The Parallel Partial Progression (PPP) Approach to Institutional Transformation in Transition Economies: Optimize Economic Coherence Not Policy Sequence

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Abstract

Many economists have identified the secret to China's sustained high growth with satisfactory price stability to be the implementation of the correct sequence of reforms. The fact, however, that different economists have identified different sequences as the optimal sequence reveals that the "correct" sequence is far from obvious. In our opinion, "post hoc ergo propter hoc" type of rationalization is the reason for this embarrassingly large number of "correct" sequences. We reject the policy sequencing approach to economic reform, especially in institutional reform, because it does not characterize the Chinese reform process correctly; it does not recognize adequately the interaction between reforms that sustains the progress of each reform; it does not employ the structure of the economy and the dominant types of shocks that the economy is subject to as its central organizing principles; and optimal sequences exist only when the policymaker is constrained to introducing only one new policy measure at a time (so-called optimality disappears once simultaneous implementation of policies is allowed).

We propose the parallel partial progression (PPP) approach as the alternative conceptual framework for the gradualist approach to transition. PPP can be heuristically described as follows:

- The government should start the reform in as dimensions as possible from the very beginning.
- Because it is technically not possible to complete any particular institutional reform with a big jump in a short time, the government should only do part of each reform, e,g, do 20% of required reform for institution A, 20% for institution B, 15% for institution C, etc.
- The government must keep the reforms in different institutions compatible with each other such that they can enhance each other's progress rather than constrain it.

PPP is not the same as the step-by-step sequencing approach because a "partial reform" is not a "completed step". Simultaneous partial implementation is preferable to policy sequencing because it eliminates the costs of incoherence among policies. The incoherence between two reforms could be described either as a "reform bottleneck" or as "reform over-shooting." The two major bottlenecks that China is facing right now are financial reform and political reform.

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The Reform Strategies of Centrally-Planned Economies

In discussions on the different economic reform strategies adopted by the centrally-planned economies in Eastern Europe and the former Soviet Union (EEFSU), Mongolia, China and Indo-China to transform themselves into market economies, the term most commonly used to characterize China's reform strategy is "gradualism." To many economists, the secret to China's sustained high growth with satisfactory price stability (as opposed to the extended period of transformational recession and high inflation in EEFSU) was that China implemented the correct sequence of reforms. Gradual reform was the byproduct of this sequencing of reforms.

For example, Keith Griffin and Azizur Rahman Khan (1993) held that the brilliance of the Chinese reformers lay in liberalizing the economy before liberalizing the politics (perestroika first and glasnost later); while John McMillan and Barry Naughton (1992) opined that the brilliance of China lay instead in liberalizing the agricultural sector before liberalizing the industrial sector. For Ronald McKinnon (1991), the key to ensuring growth-with-stability was to restore macroeconomic balance and reform the fiscal and financial institutions before undertaking microeconomic liberalization like price deregulation. And then, according to Mancur Olson (1992, pp. ix), unless the economic reforms were preceded by institutional reforms (e.g. establishment of a legal system), the output response to the economic liberalization would be low, if not, negative -- in "the absence of institutions that reliably secure a broad range of contract and property rights, ...communism can be repudiated, and the suffocating government control removed, yet output can at the same time fall."

The fact that different economists have identified different sequences as the optimal sequence reveals that the "correct" sequence is far from obvious. It is also not obvious if there is a correct sequence that applies to every transition economy. For example, contrary to Mancur Olson's claim, the high Chinese growth was certainly not preceded by any great changes in Chinese legal institutions governing contract and property rights. In our opinion, "post hoc ergo propter hoc" type of rationalization is the reason for this vexingly large number of "correct" sequences. This embarrassing outcome is similar to the vastly different descriptions of an elephant by the six blind men of Hindustan.[1]

[1] John Godfrey Saxe, "The Blindmen and the Elephant" on website http://en.wikisource.org/wiki/The_Blindmen_and_the_Elephant

In this short note, we present an alternative conceptual framework for the gradualist approach to transition in order to give a more accurate picture of the economic transition process, particularly in the case of China. We propose a new concept -- parallel partial progression (PPP) – to replace "reform sequencing" in characterizing China's gradual reform, and to compare the welfare consequences of the step-by-step sequencing approach and the PPP approach.[2]

Describing the Transition Process in China Wrongly

"Sequencing" means is that reform policy B should not be taken until reform policy A is done. It can be mapped as follows:

Mapping (1) Sequencing: A → B → C → …….

This attention to "sequencing" comes, perhaps, from the increasing agreement among policy researchers that some sort of "pre-conditions" are necessary for a successful transition without excessive chaos (such as a sharp decline in output, or a deep financial crisis, or a currency collapse).

