

CIRJE-F-163

**The Extended Panda's Thumb and a New  
Global Financial Architecture**

Haider Ali Khan

University of Denver / CIRJE, University of Tokyo

August 2002

Discussion Papers are a series of manuscripts in their draft form. They are not intended for circulation or distribution except as indicated by the author. For that reason Discussion Papers may not be reproduced or distributed without the written consent of the author.

**The Extended Panda's Thumb and a New Global Financial  
Architecture**

**Haider A. Khan**

**GSIS  
University of Denver  
Denver  
Co. 80208 USA  
e-mail:hkhan@du.edu**

**and**

**Visiting Professor,  
CIRJE,  
Graduate School of Economics  
University of Tokyo,  
Tokyo, Japan  
Tel.03-5841-5642**

**June-July 2002  
Revised, August 2002**

## Abstract

An evolutionary theory of international financial institutions is developed and two broad types of possible (evolutionary) equilibrium Global Financial Architectures(GFAs) are identified. The first is called an *overarching type*, exemplified by the classical gold standard and the defunct Bretton Woods system. The second is called a *hybrid form* that allows for the existence and coevolution of some Regional Financial Architectures(RFAs) as well. The changing roles of the IMF and national economic policies are examined within these two possible financial architectures under globalization. It is found that from an evolutionary perspective, a hybrid form with a reformed IMF and regional cooperation through appropriately designed RFAs can create the best possible institutional and policy environment for financial stability and sustained growth. An evolutionary argument, called “the extended panda’s thumb”, is advanced to establish the possibility of adapting many existing institutions including the IMF, for creating a hybrid GFA. The tentative steps taken towards regional cooperation in Asia after the financial crisis are discussed to illustrate the opportunities and challenges posed by the need to evolve towards a hybrid GFA.

## 1.Introduction:

Ever since the Asian Financial Crisis(AFC), there have been criticisms ( and lately, self-criticisms) of the IMF's response.<sup>1</sup> One consequence of this has been also a large number of proposals for a new international financial architecture. Of course, the idea is not new. The world had the gold standard at an earlier period. The demise of this finally came in the 30s, and even during the second world war both Keynes from the British side and White from the US side proposed alternative ( but in some respects also closely related) plans for a future international architecture after the war. The Bretton Woods system that came into being preserved little of Keynes's proposals; but flawed as it was, it survived for several decades during which the global economy recovered and prospered. The demise of the Bretton Woods in the 70s created various types of floating exchange rate mechanisms, and was accompanied by increased capital flows across borders. Then came the crises , particularly the Mexican crisis and finally the AFC, Brazilian, Russian and Argentine crises. It became increasingly difficult to support the old classical adjustment programs with expenditure adjusting policies --- sometimes accompanied by expenditure switching policies as well. As the new-fangled capital account crises with real and persistent economic effects came to be better recognized for what they are---a new type of financial crisis---- the old remedies came to be questioned.

The purpose of this paper is to look at the problem of finding or designing a proper Global Financial Architecture(GFA from here on) from an evolutionary perspective.It is an important institutional issue to discover what type of GFA will be appropriate during the current period and in the foreseeable future. In this paper, I will discuss the problems of national macroeconomic policies and governance within a framework of overall global and regional financial architectures. Whether state capacities exist for formulation and implementation of national economic policies may depend in large measure on the kind of global and regional financial architecture in existence. Having adopted the methodological approach of evolutionary economics<sup>2</sup>,the institutions I discuss and the alternatives I propose can be seen as path dependent evolutionary alternatives. They all also depend on a supporting structure of complementary institutional network(CIN). Global financial architecture(GFA) and Regional financial architecture(RFA) both depend on their respective CIN within a global system of nation states. Given the real interdependence within the system, all actors have some stake in sustained growth and stability with equity. Thus the central substantive argument of this paper is that sustainable policies at the national level require a supporting network of GFA and RFA. Such national policies in their turn can contribute to the sustainability of the GFA and RFA. It can be shown that

---

<sup>1</sup> See for example, Blustein, Paul (2001). The Chastening: Inside the Crisis that Rocked the Global Financial Sytem and Humbled the IMF, Public Affairs, New York.

<sup>2</sup> For a discussion and review of recent literature, please see Akram(2002)

following an evolutionary theory of international financial institutions, two broad types of possible Global Financial Architectures can be identified. In this paper, the first is called an *overarching type*, exemplified by the classical gold standard and the defunct Bretton Woods system. The second is called a *hybrid form* that allows for the existence and coevolution of some Regional Financial Architectures as well. The changing roles of the IMF and national economic policies can be examined within these two possible financial architectures under globalization.

Another potentially fruitful aspect of this approach is the adoption of a specific argument that relies on a fascinating evolutionary strategy first discussed popularly by Stephen Jay Gould(1980:ch. 1) This can be called “*the panda’s thumb*” argument following the title of Gould’s essay. According to Gould, whose argument David(1993) adapts for studying the evolutionary history of intellectual property rights institutions, the panda’s “thumb” is an ingenious trick of nature to utilize whatever anatomical material is available in order to serve further evolutionary ends. Although it functions as a thumb, the celebrated Panda’s thumb is, in reality, not a thumb at all, but a structure built from the enlargement of a bone that would really have been a part of panda’s wrist. But the panda can make do with this evolutionary contraption quite well. It can strip leaves from the bamboo plants and feed itself. The continued existence of the species shows the evolutionary value of such makeshift devices. As Gould puts it, the panda’s thumb is “a contraption, not a lovely contrivance.”

The same type of ingenuity can be seen to be at work in the evolution of human social institutions. Using this insight, David(1993) has offered a fascinating analysis of the evolution of the intellectual property rights institutions in the west. One striking conclusion of his study is that in this case ( and probably, in general) we do not see institutions evolve optimally. They are closer to the makeshift nature of panda’s thumb than to a careful solution to optimal design problems --- a “fact” that is usually the product of the economic historian’s hindsight.

Implicit in David’s analysis is also the idea that human institutions are subject to evolutionary change through various ingenious human maneuvers. Although he does not discuss this explicitly, it is consistent with this line of thinking to emphasize the role of economic theory in the design of economic institutions. By a slight extension of the original ‘panda’s thumb’ argument we can think of the role of an approximately accurate economic theory in a relevant area of institutional design as an enabling one. Contrariwise, an inaccurate or wrong theory--- or worse, a wrong ideology--- could lead to ill-fated moves that inflict considerable damage.

Incorporating a cautious role for economic theories and their institutional prescriptions in the history of path dependent evolution of institutions can be called an “extended panda’s thumb” argument. This is the methodological approach of the present endeavor. Along with the caveats regarding choosing the inappropriate theory, I want to emphasize the role of uncertainty and the partial nature of our scientific knowledge. Furthermore, rationality is bounded and learning is costly. Therefore, the “extended panda’s thumb” argument puts great emphasis on the comparison and testing of various theoretical alternatives with different institutional and policy implications.

In this paper, I want to argue that the design of a GFA will in all likelihood have to follow a panda’s thumb like development. Instead of jettisoning the IMF and other seemingly inefficient regional arrangements, I argue for serious institutional reform under the existing framework. Ironically, in a world of bounded rationality and uncertainty, such an approach will be relatively more efficient than the search for the

“optimal” institution under the assumptions of maximizing agents who face no computational or other costs of learning to be (more) rational.

One caveat before we proceed any further is warranted. The “extended panda’s thumb” argument is not a deterministic one. Under any given set of circumstances, there are almost always more than one possible set of reforms guided by different theories. It is also possible to do nothing. All that the “extended panda’s thumb” argument says is : under situations where we can not immediately develop new institutions, we can be guided by some approximately true economic theories to alter the functionalities of some existing institutions and organizations.<sup>3</sup> This may not work for all existing institutions. One can not make a domestic commercial bank perform the functions that a reformed IMF may have to( and in principle, can) perform. The necessary theoretical conditions for this “transformed functionality” are: 1) the scope of the institution must in principle be extensible; and 2). A mechanism must exist or can be created in order to find the resources and capabilities to carry out the new functions after institutional reform.

There is another aspect of this particular extension of “panda’s thumb” argument that also requires some emphasis. The role of structural unevenness in the global economy is particularly important to recognize within the proposed framework of analysis. The range of economies, the types of polities, the institutional capacities and resource endowments including technological progress and capacities for innovation all vary widely. A simple system of gold standard or adjustable peg or free and flexible exchange rate together with free multilateral trade under, say, the WTO arrangement may therefore be simplistic. It may serve the needs of one group of actors, for example, the advanced economies with well-developed financial services sectors, than some others. How best to achieve a synchronized growth and development regime that is perceived to be fair by all is indeed a challenging problem. The GFA is defined here as a system of global financial arrangements for international payments with specific rules and procedures for the member nations to follow. If there exists a similar institutional arrangement at the supranational but regional level only then I call it an RFA. It will be seen that one attractive solution to the problem of global unevenness is to design a GFA which also includes a number of RFAs as an integral part of the global financial system. It also turns out that such an institutional structure is also an evolutionary possibility if one takes “the panda’s thumb” argument seriously and adds to it an element of imperfect human design in a cooperative framework.

