sophisticated time series analysis because the observation period is so short.

Pros to the proposal of a monetary union including China, Korea, Japan, and many neighboring countries can be stated as follows.

It is expected from the experiment of the euro that currency union will burst trade among participating countries as well as neighboring countries (Figs. 9, 10) for export data. Similar tendencies apply to import as well), and that a currency unification tends to give a more stable price level (Figs. 14, 15). Trade expansion may have only a limited effect on income, but the microeconomic benefits will be great to make countries enjoy the benefit from differentiated product. Moreover, neighboring countries outside the union will be benefited by the saving of transaction and information costs. In short, the history of the euro, though very short, tells us the cost as well as the benefit of

a monetary union as well. The European attempt to currency integration certainly created expectations for price stability and stabilized the inflation rates among euro countries in a converging manner. Trade volumes both internal and external the euro zone flourished.

Cons. to the proposal of a monetary union can be stated:

In order to enjoy the true benefit of currency union, the exchange rate union is not sufficient, and a uniform money should be the desirable goal.[6] Are Asian countries prepared to unify the currency system despite of institutional and cultural difference across the national borders. Central banks including the Bank of China, the Bank of Japan, and the Bank of Korea are willing to yield their monetary autonomy?

On the other hand, in EU countries outside the euro zone, GDP tends grew slightly higher than the average of the euro zone countries (Fig. 2), (in PPP terms, this trend is not clear as indicated by Fig 4, I admit), and the unemployment rates tend to be lower than the euro countries (Figs. 17. 18). Even if we admit the robust findings by Frankel-Rose on the positive effect on trade, it is not perfectly certain whether this trade flow effect dominates the cost in terms of the loss of monetary interdependence effect. Also look at the Hong Kong experience Figs.5, 16, 19). It enjoyed the benefit by serving as an entrepot and by expanding trade through fixed exchange rate. Now is Hong Kong not suffering from the lack of monetary policy? The cost from adopting a single currency area could be really serious. Inflation is not right now serious and people are worried that worldwide deflation. Except for a few locations such as Vietnam and Cambodia, the, so to speak, the Benelux

[6] Jay –Won Ryou told me that there is a work by Shin Kwanho et. al. that exchange rates arrangement enhanced the inter-bloc trade volume. The effect cited (23%) is much lower than the effect of currency unification (200-300%)

problem of too small national currency area does not arise. Why encourage worldwide deflation by creating an Asia zone? Moreover, now a large and leader country, Germany, seems to be suffering from recession. Probably Japan will be the country to suffer from deflationary pressure.

Though I recognize the long run benefit of the uniform currency's trade creation, in the foreseeable future, the cost in terms of loss of monetary control seems to me more serious. Therefore as the normative question, I am skeptical of the benefit of Asian monetary unification. And, as a positive question, national governments will find it hard to agree on a monetary union because the benefit is far ahead. As in the case of the euro, by adopting a uniform currency is more effective, but from political consideration the adoption of a single money may pose a difficult problem because Central Banks do not welcome the situation of losing independence.[7] by that they will the delegation to the Asian Central Bank.

As an answer to the normative question, there are spillover effects for non-members. To repeat, nonmember countries will get benefit. Therefore, building a monetary union may be a better system design for the world. It requires another work to assess this spillover effect.

I strongly believe in the merit and the need for policy coordination in the world where fixed exchange rates prevail (Hamada, 1985). Under the flexible rates, the number of monetary instruments is sufficient so that each country can apply its monetary policy to its price levels and macroeconomic situations as a policy assignment problem (Feldstein, 1997, 2000). On the other hand, if twelve countries join a monetary union, then eleven policy instruments will be lost.

[7] Central bankers will be important members of the Asian Central Bank, if we call the central bank. But, probably central bankers will lose rather than gain opportunities.

VI. Conclusion.

In this paper, we applied the calculus of participation for a formation of a monetary union in Asia. Considering the benefit and cost structure given to nations, it will not be an easy task for agreeing on a monetary union. I hesitate to be pessimistic, but unless the benefit of uniform money in terms of saving of transformation as well as information cost dominates the cost of foregoing the independence of monetary policies, the creation of a monetary union is not desirable.

Finally, there is a bigger question why European countries including Germany are led to accept the euro zone proposal despite the possibility that the sparing monetary autonomy would be a great loss to Germany. Politicians presumably claimed that it was a great thing. In a world meeting, Euro voice may be more systematic and persuasive than German voice.

Intellectual entrepreneurship of Robert Triffin and others was instrumental to the realization of the euro. If microeconomic benefits will surpasses its macroeconomic costs, then the birth of the euro can be regarded as the triumph of ideas (cf. Haas, 1992) and congratulated as a great intellectual development. Otherwise, that is, if macroeconomic cost in terms of the loss of monetary autonomy is dominant, then we might say intellectual leaders have misled the Europe. The verdict is not out. If Asian leaders promote unified money, in particular, some form of fixed exchange rate regimes, they should do it after careful calculus of the benefit and cost of creating the club of a unified currency. This paper raises a caveat to those who may lose monetary independence. We need much more cautious attitude than just rejoicing ourselves for participating in a (potentially) " Asian Prosperity Monetary Zone."