However, the notion of "sequencing" is a misunderstanding of what really happened in the transition economies, especially in China. While it could be said that that the policies implemented in EEFSU in 1992-1997 did not follow a sequencing plan, it is also true that China's gradualist transition did not result from a process of "sequencing reforms" either. For instance, many people say that China has not opened its financial market to the world but they are wrong. The right description is that China has only not "fully" opened its financial market, i.e. China has taken "partial steps" in opening its financial market to the world. To be specific, China has been steadily (gradually) increasing the number of foreign financial institutions permitted to operate in China. For the permitted foreign firms, they have been allowed to engage only in some parts of the financial business -- e.g. they could engage only in financing of transactions related to international trade, and they could operate only in some regions of China – and that the scope of their activities was permitted to increase over time.

A similar approach has also been taken in the opening of China's securities market. The financial authorities have steadily increased the presence of foreign securities companies and steadily increased the scale of foreign portfolio investment in China. In the opening of both the banking sector and the securities industry to foreign participants, China's approach was not a "sequencing" approach because China opened to the outside world before it had perfect domestic banks or/and a perfect financial regulatory agency in place. In short, China's reform process consists of partial steps in a number of dimensions

[2] For a running survey of the debate on economic reforms in the transition economies, especially in the competing explanations of China's high growth, see Woo (1994, 1999 and 2002). For analyses of the reform process in the industrial and financial sectors in China, see Fan (2002a and 2002b).

simultaneously. Over time, additional steps were taken in each dimension just as the number of dimensions under reform was being increased.

Some Considerations about Optimal Speed

From the collective transition experiences of the last three decades, we can group reform policies into three analytical clusters: macroeconomic stabilization reforms, microeconomic liberalization reforms, and systemic institutional reforms. Stabilization reforms focus on lowering the inflation rate and on relieving pressures on the balance of payments in a sustained manner. Liberalization reforms span the wide range of deregulation measures aimed at unleashing market forces to improve production and distribution efficiency. Institutional reforms are measures that seek to entrench an overarching framework that will enhance the working of the market mechanism, put the finances of the state on a sound footing that is consistent with economic efficiency and growth, and promote indigenous technological innovation.

Stabilization reforms consist (in the main) of fiscal consolidation, monetary discipline, and unification of the exchange rates at a level consistent with internal and external equilibrium. Technically speaking, stabilization reforms can be implemented very quickly, and can in fact be implemented overnight if desired. It appears that big-bang stabilization is the optimal speed for countries with near-hyperinflation, because such a decisive change in the regime of macroeconomic management not only conveys a more credible commitment to stopping the inflation, it also does not usually generate a large drop in output.

However, no equally general statement on optimal speed can be made about liberalization reforms. Some liberalization measures can be accomplished practically overnight. For example, instantaneous and comprehensive deregulation of prices could be achieved by mere announcement that the government would no longer control prices; and total trade deregulation could be attained by merely instructing the customs service to stop collecting trade taxes and enforcing the various forms of nontariff barriers. Some liberalization reforms, however, are technically impossible to complete within a year, least of all, overnight, e.g. the diversification of the ownership structure of existing enterprises.

There is also the issue that while a deregulation measure could be implemented immediately, its positive effects could be slow in coming. The legal barriers to entry into monopolized industries could be eliminated instantaneously but the natural evolution of many monopolized industries into competitive industries can be a time-consuming process, especially in the nontradeable sectors of the economy. Furthermore, as we shall show later, because the effects of many deregulation measures cannot be evaluated independent of the implementation of other deregulation measures, the issue of complementary reforms can be very important depending on the particular deregulation being undertaken.

The fact is that stabilization and liberalization reforms by themselves can establish only a fairly primitive market economy. As the savings-and-loan crisis, the Enron scandal and the more recent Madoff Ponzi scheme in the United States show, the full advantages of a market economy can be realized only if market-supporting infrastructural institutions like uniform accounting standards, law and order mechanisms, prudential supervision of the financial sector, and anti-trust legislations are in place. Institutional reforms constitute possibly the most difficult challenge faced by transition economies and developing economies. Reforms to embed institutions that provide the infrastructure for a market economy always take a long time to implement, and their fruits take even longer to appear.

Take the case of one central pillar of an advanced market economy, a transparent and predictable legal system that is capable of quick and fair adjudication of commercial disputes, enforcement of contractual obligations, and oversight of the restructuring of bankrupt enterprises. However, the establishment of this type of legal system requires substantial accumulation of very specialized human capital, and the process of accumulating this specialized human capital involves learning-by-doing, which is time-consuming by nature. There are other equally important pillars of a modern economy, such as an effective mass education system which also has a strong research component that can promote and incubate innovations in the sciences as well in the arts; and a sophisticated diversified financial sector that provides appropriate instruments to reduce risks on a broad front (e.g. unemployment, illness, natural disasters) and to enable timely investments of various kinds (e.g. education, housing, infrastructure). Big-bang institutional reforms in the sense of a transition economy successfully establishing within five years a modern French-style legal system, a dynamic UK-style financial system, and an effective US-style higher education system is clearly outside of the technically feasible set of outcomes. In short, there can be no such thing as a big bang in institutional reforms. However, it should also be clear that it is not easy to make a convincing gradualist argument to justify the delay of institutional reforms when their implementation and fruition take so long to realize.