## **2. Financial Evolution: Debt Contracts and Equity in Global Capital markets**

It is important to realize that both debt and equity markets are not like ordinary commodity markets. For example, unlike most market transactions that are usually summarized in terms of prices and quantities, the debt contract is highly complex. The main reason for this is that the contract really is a promise. A debt contract simply entails a promise to repay principal and interest on an advance. The repayment is in the future; hence uncertain. Key features of this contract are:

---

<sup>3</sup> In fact, the IMF has already done it (albeit somewhat unconscious of the underlying theoretical justification) once by focusing on the structural adjustments in indebted third world countries. Since 1973, the traditional Bretton Woods era functions of IMF have practically almost ceased to exist.

1. quantity advanced;
2. specifying a given/variable rate of interest;
3. specifying when the loan will mature;
4. collateral that the borrower will provide as security for the lender;
5. specifying the conditions that determine if the loan is in default;
6. specifying the law under which the default must be adjudicated;
7. specification of the seniority of claim;
8. pledges in relation to further borrowing;
9. any further commitments by the lender;
10. provisions for transferability;
11. whether or not the contract is standardized in terms of provisions or denominations;
12. relevant tax features, e.g., tax-exemption features;
13. call provisions for early repayment.

Many of these features can be interpreted as means of overcoming uncertainty, transactions costs, and incomplete contracts. Recent developments in theory of corporate finance illuminate many of these aspects. However, “globalization” has internationalized risk, uncertainty and incompleteness also. Some of these features are discussed later in this section.

For the moment we can observe that the key difficulty in the economics and the political economy of debt is the uncertainty surrounding the probability of default. Given bankruptcy costs, asymmetric information and incomplete contracts, default is an everpresent but uncertain factor. Using fuzzy set theory and neural network learning models, it can be shown that banks and other lenders can reduce this risk, but they can never eliminate it completely.<sup>4</sup> Much of the problem of domestic and international financial stability originate from this simple observation. But it can also be shown theoretically that despite its complexity, costs of default, lack of risk-sharing, and various market failures related to information problems debt is still the most efficient instrument for many if not all financial transactions. Thus evolution of institutions of intermediation and a supporting CIN through legal and other institutional evolution makes sense from this perspective. However, because of the complex nature of these institutions, uniform progress towards optimality in an intertemporal sense cannot be guaranteed in advance. Furthermore, marketization in the real world is a complex activity involving both cooperation and conflict.

We owe to the classic work of Karl Polanyi(1944) the realist approach to institutional history. Polanyi shows through his study of the British and West European capitalism under gold standard, how the system broke down because of systemic counterpressures. Together with the classical liberal approach to international money, the attempt to completely commodify labor also met with resistance. Polanyi called such resistance and the initial policies of marketization , ‘a double movement’. This type of double movement is also occurring---at least partially--- under the present regime of globalization which in its extreme forms also tries to extend marketization globally within a neoliberal framework of optimality of

---

<sup>4</sup> See for example, Khan (2002a), “ Can Banks Learn to Be Rational?”, Discussion Paper no. 2002-CF-151, Graduate School of Economics, University of Tokyo

the market system approach. However, both parts of such a double movement, in contrast to the powerful labor movements of the past, are still in their infancy. Even so, substantial instability is manifest in the global financial markets. As resistance to further marketization without regulation grows, the instabilities are likely to spread and result also in political and social instabilities as well. For this reason alone, it may be wise to adopt a new and more pragmatic approach to GFA that can help policy making for greater well-being in the nations of the world. As mentioned before, this will help prevent a third type of crisis: a political and social crisis. The developments in Indonesia during the AFC illustrate how suddenly such crises can break out. The evolutionary theory developed here actually suggests a pragmatic path-dependent institution-building approach to a hybrid GFA. But the process is likely to be quite complex.

It is because of such complexities that the term 'globalization' which is so much in vogue today has to be used with caution. When viewed historically, it appears that globalization is a contradictory process of international economic integration that was severely interrupted by the first world war, the great depression, and the second world war. The emergence of the Bretton Woods framework can be seen as a way to integrate the world with respect to trade while controlling the flow of private capital. The demise of Bretton Woods has set in motion forces of capital account liberalization that are often the most visible aspects of 'globalization'. However, even this process is fraught with new instabilities as evidenced by the Mexican and — more recently and even more dramatically — by the Asian financial crisis. At the same time integration of trade even within the standard neoclassical Heckscher-Ohlin-Samuelson model would imply a fall in the wages of unskilled workers of the north thus increasing inequality there (Krugman, 1996; Wood, 1994). The south is supposed to experience a more equalizing effect through trade; but empirically, there is very little evidence of this happening. Therefore, it is necessary to treat the rhetoric of globalization with caution. At best, we are experiencing a 'fractured' globalization. Integration of financial markets, for example, can lead to great benefits for all in a truly liberal world of equal actors. However, in a world of unevenness the evolutionary paths may lead to crisis unless institutions are designed properly. Leaving everything to the markets may produce the supreme irony of ultimately leading to crises which prevent some very important capital and commodity markets from functioning.

For these reasons, it is best to ask what roles the global capital markets are supposed to perform in a world of free capital mobility. The functions are variously described, but mainly emphasize the transfer of resources from savers to investors globally. In addition, the agglomeration of capital, selection of projects, monitoring, contract enforcement, risk sharing and pooling of risks are also mentioned. All these are legitimate functions of capital markets. However, despite much talk the crucial problem of handling various kinds of risks and the inability of simple free markets with international capital mobility to contain these risks completely or even adequately, are nearly always elided. What are some of the most important categories of these risks?

Exchange rate risk refers to the possibility that a country's currency may experience a precipitous decline in value. This risk is present in any type of exchange rate regime, with full or even partial currency convertibility. Both floating exchange

rates and pegging a currency to another single currency, or even a basket of currencies present such exchange rate risk to various degrees. Complete elimination of this risk is possible only with one world currency, or a completely fixed exchange rate regime. For obvious reasons these are not current evolutionary options.

Capital flight risk refers to the possibility that both domestic and foreign holders of financial assets will sell their holdings whenever there is an expectation of a capital loss. Exchange rate risk is one possible avenue through which such expectations may be formed. As with many types of expectations formation mechanisms, in a world of nonlinearity, bounded rationality and uncertainty, a Keynesian type of short termism<sup>5</sup> takes over. Investors head for the simply on the basis of short term calculations of possible loss, and herd behavior is a likely outcome. Financial distress follows for the hapless country from which capital thus exits in a hurry. In the extreme situation of large short term liabilities, the affected economy may land in a full-blown financial, or even economic crisis.

There is thus a systemic risk of financial fragility associated with the above risks. The risk of financial fragility also raises the question of the stability of the financial and political institutions. In some cases, increase in this type of systemic risk raises the possibility of a financial meltdown. In case of AFC, the risk of financial fragility increased over the 90s through maturity mismatch of loans. The fact that many of the short-term loans were in foreign currencies without risk-sharing mechanisms such as currency swaps in place, created further exchange rate risk which also increased the potential systemic risk. This is consistent with the view of Knight (1998) who affirms that although globalization has brought about spectacular increase in the flow of capital to emerging markets, the Asian financial crisis demonstrates that it can also create financial instability and contagion. Under fairly realistic conditions the banking system of emerging economies can respond in ways that worsen the impact of adverse shocks, causing severe macroeconomic repercussions and exacerbating systemic financial and economic fragility..

In the case of AFC, we also witnessed a fourth kind of risk for vulnerable economies that Knight(1998) and others have also recognized. This is the risk of contagion.<sup>6</sup> Some countries were unnecessarily victimized simply because expectations moved against their economic prospects as their neighbors experienced financial fragility and capital flight. This has important implications for both global and regional financial architecture. Both GFA and RFAs should try to minimize the contagion risk. Contagion can happen even without much financial and trade openness. However, the more integrated with the rest of the world, or even a region, an economy is, the more is the risk of contagion. There is some theoretical support for this last proposition in specific markets that are being globalized. For example, Calvo and Mendoza (1999) argue that the globalization of securities markets can promote contagion among investors by weakening incentives of gathering costly

---

<sup>5</sup> See Keynes(1936), in particular the discussion of long term expectations in chapter 12 .

<sup>6</sup> Of course, the risk of contagion is always present whenever a financial crisis breaks out. Whether actual contagion is observed depends on a number of factors including the domestic economy's ability to fight off speculative attacks.

country-specific information because the marginal benefit of gathering information may be decreasing as securities markets become more global in scope.

The key problem which underlies the above risk scenarios, long recognized by the practitioners before theorists started to study it, is that given informational problems and cost of building enforcing institutions, capital markets are almost always incomplete. Thus classical theorems of welfare economics no longer apply even within a closed economy. In a world of open economies these problems become more severe, and are directly related to the lack of global institutions of governance. The recognition of this point underlies the various proposals advanced so far. As Eichengreen (1999) documents, there are already many proposals for GFAs on the table. Even a partial cataloguing will have to include the many national proposals (e.g., US, UK, French and Canadian proposals), private proposals such as Soros' credit insurance agency, Edward's specialized agencies, Bergsten's target zones etc., and other international proposals. Among the international proposals could be included the IMF proposals, G-7 and G-22 proposals. Although they vary in scope and degrees of political realism, they share one feature in common. All of them fall into the *overarching type* of GFA category.