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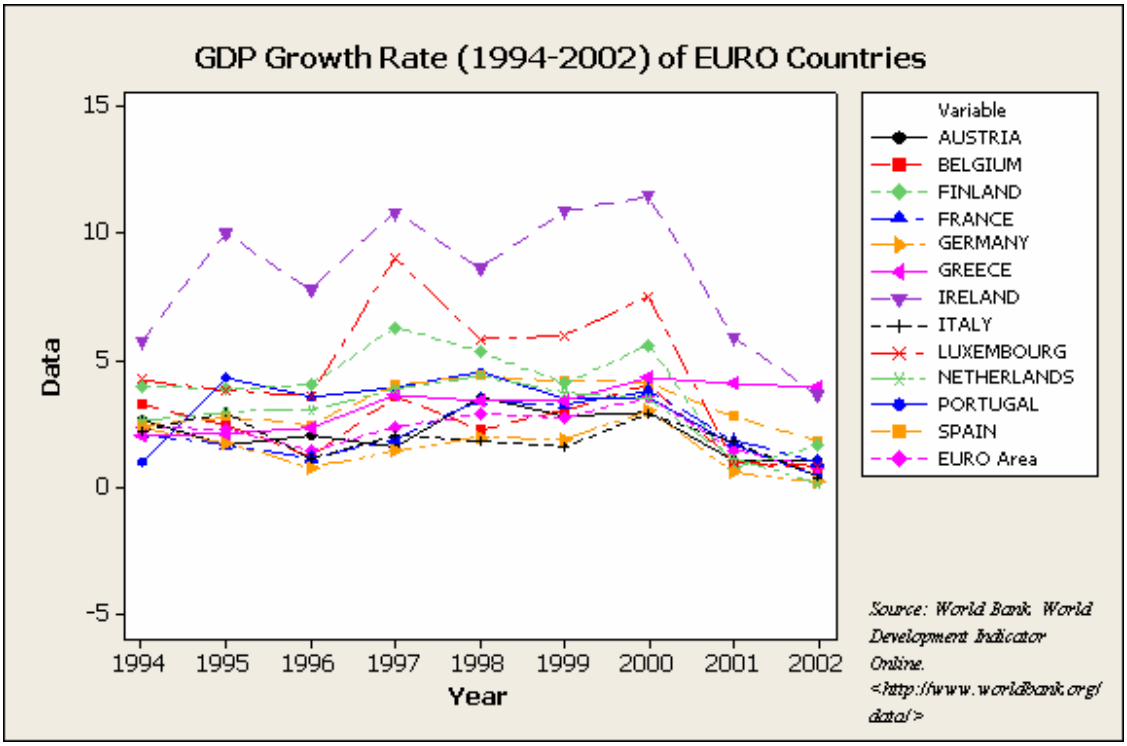
Graph 1.



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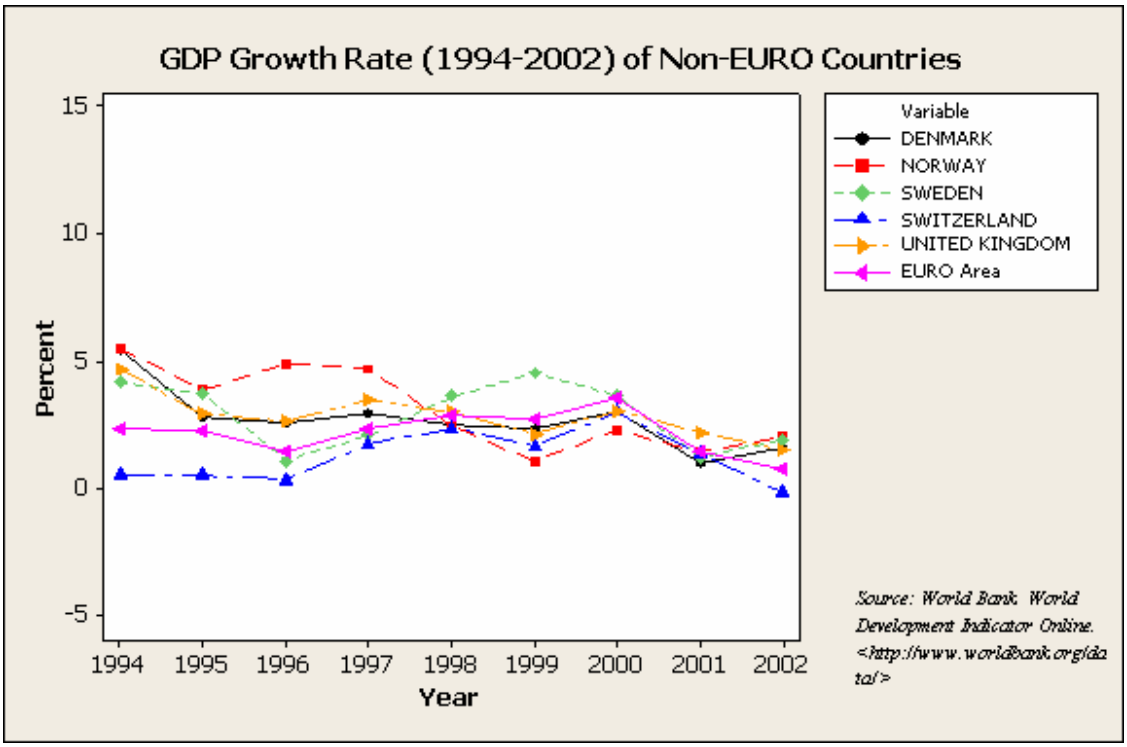