Although many of the proposals for GFA are possible theoretical solutions the evolutionary approach looks at path dependence and sequential selection processes as crucial. We need to recognize that the actual evolution of such institutions of financial governance will depend crucially on the coordination among the actors, in particular among some key actors in the global system. This leads us to the consideration of an evolutionary structural theory of GFA and RFAs.

### **3. Extending the Panda's Thumb: An Evolutionary Theory of GFA and RFAs:**

The "panda's thumb" argument can be extended to construct a theory of GFAs and RFAs. In order to motivate the discussion we can return to some aspects of AFC. In distinguishing among the countries that managed to survive the AFC and those that did not, John Williamson (1998), one of the proponents of the "Washington consensus," admitted that: "*The one dimension in which there is systematic difference between the two groups is with respect to whether or not they had liberalized their capital accounts.*"

All Asian crisis countries had accepted the IMF's Article VIII obligations, as evident from the historical documents. But as Bhagwati (1998) and others have pointed out, liberalizing trade and liberalizing financial sector have different policy implications. In line with the discussion in the previous section, theoretically, one should carefully distinguish the welfare impacts of financial market liberalization in an uneven world from such impact in a smooth world of equals with information symmetry. Indeed, next to unevenness, the most critical element is the role and the presence of *asymmetric information*. In a financial market, gathering, selecting, using and providing information are central to its proper functioning, yet it is precisely here that market failures from asymmetric information can arise. (Stiglitz, 1994).

But the evolutionary structural theory goes further than simply cataloguing moral hazard and adverse selection problems. On the *explanans* side are also *the asymmetries in the size, structure and capabilities of the economies and polities*. These asymmetries constrain some polities, particularly the economically disadvantaged ones from developing as quickly as possible in an equitable manner. The recent UNCTAD report on the poorest underdeveloped countries points this out empirically.<sup>7</sup> The theoretical significance of these features of the real world is that no uniform set of rules can work for all the economies and polities in the world. A *fortiori*, it follows that for GFA and RFAs to serve these poor countries as well as the rich countries equally well, special provisions should be in place.

It may appear that the least developed countries are only a special case. But that is not the case. The NIEs, the European social democracies, Japan etc. each in its own way is also different. This poses the real theoretical challenge: how can we even attempt to theorize in the face of such diversity? The way out is through a consideration of the basic needs of the system and asking if these can be satisfied better under arrangements that are different from the IMF and the “Washington Consensus.”

The work by Barry Eichengreen(1999),and others<sup>8</sup> show that it is possible to move beyond the post Bretton Woods situation. In contrast with the conservative Meltzer report, all of these authors emphasize the need to strengthen the IMF in certain dimensions. However, not all of them recognize the crucial need also for the RFAs and the role they can play in creating an enabling environment for the state to implement beneficial economic policies. A completely evolutionary theory of GFA recognizes the need for RFAs from both an *evolutionary* and a *structural* perspective.

---

<sup>7</sup> See UNCTAD(2002), particularly sections 5 and 6.

<sup>8</sup> See for example, Azis, Iwan J (1999) *Do We Know the Real Causes of the Asian Crisis? Global Financial Turmoil and Reform: A United Nations Perspective*, The United Nations University Press, Tokyo.

Khan, Haider A. (forthcoming a) *Global Markets and Financial Crisis: Asia's Mangled Miracle*, Macmillan and St. Martin's Press

Sachs, Jeffrey D., A. Tornell., A.Velasco. (1996) *Financial Crises in Emerging Markets: The Lessons From 1995*, Brookings Papers on Economic Activity, No 1.

Sachs, Jeffrey D, and Wing Thye Woo (2000). *Understanding the Asian Financial Crisis*, in Woo, Wing Thye, Jeffrey D. Sachs, and Klaus Schwab (eds), The Asian Financial Crisis: Lessons for a Resilient Asia, The MIT Press.

Summers, Lawrence H (2000). *International Financial Crises: Causes, Prevention, and Cures*, American Economic Review, Vol 90, No.2.

Tobin, James., and Gustav Ranis (1998). *The IMF's Misplaced Priorities: Flawed Funds*, The New Republic, available online at the following address: <http://www.thenewrepublic.com/archive/0398/030998/tobin030998.html>

Yoshitomi, Masaru and Kenichi Ohno (1999), "Capital Account Crisis and Credit Contraction: Towards a Better Management of Systemic Curre

Given the lack of political resolve, a point made forcefully by Eichengreen among others, there is little chance of creating *institutional structures* in the manner of the 1944 Bretton Woods agreement. The recent path of the world economy does not lead to this immediately. At the same time, the recent path does not lead to only neoliberalism. It is possible to both reform the IMF, as Eichengreen suggests, and to create new RFAs to complement such reforms. Thus this theory leads to the question of identifying a spectrum of GFAs. Most important among these are those that combine the GFAs like a reformed IMF with appropriate RFAs.

Formally, the heuristic argument presented above can be established via a careful consideration of *path dependence* during the evolutionary history of the GFA. In order to do this in a conceptually rigorous manner, the concept of *path dependence* itself has to be refined and formalized in a specific way. I have developed this idea elsewhere, and will only sketch the conceptual path to be followed briefly. As figures 1, 2 and 3 show respectively there can be deterministic(D), completely stochastic(CS), and partially deterministic (PD) characterizations to path dependence. Eschewing the formal apparatus of graph theory and neural network dynamics which can be used to describe these rigorously, we can simply say that in deterministic path dependence there is only one choice of path. Everything is as it should be, since there are no bifurcations at any point in history. In fact, we can make a stronger statement. At *no* point in history is there even a *possibility* of even a bifurcation. Most people will see this as an extreme, and in case of human institutional design, perhaps as an unrealistic case.

<< FIGURES 1,2,3 HERE >>

The purely stochastic case is all *random mutation*. Again, there is no way that conscious choice can play a role here either. Blind chance determines the outcome. The difference between type D path dependence and type CS path dependence is simply that in the former case the future can be predicted with probability 1, but in the latter case, at best a distribution of future states may be known. In some complex way, the conditional probabilities, if known in advance may determine a stochastic path structure. But the very stochasticity makes the notion of path dependence of limited relevance in this case. We could define a further, *completely uncertain* “path dependence” where not even a distribution of such states be known. But all three cases discussed so far theoretically foreclose the possibility of conscious choice and at least partial institutional design.

The last type of path dependence, i.e., the PD variety leaves some room for evolution to be a result of at least some kind of boundedly rational human activities. As shown in fig. 3., given an array of possible paths at each point in history, there is some likelihood of being able to choose a particular path. The neural network type “learning from history” modeling approach actually allows the process of (boundedly rational ) learning to influence these likelihoods in the future. Thus a complex set of human activities including learning and improving policy making capabilities can influence which network of paths are followed over time. While the number of available paths at any point in history may be large, they are never infinite. Therefore, combinatorial mathematics will in most cases, show the existence of the most likely evolutionary outcome. However, the caveat that large, seemingly random fluctuations(e.g., a war) can throw these calculations off is always a (rare) possibility.

Fortunately, barring such events as wars, revolutions, complete meltdowns of financial systems etc. there are not at present an unmanageably large number of outcomes that are possible for the GFA. In fact, if we are willing to assume a

continuum with nothing but an overarching *global* architecture for international finance with regional impurities added as another type we have just two types of possible evolutionary outcomes for the institutional history of GFAs from a theoretical point of view.

A further point regarding evolutionary mechanisms needs to be made before further consideration of the two types of GFAs. As noted before, the original “panda’s thumb” argument of Stephen Jay Gould, points to this contraption as an ingenious if inelegant trick of nature to work with available material that can serve further evolutionary ends. Panda’s thumb is, in reality, not a thumb at all, but a structure built from the enlargement of a bone that would really have been a part of panda’s wrist. But the panda can make do with this evolutionary contraption quite well. It can strip leaves from the bamboo plants and feed itself. The continued existence of the species shows the evolutionary value of such makeshift contraptions. How can this metaphor fit the theory developed so far?

Paul David makes the important observation that institutions may evolve in a similar fashion:

‘Evolutionary processes in biology work largely with the materials that are readily available. So does institutional evolution...’<sup>9</sup> While this may not be the only way institutions evolve, there is a great deal of plausibility to the argument that in specific instances such as that of the evolution of intellectual property rights institutions “the cunning of panda’s thumb” may have a significant role to play. I would like to suggest that the same argument also can apply to a large extent in the evolution of complex institutional structures such as the GFA. However, a further modification is also necessary. This has to do with the role of evolutionary theory in institutional design.

We begin with the assumption that human design is not perfect. Our rationality is bounded, the social reality is complex and uncertainty is endemic. Therefore our theories are only approximations to a complex and fundamentally only partially knowable reality. However, to the extent the theory offered here is a better approximation to reality compared to other rivals, such a theory can to some extent guide institution building. The precise reach of the theory will determine the extent to which this is possible. At a minimum, the theory can offer some guidelines as illustrated below. Such a theory combines the somewhat blind evolutionary forces at work with some cautious human design. Hence this approach to studying institutional design can be called “the extended panda’s thumb” approach.

#### **4. What Kind of Thumb? Two Broad Types of GFAs Following from the Evolutionary Theory:**

Consistent with the above discussion there are mainly two types of GFAs. The first type, which can be created at special evolutionary moments can be called *Overarching GFAs*. Gold standard under the UK hegemony and Bretton Woods under the threats of a postwar depression are two examples. Recent history does not support the hope that such events are about to happen again. Therefore, a second type of evolutionary path resulting in a hybrid form should be recognized. This is the hybrid

---

<sup>9</sup> See David ( ) p. 23

coexistence of a GFA together with one or many RFAs. We can call this type a *hybrid GFA* for shorthand reference. Once again, Asia after the AFC is a good place to begin the analysis.

In the Asian case, as many have observed, the financial sector liberalization followed the pre-AFC GFA by default. There were some short-term gains of the policy, but ultimately it resulted in severe instability. More generally, as Kaminsky & Reinhart (1999) show, based on the episodes of 76 currency crises, of which 26 are also characterized by banking crises, financial sector liberalization can result in a boom-bust cycle by providing easy access to short-term financing. Proponents of liberalization suggest some sort of micro sequencing in order to prevent such adverse consequences. With some variations, the most commonly suggested sequence is: improve the quality of regulation, make sure they are enforced, and then improve the supervisory mechanisms. Once the markets are liberalized, the level of bank's minimum capital requirements can be brought closer to what the *Basle Accord* requires.

As one author (Azis, 2002c) who, of course, does not use the same terminology as developed here, nevertheless points out, there is a contradiction in this type of GFA arrangement. Rushing to liberalize without thinking further about the consequences in the precise institutional contexts of these countries spelled disaster.<sup>10</sup>

IMF recommendation during this period led to the increase in interest rates. Because of the common prescription under the GFA this occurred in all Asian crisis countries. Such high rates created more moral hazard and adverse selection problems, thus showing that the incentive system has indeed been altered, and led to the undertaking of bad risk by the banking sector (Hellman, Murdock and Stiglitz, 2000). As Azis(2002c) correctly observes:

Under these circumstances, the amount of investment credits going to risky sector rose (adverse selection), the incidence of bail out in the absence of free-exit scheme also increased (moral hazard), and the subsequent banks' franchise values (expected returns) declined. All these are precisely what the "pre-conditions prior to liberalization" are expected to avoid. Thus, the implicit logic is inherently self-conflicting, i.e., expecting bank's prudent behavior while allowing 'franchise value' to fall. The suggested preconditions, although seemingly logical, simply do not match with the prevailing institutional conditions.<sup>11</sup>

The existing conditions were not correctly interpreted by the IMF observers because of an inappropriate theoretical orientation. As Azis points out further:

The IMF persistently argued for liberalizing the sector and meeting the pre-conditions simultaneously. A study by the Fund on the sequencing of capital account liberalization using the case of Chile, Korea, Indonesia and Thailand, for example, stresses the importance of proper sequencing if benefits from the liberalization are to be achieved and the risks to be minimized. The study also argues that financial sector liberalization, especially capital account liberalization, should be a part of a

---

<sup>10</sup> But when the Asian crisis countries liberalized the financial sector in 1980s, the aforementioned preconditions (assumptions) were not in place. Yet, they were rushed to liberalize by the IFI. Ironically, when at the early stage the policy showed favorable impacts, e.g., higher economic growth, greater access to financial services, the IFI applauded it. But when the crisis hit, the very same countries previously praised were swiftly placed into the category of those with misplaced development strategies. All of a sudden, nothing was right with these countries. When confronted with such an embarrassing contradiction, the international institutions are quick to claim that they actually *saw* the faults, and *already reminded* the governments about the existing flaws (e.g., weak banking system, unsustainable exchange rate system, and widespread corruption). Azis(2002c) p.3.

<sup>11</sup> Azis(2002c) p.3

coordinated and comprehensive approach, in which the sequencing of regulatory and institutional reforms is critical. The design of macroeconomic and exchange rate policies should also play a vital role (Johnston, Darbar, and Echeverria, 1997). While intuitively making sense, such conclusions are too broad, far from being practical. No one would argue against the importance of making liberalization policy (or any policy for that matter) consistent with the prevailing macroeconomic policy. But how do you do it, remains unanswered. The information contained in such a study is of limited value to policy makers. Yet, while many countries still had problems to meet the stated preconditions, they were pushed to accelerate the liberalization policy by recommending one or two new measures to safeguard. More often than not, these measures are based on the practice of developed countries that have different institutional conditions.(emphasis mine)<sup>12</sup>

Here the author correctly pinpoints the failure to recognize unevenness as a key feature of the failure of the IMF to prescribe the correct medicine. In fact, IMF did much worse--- it prescribed the wrong medicine, a set of measures that worsened the impact of the AFC. This situation illustrates the danger of being in the grip of a (pseudo-) universalistic theory that simply cannot be applied in the real world of unevenness without serious distortions that may cause great harm. An alternative is to work with our type two hybrid combination of GFA and RFAs. Again, Asia can be used as an illustration. There are many aspects one could focus on; I choose to look at the debt and capital flows situation prior to the crisis in specific countries.

---

<sup>12</sup> Azis(2002c)pp.3-4

**Table 1**  
**External Debt Outstanding (Billions of US\$)**

	1990	1991	1992	1993	1994	1995	1996
<b>ASEAN-4</b>							
External debt	144.3	166.1	180.9	194.1	221.8	257.0	274.5
Short-term debt	25.7	33.8	41.7	49.6	58.2	69.8	80.4
(% of total debt)	17.8	20.3	23.0	25.6	26.2	27.2	29.3
Long-term debt	118.6	132.3	139.2	144.5	163.6	187.2	194.1
(% of total debt)	82.2	79.7	77.0	74.4	73.8	72.8	70.7
<b>Indonesia</b>							
External debt	69.8	79.9	88.3	89.6	96.6	116.3	118.1
(% of GDP)	65.9	68.4	69.0	56.6	54.6	53.3	52.0
Short-term debt	11.1	14.3	18.1	18.0	17.1	24.3	29.3
(% of total debt)	15.9	17.9	20.5	20.1	17.7	20.9	24.8
Long-term debt	58.7	65.6	70.2	71.6	79.5	92.0	88.8
(% of total debt)	84.1	82.1	79.5	79.9	82.3	79.1	75.2
Debt-service ratio	30.9	32.0	31.6	33.8	30.0	33.7	33.0
<b>Malaysia</b>							
External debt	16.0	18.1	19.8	23.2	24.8	33.2	31.6
(% of GDP)	37.6	37.9	34.6	37.1	37.5	40.3	38.1
Short-term debt	1.9	2.1	3.6	6.9	6.2	7.3	7.5
(% of total debt)	11.9	11.6	18.2	29.8	25.0	22.0	23.7
Long-term debt	14.1	16.0	16.2	16.3	18.6	25.9	24.1
(% of total debt)	88.1	88.4	81.8	70.2	75.0	78.0	76.3
Debt-service ratio	10.3	7.7	6.6	7.7	7.7	6.1	6.0
<b>Philippines</b>							
External debt	30.3	32.2	33.3	35.7	39.3	39.5	45.7
(% of GDP)	69.1	71.5	62.3	66.1	61.3	53.2	56.0
Short-term debt	4.4	4.9	5.3	5.0	5.7	6.0	6.3
(% of total debt)	14.5	15.2	15.9	14.0	14.5	15.2	13.8
Long-term debt	25.9	27.3	28.0	30.7	33.6	33.5	39.4
(% of total debt)	85.5	84.8	84.1	86.0	85.5	84.8	86.2
Debt-service ratio	27.0	23.0	24.4	25.5	18.5	15.1	15.4
<b>Thailand</b>							
External debt	28.1	35.9	39.5	45.7	61.1	68.1	79.0
(% of GDP)	32.9	36.4	35.5	41.7	45.3	47.0	49.9
Short-term debt	8.3	12.5	14.7	19.7	29.2	32.2	37.3
(% of total debt)	29.5	34.8	37.2	43.1	47.8	47.3	47.2
Long-term debt	19.8	23.4	24.8	26.0	31.9	35.9	41.7
(% of total debt)	70.5	65.2	62.8	56.9	52.2	52.7	52.8
Debt-service ratio	16.9	13.0	13.7	18.5	15.6	11.7	14.5

Sources: International Financial Statistics, 1997; World Debt Tables, 1996.