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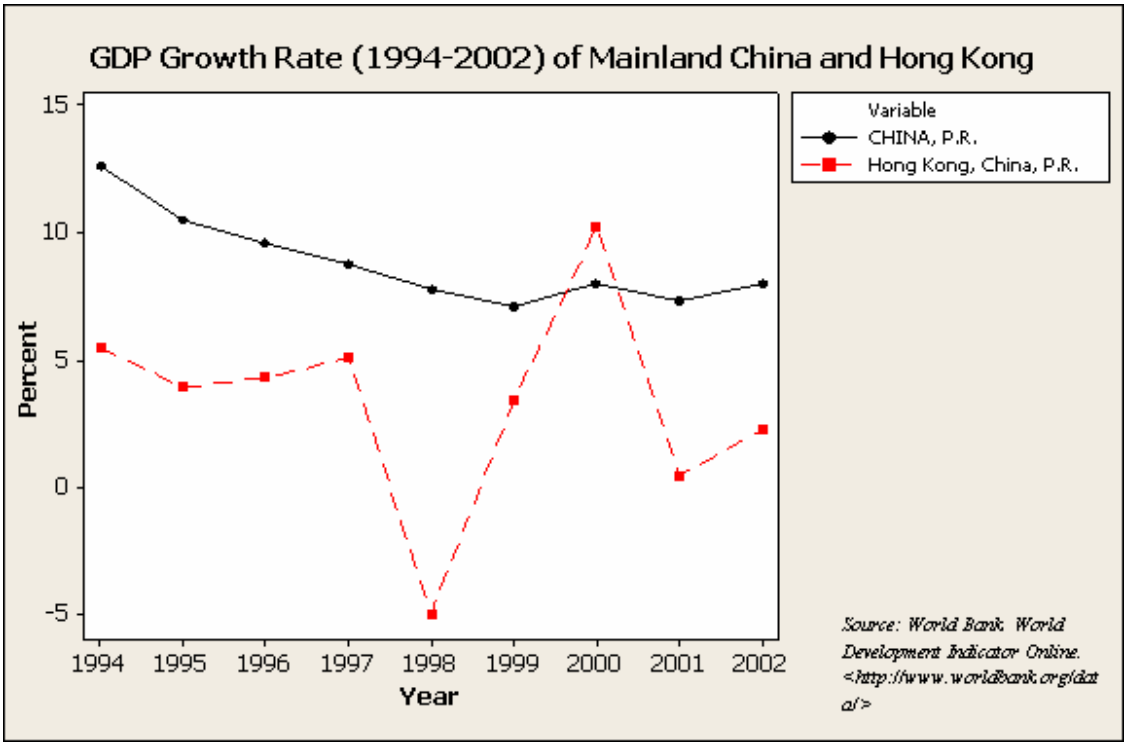
GDP Growth Rate (1994-2002) of Mainland China and Hong Kong
Variable
CHINA, P.R.
Hong Kong, China, P.R.
Percent
15
10
5
0
-5
1994
1995
1996
1997
1998
1999
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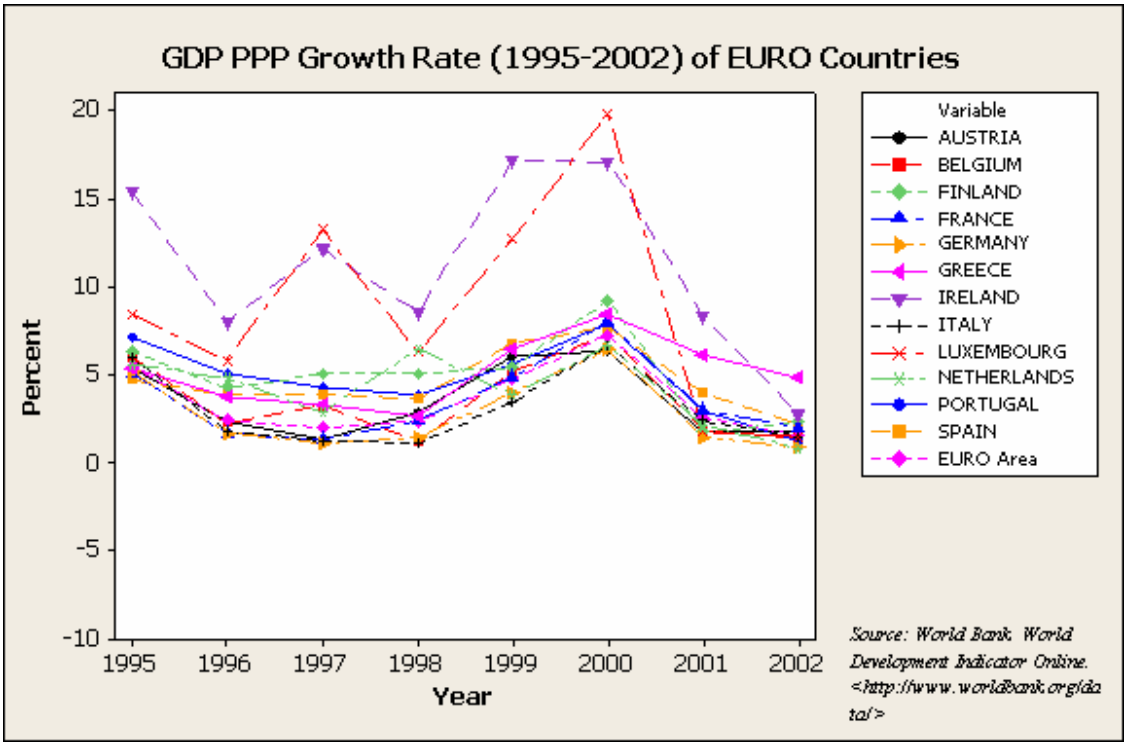
2001
2002
Year
Source: World Bank. World Development Indicator Online. <http://www.worldbank.org/data/>

Graph 4.