**Table 2**  
**Net Capital Flows (% of GDP)**

	1983-88	1989-95	1991	1992	1993	1994	1995	1996	1997
<b>China</b>									
Net private capital flows	1.2	2.5	1.7	-0.9	4.5	5.6	5.2	4.7	3.7
Net direct investment	0.4	2.9	0.9	1.7	5.3	5.9	4.8	4.6	4.3
Net portfolio investment	0.2	0.2	0.1	-	0.7	0.7	0.1	0.3	0.2
Other net investment	0.5	-0.6	0.7	-2.6	-1.5	-0.9	0.2	-0.3	-0.8
Net official flows	0.3	0.5	0.3	0.8	0.9	0.4	0.3	0.2	-0.1
Change in reserves	-0.4	-2.2	-3.7	0.5	-0.4	-5.6	-3.2	-4.0	-4.5
<b>Indonesia</b>									
Net private capital flows	1.5	4.2	4.6	2.5	3.1	3.9	6.2	6.3	1.6
Net direct investment	0.4	1.3	1.2	1.2	1.2	1.4	2.3	2.8	2.0
Net portfolio investment	0.1	0.4	-	-	1.1	0.6	0.7	0.8	-0.4
Other net investment	1.0	2.6	3.5	1.4	0.7	1.9	3.1	2.7	0.1
Net official flows	2.4	0.8	1.1	1.1	0.9	0.1	-0.2	-0.7	1.0
Change in reserves	-	-1.4	-2.4	-3.0	-1.3	0.4	-0.7	-2.3	1.8
<b>Malaysia</b>									
Net private capital flows	3.1	8.8	11.2	15.1	17.4	1.5	8.8	9.6	4.7
Net direct investment	2.3	6.5	8.3	8.9	7.8	5.7	4.8	5.1	5.3
Net portfolio investment	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Other net investment	0.8	2.3	2.9	6.2	9.7	-4.2	4.1	4.5	-0.6
Net official flows	0.3	-	0.4	-0.1	-0.6	0.2	-0.1	-0.1	-0.1
Change in reserves	-1.8	-4.7	-2.6	-11.3	-17.7	4.3	2.0	-2.5	3.6
<b>Philippines</b>									
Net private capital flows	-2.0	2.7	1.6	2.0	2.6	5.0	4.6	9.8	0.5
Net direct investment	0.7	1.6	1.2	1.3	1.6	2.0	1.8	1.6	1.4
Net portfolio investment	-	0.2	0.3	0.1	-0.1	0.4	0.3	-0.2	-5.3
Other net investment	-2.7	0.9	0.2	0.6	1.1	2.5	2.4	8.5	4.5
Net official flows	2.4	2.0	3.3	1.9	2.3	0.8	1.4	0.2	0.8
Change in reserves	0.5	-1.1	-2.3	-1.5	-1.1	-1.9	-0.9	-4.8	2.1
<b>Thailand</b>									
Net private capital flows	3.1	10.2	10.7	8.7	8.4	8.6	12.7	9.3	-10.9
Net direct investment	0.8	1.5	1.5	1.4	1.1	0.7	0.7	0.9	1.3
Net portfolio investment	0.7	1.3	-	0.5	3.2	0.9	1.9	0.6	0.4
Other net investment	1.5	7.4	9.2	6.8	4.1	7.0	10.0	7.7	-12.6
Net official flows	0.7	-	1.1	0.1	0.2	0.1	0.7	0.7	4.9
Change in reserves	-1.4	-4.1	-4.3	-2.8	-3.2	-3.0	-4.4	-1.2	9.7

Source: World Economic Outlook, December 1997.

As both tables 1 and 2 show, the borrowing in short-term market and the increased flow of foreign capital both occurred almost simultaneously in these countries. As the real exchange rate appreciated, competitiveness suffered, and vulnerability to sudden reversals of capital flows increased. It must be emphasized that these were systemic features that went largely unnoticed by the IMF or the private sector. As is well known, in a nonlinear system the vulnerability to sudden shocks is a logical possibility. In case of Asia, this became an empirical reality of nightmare proportions.

. With most debtors being in the corporate sector during the AFC, the capacity to invest became severely constrained. The debt-deflation scenario became the reality because the price effects of depreciated exchange rates did not occur until much later, if at all. Hence, the initial currency crisis became first a more general financial crisis and then a full-blown economic crisis. In Indonesia it also became a social and political crisis

The Asian crisis showed that, the composition of capital flows matters. The fact that there were sudden reversals of capital flows during 1997 and 1998 led many to believe that most capital flows in the region were of portfolio investment type. Reversals of such capital can strain the region's financial system sufficiently to cause or exacerbate its collapse (Rodrik and Velasco, 1999). However, while it is true that portfolio investment was on the rise, data indicate that foreign direct investment (FDI) remained the largest in all Asian crisis countries. As shown in Table 1, in all Asian crisis countries foreign debts increased persistently until the onset of the crisis. These are debts of the private sector from foreign private lenders. Regional monitoring with the help of a theory such as the one proposed here could have caught the problem and a regionally, ultimately globally, coordinated solution could be attempted. But this was never a possibility under the then existing circumstances. We now know that financial and balance-of-payments crises became interlinked precisely because of the existence of foreign-currency-denominated liabilities (foreign debt) in the domestic financial system (Krueger, 2000). This hindsight can be used to develop RFAs in Asia, Latin America and a few other regions.

## **5. The Role of an RFA: a counterfactual experiment with the Asian case**

The previous discussion raises the logical question: suppose there existed an RFA for Asia during the AFC, how would it have responded to the crisis that would have been different? In order to answer this question it is useful to start with a review of the actual policy prescriptions of the IMF.

A "Washington Consensus" policy mix of monetary tightening and fiscal restraints was imposed as part of the IMF conditionalities. The experience during the Mexican crisis in 1995 had convinced the Fund that such a policy mix was appropriate for Asia as well, despite the fact that the pre-crisis conditions in Asia were

quite otherwise.<sup>13</sup> Another element emerged in Asia that was indeed new. The IMF suggested a rather radical and fundamental change in the countries' institutional structure.<sup>14</sup> In the event, neither set turned out to have been well-conceived.

As already observed, the Fund's insistence on severely tightening the monetary policy by raising the interest rates turned out to be incorrect and counterproductive. Its arguments for remaking many institutions in Asia did not make evolutionary sense although all would agree that ending corruption, curtailing special business privileges, and imposing the practice of good governance, including good corporate governance were good overall goals.<sup>15</sup> But quite apart from the wellknown fact that this falls outside the Fund's mandate, such adjustments at the time could result in further instability. In the words of Morris Goldstein, an ex-IMF staff member: *".....both the scope and the depth of the Fund's conditions were excessive.....They clearly strayed outside their area of expertise.....If a nation is so plagued with problems that it needs to make 140 changes before it can borrow, then maybe the fund should not lend."* (New York Times, October 21, 2000). Although not a conscious advocate of the evolutionary theory advanced here, Goldstein's long experience and solid sense of institutional matters led him to the right conclusions in this matter.

In contrast with the behavior of the IMF, a regional financial architecture, had it been present could have done at least the following on the basis of applying an evolutionary theory of financial instabilities under globalization:

1. Through constant regional monitoring it would have sensed the danger ahead of time. Even a regional monitoring unit alone would have been able to do better than the IMF team in Asia.
2. Through constant formal and informal contact with the officials in member governments and the private sector, it would have sized up the possible extent of the problem earlier and better than did the IMF.
3. Through prompt and early action it would have provided liquidity to the system, and punished bad management in coordinated measures with the national governments.
4. It would have been able to start regional discussions about bankruptcy and work out procedures by keeping in close touch with the history and legal issues facing particular countries.
5. It would have been in a position to use both moral suasion and toughness to keep both regional creditors and debtors in line.

The fundamental requirement for this, however, was an actually existing RFA with enough liquidity and technical expertise. The Asian Development provided quite a bit of liquidity to Korea in particular, but did not even have a monitoring unit when the crisis broke out. Furthermore, the autonomy and integrity of any future RFA, in Asia and elsewhere are issues that need discussion. The relationship between the RFAs and the IMF also needs to be further specified. These are matters that are of

---

<sup>13</sup> James Tobin and Gustav Ranis were among those who believed that the IMF programs in Asia were based on the Fund's experiences with Mexico in 1994: ".....The IMF's Asian packages are based on its experiences with Latin America, in particular with Mexico in 1994." (Tobin and Ranis, 1998).

<sup>14</sup> Azis(2002c) suggests: 'The experience with policy adjustments of this kind in Eastern Europe and the former Soviet Union (from communism to market economy) had inspired the Fund to do the same thing in Asia.' (p.7)

<sup>15</sup> See Khan(1999a, b; and 2001) on Asian corporate governance reform, and the sketch of an evolutionary theory.

necessity evolutionary by nature. In this paper, I have tried to specify some principles that may help in selecting the more beneficial evolutionary path.

One such principle has been “the extended panda’s thumb” during evolution. In case of GFA, this strengthens the case for the hybrid variety. Using both the existing global institutions such as the IMF, and building upon existing regional initiatives may offer a better chance of creating a beneficial makeshift hybrid GFA than the textbook type pie-in-the-sky schemes correctly dismissed by Eichengreen. However, Eichengreen does not consider the role of RFAs in his otherwise excellent analysis. One way to read the present paper is to see it as filling this gap by using “the extended panda’s thumb” principle along with some other arguments.

Before leaving the question of the analytical distinction between the two types of GFAs it is instructive to ask whether the theory of the second best is relevant in making this distinction. Although the language of evolutionary theory is different, this can be done in a way that throws further light on why the hybrid form is important. In a first best world without frictions, information problems and market imperfections an overarching GFA is indeed optimal. However once we depart from any of these we are in the second best world. Interestingly, given these imperfections, at least along some dimensions, a hybrid architecture with RFAs can (locally) improve upon the surveillance problems that an overarching GFA will face. As long as local information gathering and monitoring can be improved under a (local) RFA, there is an advantage to having an RFA. In the world of second best this can be called “the principle of localism”.<sup>16</sup>

## **6. Towards a Workable Hybrid GFA: RFAs, the IMF and National Policy Management During Transition:**

### *6.1 RFA as part of a hybrid form of GFA:*

If the argument presented so far is valid, then several propositions can be accepted. First, there may be more than one evolutionary possibility; so there may not be a unique, global optimum set of institutions. Second, the goal of achieving stability and sustainable growth in a world of scarce resources leads to exercising prudence as a principle, particularly when costs are distributed unevenly over space and time. Third, a combination of global institutions with regional and national level institutions may provide more public good than focusing simply at the global level. The case for RFAs has so far rested implicitly on the third proposition. I now wish to elaborate more on this point and link it to the formulation of national economic policies and institution building at the national level as well. It is best to focus again on a concrete case such as the post-crisis Asia to give substance to the formal argument.

Since the crisis, the IMF, the World Bank and the national policy making bodies have been in intense consultation. The individual East Asian economies have taken numerous measures such as improving bank supervision, allowing greater exchange rate flexibility etc. to inoculate themselves against future capital account shocks. However, most of them are still vulnerable to large negative capital account shocks.

---

<sup>16</sup> I am grateful to Barbara Stallings for very helpful discussion on this point.

The national strategy of having a very large stock of foreign reserves to deal with large capital flight may work but it is an extremely expensive strategy. No one can foretell how frequent such crises may be, and how expensive; but if the past is any guide, even infrequent crises can be quite expensive to manage in this manner. This is not to say that such measures should not be taken. On the contrary, these measures are and should be a part of the transitional national management strategy. However, more is clearly needed. It seems that following this logic, an increasing number of East Asian policy makers are realizing that although they may not have the capacity to change the international financial architecture immediately, creating a regional financial architecture may be an attainable goal. There can be a whole range of regional financial cooperation policies leading to more permanent institution building. These could begin with a peer review process such as the G7 process. Using this as the reference point, a move to mutual liquidity provision and some form of enforcement mechanism could be adopted. These could be enhanced through exchange rate coordination and enhanced surveillance process. Ultimately, such a process could evolve into an RFA that could have its own institutional and organizational structure.

In the Asian case, such an evolutionary process has already started. The most important steps taken so far are: the Manila Framework Group Meeting, the ASEAN Surveillance Process, the ASEAN+3 Surveillance Process, and the Chiangmai Initiative-related Surveillance Process.

It can be said that the performance of Manila Framework Group as a mechanism for regional financial cooperation and regional financial surveillance has not yet reached its potential. The reasons are related to institutional incapacity which has prevented the parties from specifying clearly the objectives of information exchange and surveillance. Consequently, no priorities, targets, and rules have been set for the process of information exchange and surveillance. Most importantly, there is no actual peer review process; the surveillance process seems to be simply general discussion of the global and regional economic outlook. Finally, there seems to be no attempt to formulate any country-specific or region-wide recommendations for policy actions--- a point to which I will return at the end.

The other processes also have much room for improvements and the actual prospects for improvement, as shown by the Chiangmai Initiative-related Surveillance Process. In addition to an expanded ASEAN Swap Arrangement (ASA) that includes all ASEAN members and a network of bilateral swap agreements among ASEAN countries plus China, Japan and South Korea, the initiative has opened the door for further discussion about concrete policy coordination and institution building. In so far as the swap arrangements are concerned, currently 10 percent of the swap arrangements can be disbursed without the IMF involvement.

Even with this modest beginning, there is now a need for the swap-providing countries to formulate their own assessments about the swap-requesting country. Costs of such information gathering can be economized through regional cooperation. Such a move will also make it possible to pre-qualify members for assistance if and when the need for such assistance arises. This will also help fight contagion and prevent capital flight when actions are taken promptly before a crisis point is reached because of avoidable delays. Acting in accordance with the principles of prudent management stated earlier, there could be a regular policy dialogue at the deputy minister level. Finally, at the organizational level, the evolutionary approach could lead to the establishment of an independent surveillance unit to serve as the core of an RFA, and to lead the policy dialogue. The proposed policy dialogue process should

pay particular attention to the root problems in East Asia's weak financial systems (e.g. prudential supervision, risk management, and corporate governance), and actively promote the development and integration of long-term capital markets. At this point, it is not essential to pinpoint any further the precise organizational blueprint for such an RFA; but the point that the process underway can result in an appropriate institutional structure with proper organizational design is important to grasp. Evolutionary economic theory suggests that an open architecture will be better able to absorb future shocks, learn from them, and modify itself. Once again, such practice is closer to an "extended panda's thumb" type of evolution than the striving for a global optimum.

There are two key aspects of such an interrelated architecture that will crucially affect the workability of a possible RFA in Asia or in any other region. First, the willingness of a reformed IMF to permit the RFAs to have a certain degree of regional autonomy. For this the complementarity and burden sharing aspects of the GFA with RFAs need to be recognized. This is a special case of complementary institutional network(CIN). Second, and another instance of CIN, is the viability and cooperation at the national level. A slogan accompanying globalization is that the nation state can no longer act on its own. This may be true in certain areas of macroeconomic policy, but on a wide range of issues from tax policies to environmental policies the national governments can within limits formulate and implement policies. In the area of finance, even under WTO rules, there are possibilities of not only policy maneuvering but also of institutional reform and new institution building. In addition to addressing such matters as prudential supervision, risk management, and corporate governance the need for building other institutions for risk sharing, human development and policy dialogues within the nation loom large as tasks during the transitional management at the national level.

### *6.2 The Changing Role of the IMF within a Hybrid GFA:*

I have already alluded to some of the ways in which the IMF will need to change its ways if the hybrid form of GFA I am suggesting here is to become a viable option for institution building. Here I offer a more systematic approach guided by two underlying principles:

1. *The principle of symmetry*, i.e., the surplus and deficit countries should be treated equally. This was, of course, recognized by Keynes quite early on, but it did not find a place in the ultimate design of the Bretton Woods institutions.
2. *The principle of burden-sharing*, i.e., during episodes of crisis management the IMF will share the management burden with the RFAs and through them also with the affected countries and their neighbors.

Both the principles recognize the practical impossibility of the IMF being transformed into a global central bank in the near future. What the IMF cannot do now and will not be able to do in the foreseeable future is to follow Bagehot's dictum to lend freely against good collateral at a high interest rate in time of crisis. Unless SDRs become the commonly accepted and easily expandable means of settlement, this role will remain foreclosed. It is unlikely that the principal shareholders of the IMF will allow such a change to occur. Also, compared to a national central bank

dealing with a problematic domestic financial institution the IMF has a limited ability to force corrective action. Yet, there will clearly be a role for IMF lending, and the consequent moral hazard will need to be recognized. But just as the moral hazard from having fire fighters ready to fight fires does not compel thoughtful communities to abolish fire stations, the global community also cannot abolish the IMF, or reduce its resources simply because there is a moral hazard problem associated with such institutions. The second principle above, the principle of burden sharing with the RFAs, national governments and the private sectors should go some distance towards both increasing the overall resources available, and mitigating the moral hazard.

In addition, the Fund can make a concerted effort to manage the private creditors. Most important from the point of view of managing crises will be the incorporation of new provisions on loan contracts so that orderly work out procedures become feasible. The Fund can also lend into arrears as a means to provide debtor-in-possession financing. Such a provision, along with more direct measures vis-à-vis the creditors, can help to bring the creditors to the bargaining table during a crisis.

Such measures to manage the creditors should also be complemented by increased surveillance of financial markets. Strengthening supervision is one aspect. Arriving at independent assessments of financial risk is another, related aspect of moving in this direction. However, it is important to realize that even after adopting this stance, the risk of crises will still remain. Not all crises can be foreseen, much less prevented. The best that can be done is to draw the countries, the private sector and the RFAs together in an effort to strengthen the financial structures, including information gathering and processing capabilities. A cooperative structure where the Fund recognizes the need for hybridity will also help to reduce the reaction time.

Reducing the reaction time can help only if the policies undertaken can not do much harm even if they are not successful in achieving their positive aim. The IMF has been correctly criticized for suggesting a “one-size-fits-all” policy package. Here again, a changed institutional structure with a more flexible IMF will mean a case-by-case approach where the RFAs will play a significant role. National economic policies such as requiring borrowers to unwind positions in increasingly risky situations, curbing excessive foreign borrowing, limiting portfolio investment, cautionary policies towards derivatives and off- balance sheet items may need to be examined as serious policy options. Tobin tax, or individual country taxes of the Chilean variety should also be given serious consideration. The *mantra* of free capital movements together with the refrain that there is no alternative needs to be revised appropriately to incorporate the available tools that the Fund can help countries use to mitigate the risks arising from such capital movements.