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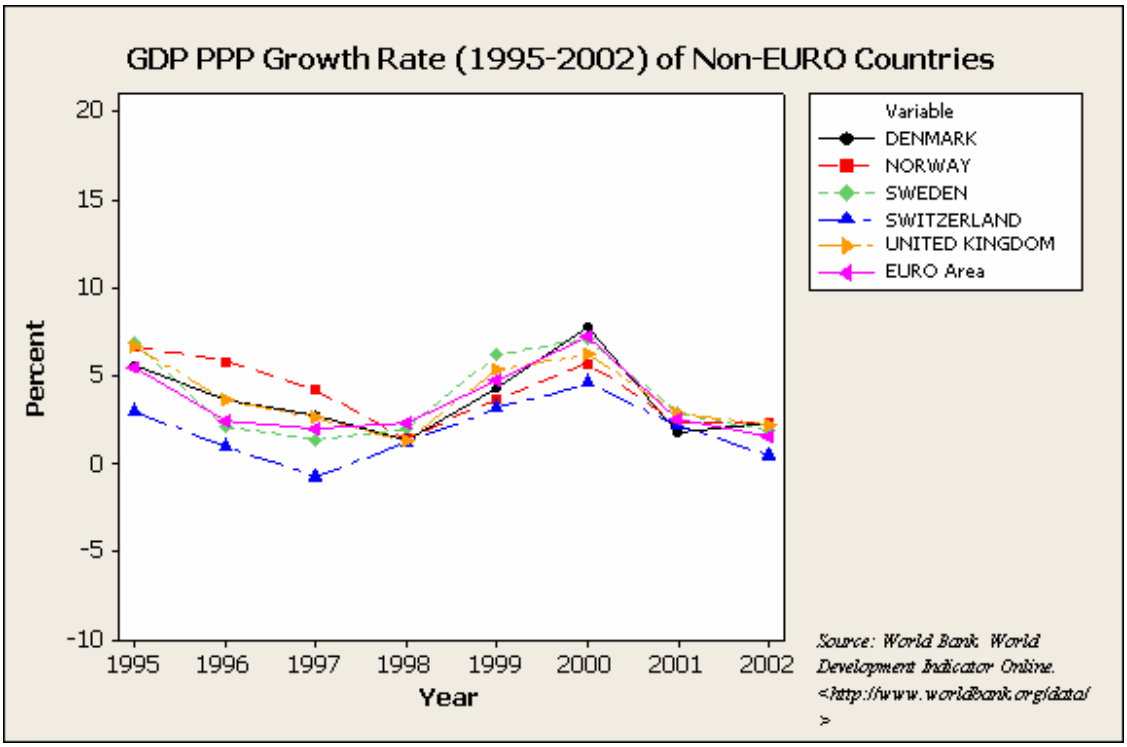

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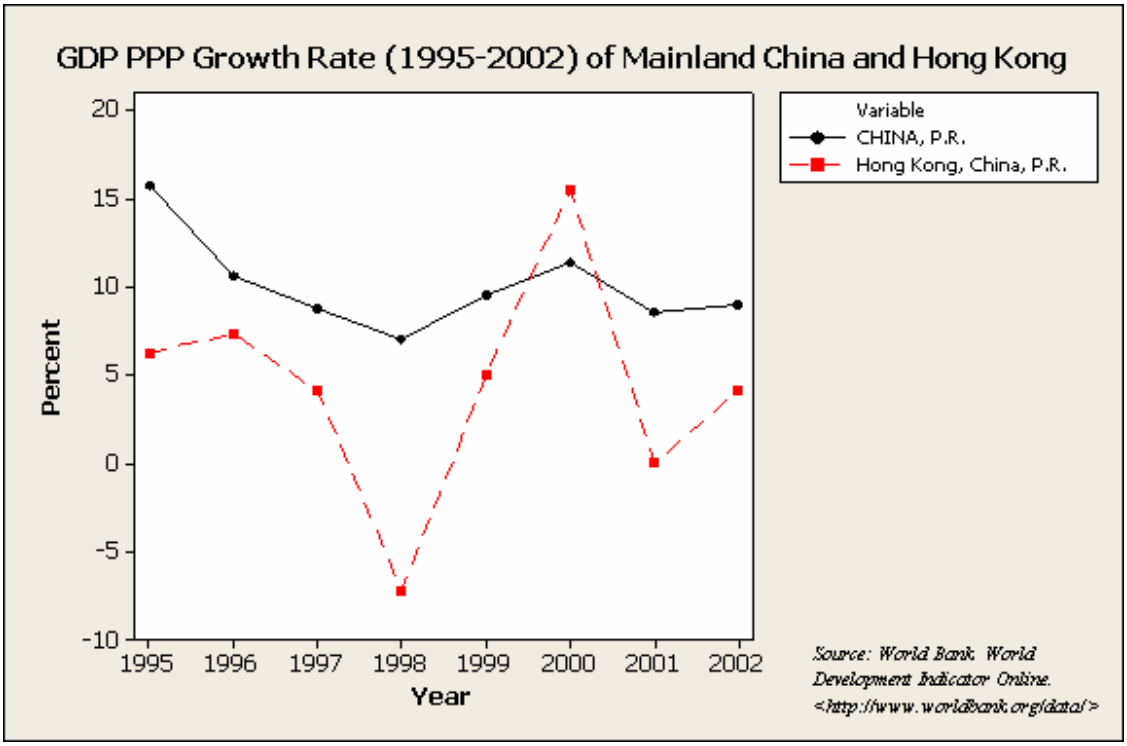
GDP PPP Growth Rate (1995-2002) of Mainland China and Hong Kong
Variable
CHINA, P.R.
Hong Kong, China, P.R.
Percent
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15
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0
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1995
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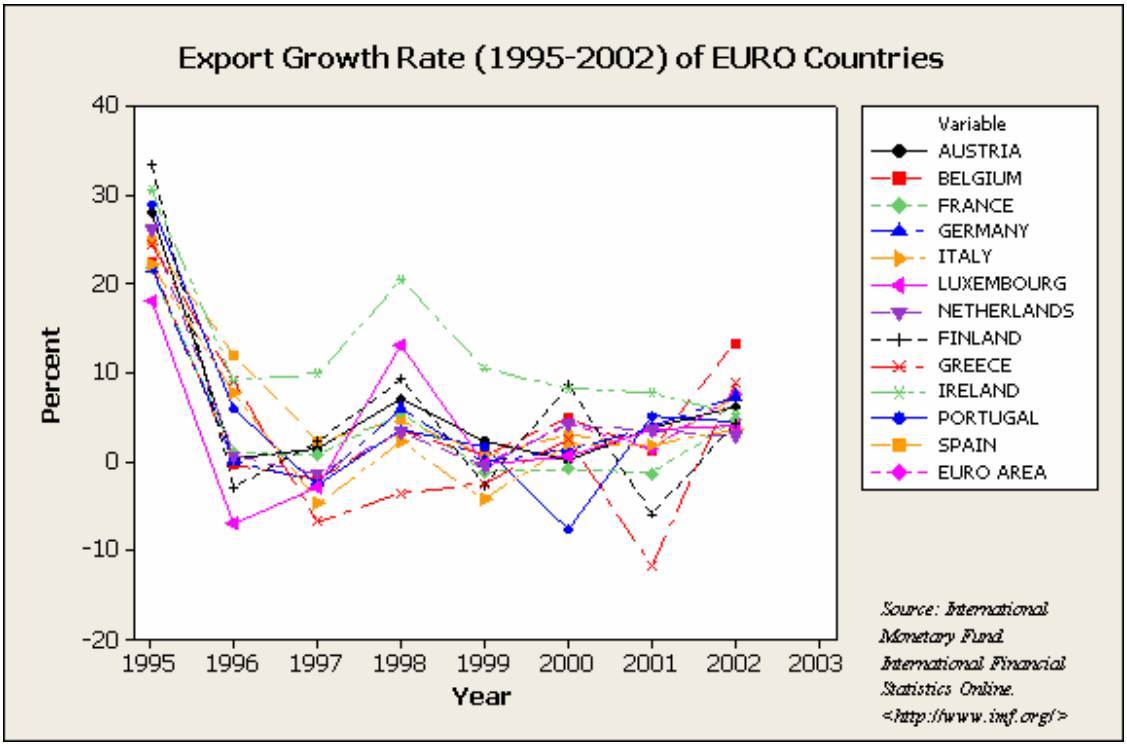
Source: World Bank. World Development Indicator Online. <http://www.worldbank.org/data/>