It is not clear that the Fund can do much in instituting a more stable exchange rate regime. The pegged rate system, advocated among others, surprisingly by the Wall Street Journal, will create one-way bets for speculators. If there were enough liquidity provided by the IMF or a Global Central Bank to maintain par values, this would not be a serious problem. However, if the argument of this section has any empirical relevance, then it is simply that the IMF can not at present provide such liquidity. It is also quite unrealistic to expect a global central bank to emerge soon.<sup>17</sup> Free floating, on the other hand, can lead to disasters when exchange rates collapse suddenly instead of finding a new stable equilibrium. Such perverse dynamics was

---

<sup>17</sup> This observation reinforces the necessity to think in terms of an “extended panda’s thumb”-like institutional arrangement.

observed during the AFC, particularly in the Indonesian case. Neither currency boards nor perfect flexibility can prevent vulnerable currencies from collapsing. Rather a managed float before any signs of crisis appear together with a prudent management of the financial and real sectors would seem to be both pragmatic and feasible at this point. Strengthening the capacities of central banks will have better pay off here than urging the IMF to twist the arms of the countries through conditionalities.

## **7. Summary and Conclusions:**

This paper has taken an evolutionary approach to study the prospects for a global financial architecture. The theory of institutional change that is the outcome of this effort can be called “an extended panda’s thumb”(EPT) approach. The EPT approach to institutional change involves the incorporation of a cautious role for economic theories and their institutional prescriptions in the history of path dependent evolution of institutions. This methodological and theoretical approach comes with some caveats. Along with the caveats regarding the real possibility of choosing the scientifically inappropriate theory, there is also an emphasis on the role of uncertainty and the partial nature of our scientific knowledge. Furthermore, the EPT approach assumes that rationality is bounded and learning is costly. Therefore, the “extended panda’s hand” argument puts great emphasis on the comparison and testing of various theoretical alternatives with different institutional and policy implications.

In this paper, I have argued that the design of a GFA would in all likelihood have to follow an extended panda’s thumb like development. Instead of jettisoning the IMF and other seemingly inefficient regional arrangements, I argue for serious institutional reform under the existing framework using appropriate theoretical and empirical guidelines. Ironically, in a world of bounded rationality and uncertainty, such an approach will be relatively more efficient than the search for the “optimal” institution under the assumptions of maximizing agents who seemingly face no computational or other costs of learning to be (more) rational.

In times of crisis, there are well-meaning suggestions of radical institutional restructuring that fade away when the immediate crisis is over. Only a few farsighted or worrying types may still voice lingering concerns. The AFC, and the proposals for an *overarching type* of GFA--- to use the terminology developed here--- and the subsequent fate of these proposals is a case in point. However, the history of crises shows that they can not be prevented once and for all in a monetary economy with unpredictable ebbs and flows in capital movement. This history also shows that financial markets have short memories and limited longterm learning capacity.

Given these features of the real economic world, an evolutionary approach admits of multiple evolutionary equilibria, and a need for realistic institutional design that recognizes path dependence without the disabling and in most cases incorrect slogan that there is no alternative. Such an approach applied to the recent economic history leads to the identification of two broad categories of global financial architectures. The *hybrid* variety advocated here on the basis of both realism and systemic efficacy will nevertheless involve much institution building that is always fraught with the danger of politics-gone- awry. Thus the political problems of coalition building and ensuring the least cost cooperative outcome need attention. The limited achievements

and remaining problems that can be seen from the Asian example discussed here should provide concrete motivation to think further about such problems of designing institutions in the real world currently.

Given the evidence presented here, the “panda’s thumb” argument complemented by a role for appropriate theories of institutional mix and design, can be used to start some fruitful discussion about the role a reformed IMF can play in creating a new GFC. Equally important, from the evolutionary theoretical perspective, is the possible usefulness of the RFAs. In these regards, the hybrid GFA can be really an ingenious way to use the complementarity of global and regional institutions effectively.

## References

- Agonsin, M. 1998. Capital inflows and investment performance: Chile in the 1990s, in Ffrench-Davis, R. and Reisen, H. (eds), 1998
- Akram, Tanweer. 2002. "The Evolution of Globalization", Working Paper, Columbia University.
- Akyuz, Y. and Cornford, A. 1995. International capital movements: some proposals for reform, Michie, J. and Grieve Smith, J. (eds), *Managing the Global Economy*, Oxford, Oxford University Press
- Alchian, A. and H. Demsetz (1972), "Production, Information Costs, and Economic Organization", *American Economic Review*, vol 65(5), pp. 777-795
- Anthony, Martin(2000), *Discrete Mathematics of Neural Networks*, London: SIAM
- Aoki, Masahiko and H.K. Kim (eds) (1995), *Corporate Governance in Transitional Economies: Insider Control and the Role of Banks*, Washington D.C.: The World Bank
- Aoki, Masahiko, H.K. Kim and Masahiro Okuno-Fujiwara (1996), *The Role of Government in East Asian Economic Development: Comparative Institutional Analysis*, Oxford: Clarendon Press
- Arestis, P. and Sawyer, M. 1999. What role for the Tobin tax in world economic governance?, in Michie, J. and Grieve Smith, J. (eds), 1999
- Ariyoshi, A., Habermeier, K., Laurens, B., Otker-Robe, I., Canales-Kriljenko, J., and Kirilenko, A. 2000. *Country Experience with the Use and Liberalization of Capital Controls*, Washington, DC, IMF
- Azis, Iwan J (1999) *Do We Know the Real Causes of the Asian Crisis? Global Financial Turmoil and Reform: A United Nations Perspective*, The United Nations University Press, Tokyo.
- \_\_\_\_\_ (2000) *Modeling the Transition From Financial Crisis to Social Crisis*, Asian Economic Journal, Vol. 14, No.4.
- \_\_\_\_\_ (2001a) *Modeling Crisis Evolution and Counterfactual Policy Simulations: A Country Case Study*, ADB Institute Working Paper, No 23, Tokyo.
- \_\_\_\_\_ (2001b) *Cautions Surrounding Financial Sector Liberalization: A Modeling Approach*, "Asia Policy Forum on Sequencing Domestic and External Financial Liberalization," Asian Development Bank Institute, Tokyo, December 20-21.
- \_\_\_\_\_ (2002a). *What Would Have Happened in Indonesia if Different Economic Policies had been Implemented When the Crisis Started?" The Asian Economic Papers*, MIT Press.

\_\_\_\_\_ (2002b). *IMF Perspectives and Alternative Views On the Asian Crisis: An Application of Analytic Hierarchy Process and Game Theory Approach*, in Partha Gangopadhyay and Manas Chatterji (eds), Globalization and Economic Reform, Edward Elgar Publishing.

\_\_\_\_\_ (2002c) *Financial Sector Liberalization and the Asian Financial Crisis: The IFI Got it Wrong Twice*, Working Paper

\_\_\_\_\_ and Willem Thorbecke (2002). *The Effects of Exchange Rate and Interest Rate Shock on Bank Lending*, mimeo, Cornell University, January.

Baker, D., Pollin, R., and Schaberg, M. 1995. 'The Case for a Securities Transaction Tax', Mimeograph, Department of Economics, University of Massachusetts

Bekaert, Geert., Campbell R. Harvey, and Christian Lundblad (2001), *Does Financial Liberalization Spur Growth?*, NBER Working Paper, No. 8245, Cambridge, Massachusetts.

Berg, Janine, and Lance Taylor (2000), *External Liberalization, Economic Performance, and Social Policy*, Working Paper, No. 12, Center for Economic Policy Analysis (CEPA), New York.

Bhagwati, Jagdish(1998), "The Capital Myth", *Foreign Affairs*, May/June

Blustein, Paul (2001). The Chastening: Inside the Crisis that Rocked the Global Financial System and Humbled the IMF, Public Affairs, New York.

Calvo, Guillermo A.; and Enrique G. Mendoza (1999). "Regional Contagion and the Globalization of Securities Markets," *NBER Working Paper* No. W7153 (June).

Chang, H.-J. 1998. Korea: the misunderstood crisis, *World Development*, vol. 26, no. 8

\_\_\_\_\_, H.-J. Park and C. G. Yoo(1998), "Interpreting the Korean Crisis: Financial Liberalization, Industrial Policy and Corporate Governance", *Cambridge Journal of Economics*, Vol.22, No. 6, November.

Chang, Roberto, and Andres Velasco (1998). *The Asian Liquidity Crisis*, NBER Working Paper, No. W6796, November.

Chinn, Menzie D (1998). *Before the Fall: Were East Asian Currencies Overvalued?* NBER Working Paper No. W6491, April.

David, Paul, (1993 ) " Intellectual Property Institutions and the Panda's Thumb: Patents, Copyrights, and Trade Secrets in Economic Theory and Policy, in M.B. Wallerstein, M.E. Moguee, and R.A. Schoen, eds., *Global Dimensions of Intellectual Property Rights in Science and Technology*, Washington DC: National Academy Press.

- Demirgüç-Kunt, Asli and Ross Levine (1996), "Stock Market Development and Financial Intermediaries: Stylized Facts", *World Bank Economic Review*, vol. 10, no. 2, pp. 291-321
- Diamond, D. (1991), "Debt Maturity Structure and Liquidity Risk", *Quarterly Journal of Economics*, vol. 106, pp. 709-737
- Domac, Ilker and Giovanni Ferri (1998). *The Real Impact of Financial Shocks: Evidence from Korea*, unpublished manuscript, East Asia Pacific Region, the World Bank, Washington D.C.
- Eichengreen, Barry (1999) *Toward a New International Financial Architecture : A Practical Post-Asia Agenda*, Washington DC: Institute for International Economics.
- Fischer, Stanley(2001). *Asia and the IMF*, a speech delivered at the Institute for Policy Studies, Singapore, June 1.
- Goldfajn, Illan and Taimur Baig (1999). *Monetary Policy in the Aftermath of Currency Crises: The Case of Asia*, IMF Working Paper, WP/98/170, Washington D.C.
- Gould, David M and Steven B. Kamin (1999). *The Impact of Monetary Policy on Exchange Rates During Financial Crisis*, paper presented at the 1999 Pacific Basin Conference, San Francisco, September.
- Gould, Stephen Jay (1980), *The Panda's Thumb*, New York: W. W. Norton.
- Griffith-Jones, Stephany(1998) "The East Asian Financial Crisis: nits Causes, Consequences, Policy and Research Implications", IDS Discussion Paper Draft, Sussex.
- Johnston, Barry, R., Salim M. Darbar, and Claudia Echeverria (1997). *Sequencing Capital Account Liberalization - Lessons from the Experiences in Chile, Indonesia, Korea, and Thailand*, IMF Working Paper WP/97/157, Washington D.C.
- Kashyap, Anil K.; Jeremy C. Stein (2000), *What do a Million Observations on Banks Say About the Transmission of Monetary Policy*, American Economic Review, Vol 90, No. 3, June.
- Kaminsky, Graciela L. and Carmen M. Reinhart (1999), *The Twin Crises: The Causes of Banking and Balance-of-Payments Problems*, American Economic Review, 89/3, p. 473-500
- Khan, Haider A. (forthcoming a) *Global Markets and Financial Crisis: Asia's Mangled Miracle*, Macmillan and St. Martin's Press
- \_\_\_\_\_ ( forthcoming b) *Innovation and Growth in East Asia:The Future of Miracles*, Macmillan
- \_\_\_\_\_ (1999a) "Corporate Governance of Family Businesses in Asia: What's Right and what's Wrong?" ADBI paper no. 3, Tokyo,1999.
- \_\_\_\_\_ ( 1999b) " Corporate Governance in Asia: Which Road to Take?", paper presented at 2<sup>nd</sup> high level symposium in ADBI, Tokyo

- \_\_\_\_\_ (2002a), “ Can Banks Learn to Be Rational?”, Discussion Paper no. 2002-CF-151, Graduate School of Economics, University of Tokyo
- \_\_\_\_\_ (2002b), “ Corporate Governance: the Limits of the Principal –Agent Model”, Working Paper, GSIS, University of Denver.
- \_\_\_\_\_ (2002c) “ A Note on Path Dependence”, unpublished manuscript

Kim, Hyun E. (1999). *Was Credit Channel a Key Monetary Transmission Mechanism Following the Recent Financial Crisis in the Republic of Korea?*, Policy Research Working Paper No. 3003, the World Bank, Washington D.C.

Knight, Malcolm (1998). “Developing Countries and the Globalization of Financial Markets,” *IMF Working Paper* WP/98/105 (July).

Krueger, Anne O. (2000). *Conflicting Demands on the International Monetary Fund*, American Economic Review, Vol. 90, No 2. May.

Krugman, P. (1999). *Analytical Afterthoughts on the Asian Crisis*, mimeo, MIT.

Lane, Timothy., A. Gosh., J. Hamman., S. Phillips., M. Schulze-Ghattas., and Tsidi Tsikata (1999). *IMF-Supported Programs in Indonesia, Korea and Thailand: A Preliminary Assessment*, IMF, Washington DC.

Ohno, Kenichi, Kazuko Shirono, and Elif Sisli (1999). *Can High Interest Rates Stop Regional Currency Falls?*, Working Paper, Asian Development Bank Institute (ADBI), No 6, December.

Omori Takuma, "Suffolk Banking System against the Crisis of 1837-39 ---the Spontaneous Development of "Lender of Last Resort" by a Commercial Bank---", June 2002. University of Tokyo, Graduate School of Economics Discussion Paper No. 2002-CJ-79.

Polanyi, Karl (1944), *The Great Transformation*, New York, Rinehart & Co.

Rodrik, Dani (1997) *Has Globalization Gone too Far?* Washington DC: Institute for International Economics

\_\_\_\_\_ (1998a), “The Global Fix: A Plan to Save the World Economy”, *New Republic*, November.

\_\_\_\_\_ (1998b), “Symposium on Globalization in Perspective: An Introduction”, *Journal of Economic Perspectives*, Fall .

Sachs, Jeffrey D., A. Tornell., A. Velasco. (1996) *Financial Crises in Emerging Markets: The Lessons From 1995*, Brookings Papers on Economic Activity, No 1.

Sachs, Jeffrey D, and Wing Thye Woo (2000). *Understanding the Asian Financial Crisis*, in Woo, Wing Thye, Jeffrey D. Sachs, and Klaus Schwab (eds), The Asian Financial Crisis: Lessons for a Resilient Asia, The MIT Press.

Stiglitz, Joseph E. (1994). *The Role of the State in Financial Markets*, Proceedings of the World Bank Conference on Development Economics 1993. Washington D.C: World Bank.

Stiglitz, Joseph E. (1998). *Knowledge for Development: Economic Science, Economic Policy, and Economic Advice, he Role of the State in Financial Markets*, paper presented at the Annual World Bank Conference on Development Economics, Washington D.C., April 20-21.

Summers, Lawrence H (2000). *International Financial Crises: Causes, Prevention, and Cures*, American Economic Review, Vol 90, No.2.

Tobin, James., and Gustav Ranis (1998). *The IMF's Misplaced Priorities: Flawed Funds*, The New Republic, available online at the following address: <http://www.thenewrepublic.com/archive/0398/030998/tobin030998.html>

Yoshitomi, Masaru and Kenichi Ohno (1999), "Capital Account Crisis and Credit Contraction: Towards a Better Management of Systemic Currency Crisis", Paper presented at ADB Annual Meeting, 29 April 1999, Manila  
Zhuang, Juzhong(1999), *Corporate Governance in Asia: Some Conceptual Issues*, Manila: Asian Development Bank

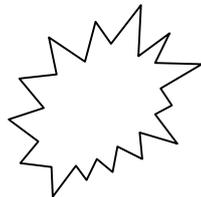
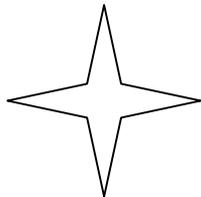
**FIGURE ONE: D-type path dependence**

**Event set at Time Period 0-----leads to-----event set in Period 1-----leads to event**

**set in Period 2----- event set n Period n**

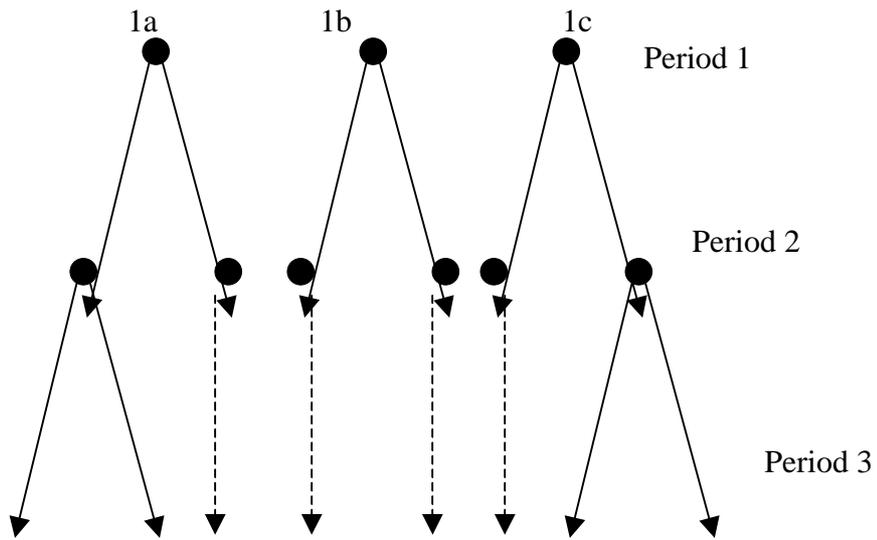
**FIGURE TWO: CD-type path dependence**

**Event set in period 0 generated stochastically**



**Event set in period n generated stochastically**

**FIGURE THREE: P-D type path dependency**



**Appendix: Evolutionary Growth Dynamics--- some useful evolutionary economics theorems**

*Theorem A1: Given the dynamical evolutionary system  $f^*(v,t)$  defined on the real Euclidean space and weak monotonicity as a selection mechanism, any asymptotically stable point is the Nash equilibrium of an appropriately defined bimatrix evolutionary game.*

*Proof(Nachbar 1990, modification in Khan 2002c)*

*Theorem A2: Every equilibrium of a gradient-monotonic evolutionary system can be sustained as a Nash equilibrium of an appropriately defined bimatrix evolutionary game.*

*Proof: (Khan 2002c)*