Graph 7.



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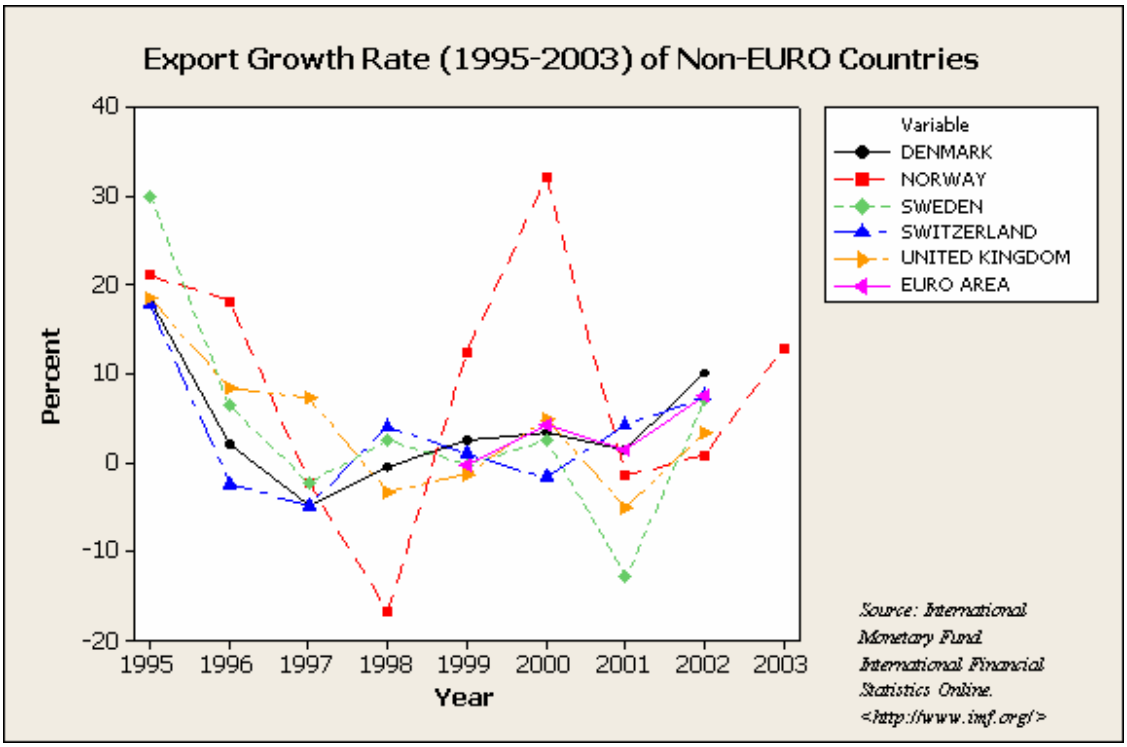

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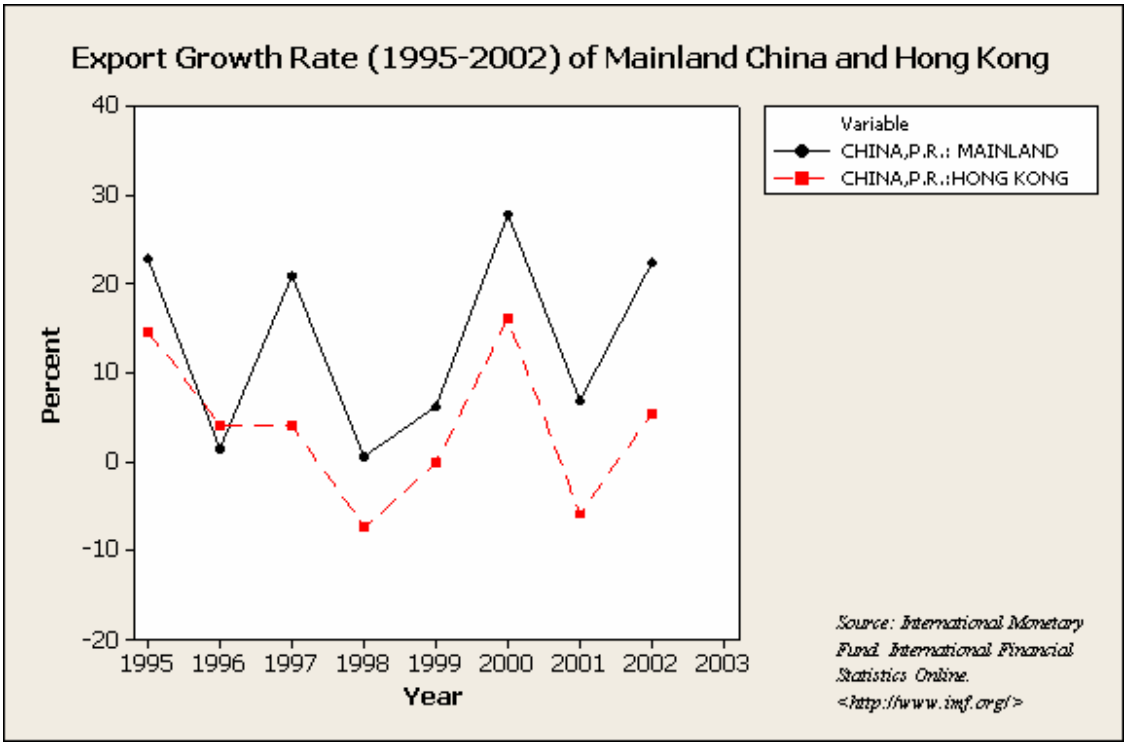
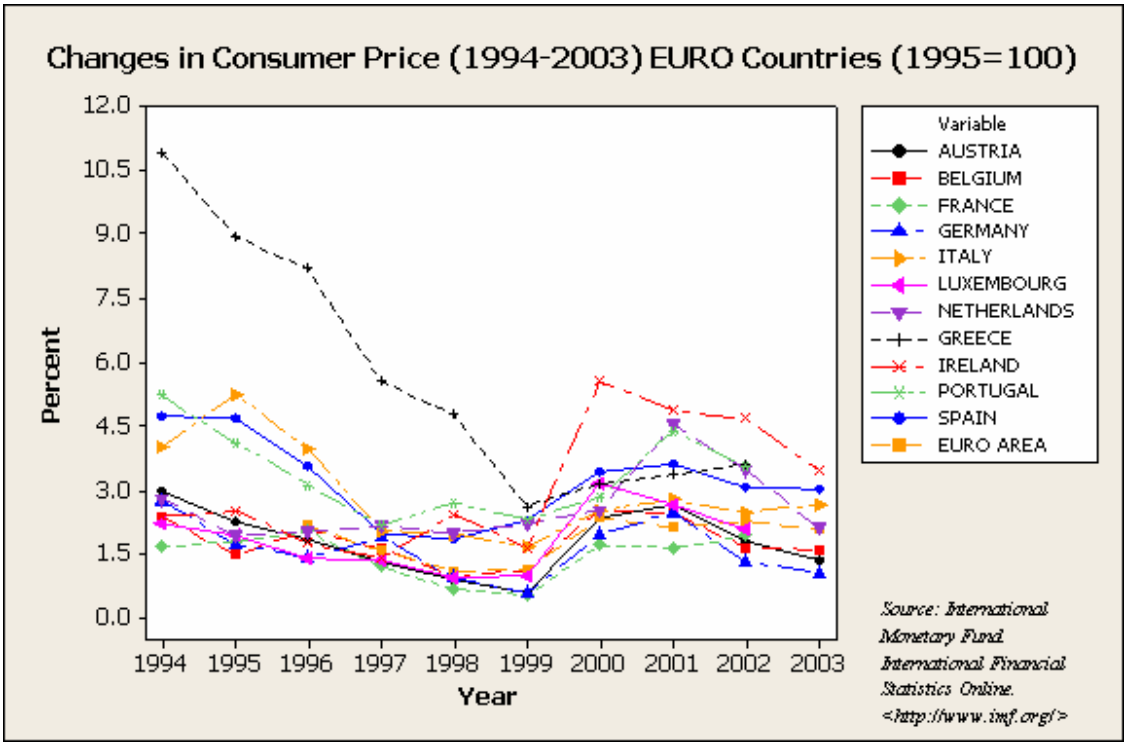

Export Growth Rate (1995-2002) of Mainland China and Hong Kong
Percent
40
30
20
10
0
-10
-20
1995
1996
1997
1998
1999
2000
2001
2002
2003
Year
Variable
CHINA,P.R.: MAINLAND
CHINA,P.R.:HONG KONG
Source: International Monetary Fund. International Financial Statistics Online. <http://www.imf.org/>

Graph 10.



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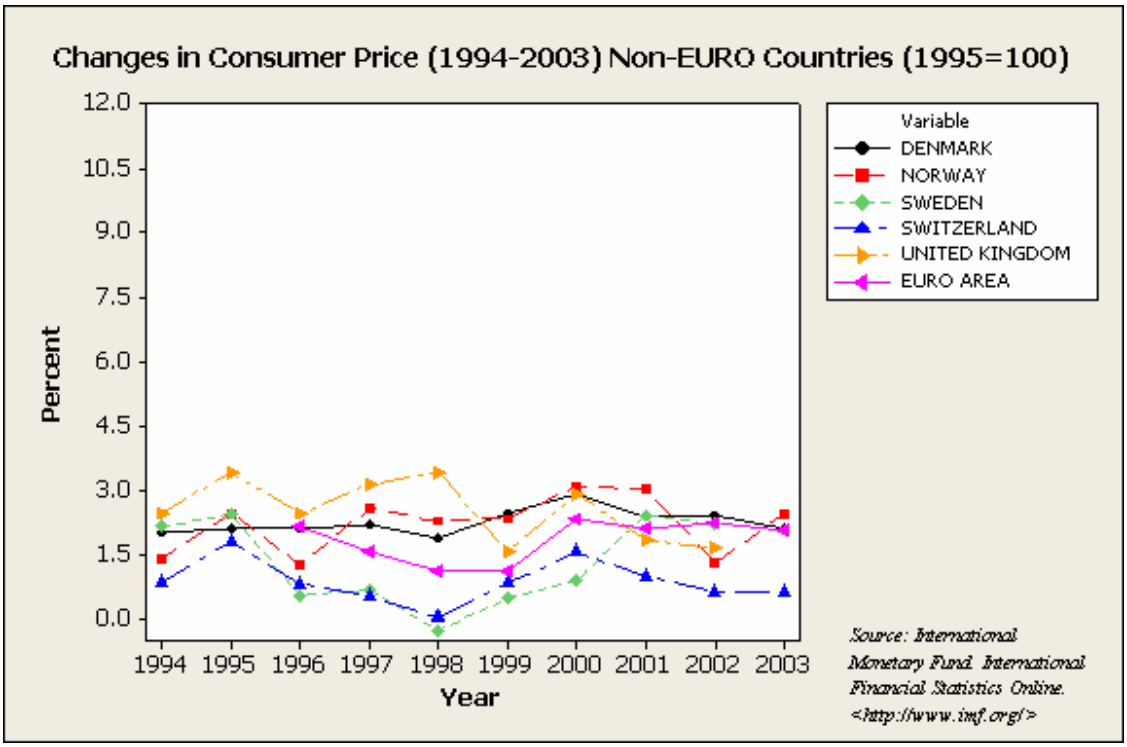

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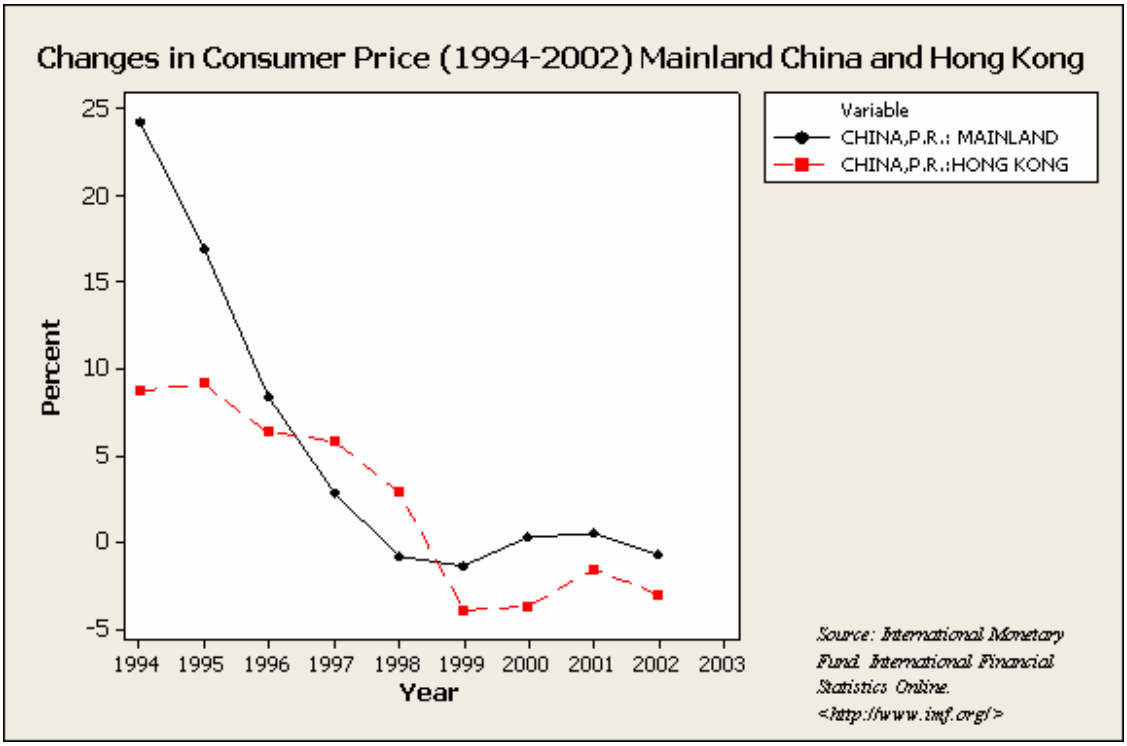
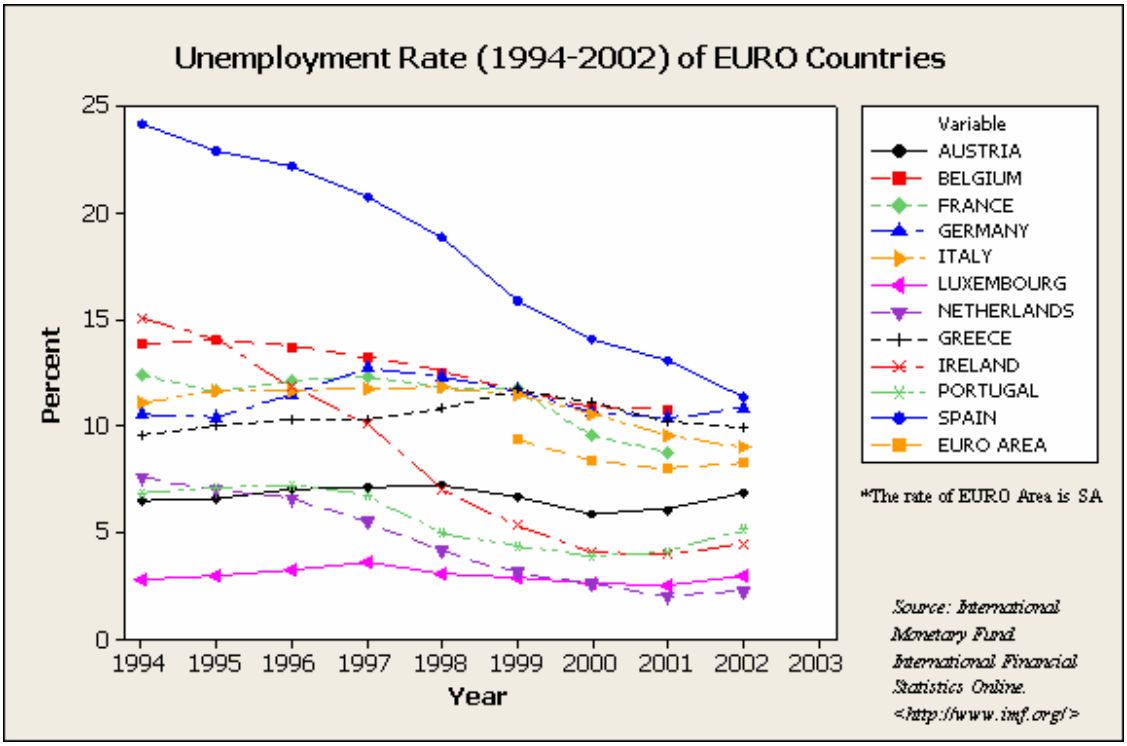
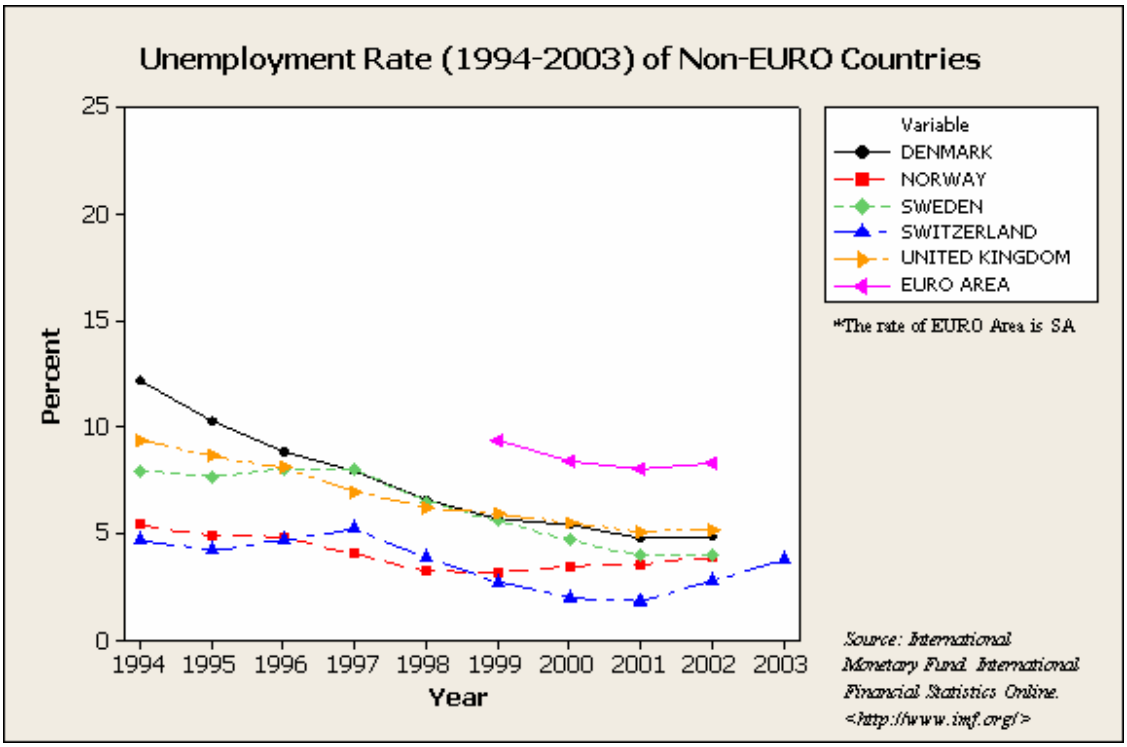

Changes in Consumer Price (1994-2002) Mainland China and Hong Kong
Percent
25
20
15
10
5
0
-5
1994
1995
1996
1997
1998
1999
2000
2001
2002
2003
Year
Variable
CHINA,P.R.: MAINLAND
CHINA,P.R.:HONG KONG
Source: International Monetary Fund. International Financial Statistics Online. <http://www.imf.org/>

Graph 13.



Graph 14.



Graph 15.


Unemployment Rate (1994-2002) of China, P.R. and Hong Kong
Percent
25
20
15
10
5
0
1994
1995
1996
1997
1998
1999
2000
2001
2002
2003
Year
Variable
CHINA,P.R.: MAINLAND
CHINA,P.R.:HONG KONG
Source: International Monetary Fund. International Financial Statistics Online. <http://www.imf.org/>