The lesson here is that optimal speed depends on the type of reform being discussed. Fast comprehensive reforms could be optimal for macroeconomic stabilization and for some types of microeconomic deregulation, but they are clearly unachievable for institutional reforms. It should also be noted that the "sequencing approach" can be difficult to operationalize in practice because it requires pre-set "check-marks" to ascertain whether the previous step has been accomplished and the next step should thence commence. The process of reform and opening is so complicated and has so many aspects that a single "mark" of progress on one particular aspect may not mean much. However, if we wait until all aspects have reached the designated "mark" before starting the next step, then we would be likely to end up with an extremely slow process of reform.

We have so far limited our discussion on the optimal speed of reform to economic cost-benefit considerations. The actual determinants of the choice obviously extend well beyond economic efficiency to include political, social and cultural factors. In Eastern

Europe in the 1987-1992 period, there was grave uncertainty about the likelihood of Soviet intervention as in Hungary in 1956 and in Czechoslovakia in 1968 to reverse the indigenous political and economic developments. The embrace of fast convergence to Western European-style capitalism by some Eastern European countries in 1990-1992 could have been dictated by the desire of their governments to make the reforms too costly to reverse by the Soviet Union if its tanks were to roll in.

Just as the desire to create irreversible facts on the ground could motivate reformers toward expeditious implementation of many technically difficult problems, the desire to live with the existing facts on the ground could motivate a government to adopt a pace of reform that is slower than economically optimal. Political considerations could affect the choice of speed in opposite both ways. A new government that owed its position to being designated the legal successor by the previous government, with both governments being from the same political party, might well refrain from completely reversing too many of the policies of its predecessor. A broad about-face rejection of existing policies would be public admission of the total incompetence of the previous government, and this could cause the public to ask whether an incompetent government would had the rare competence to appoint a competent successor, and, more troubling, whether the incompetent government had the legitimacy to appoint its successor. In 1978, Deng Xiaoping was still a member of the Communist Party of China (CPC) as he was in 1949, and since he was a leading member of CPC for most of the period since 1949, there was just no way that Deng Xiaoping could totally dissociate himself from the disastrous economic policies of the previous thirty years.

Politics clearly matter in choosing the target, method and speed of reform. This paper will, however, continue to mainly confine itself to the economic perspective on reforms, reflecting, in part, the disciplinary bias of economists toward a narrow technical focus[3], and, in part, our desire to keep this paper to a reasonable length.

In Institutional Reforms, Gradual Reform is a Technical Necessity: Should the Government Optimize the Sequence, or Optimize the Coherence?

For the liberalization reforms and institutional reforms in which implementation is a lengthy process, we would like to argue that the analytical issue is sometimes that of optimizing the reform sequence but mainly that of optimizing the coherence of the reform package. To see this point, let us consider the issue of reforming state-owned enterprises (SOEs). Because SOEs were used to as employment agencies during the central planning period, market-oriented reforms of the SOEs (which could be privatization of the SOEs) could led to the shedding of surplus workers and the termination of company-based pensions to retired workers. Unless the state is able to provide relief payments to the displaced workers and pensioners in the respective forms of unemployment insurance and welfare, there would be a drastic fall in welfare in the medium-run. This negative impact

[3] John Maynard Keynes (1930) expressed this bias best when he wrote "If economists could manage to get themselves thought of as humble, competent people on a level with dentists, that would be splendid."

is the result of the SOE reform running ahead of the reform in social safety nets where nation-wide state-run programs have not yet taken over the social welfare functions of each SOE. A social cost is incurred because the SOE reform is out of phase with the social welfare reform.

The optimal solution is of course to privatize the SOEs and establish the state-funded social safety nets simultaneously, but these simultaneous reforms are unlikely to be in the feasibility set because each of them takes a different length of time to accomplish, and, more relevantly, it would be beyond the capability of the state to handle both large projects simultaneously. If simultaneous full reforms are not possible, one alternative is to sequence the reforms. However, just as sequencing SOE reform before social safety net reform generates a welfare loss, the opposite sequencing is also likely to generate a welfare lost. Specifically, the embezzlement by managers (which is an endemic feature in the SOE sector) will accelerate because the managers will now pocket the payments due to the surplus workers and pensioners, and unload these people on to the new state-funded welfare programs.

In the above two examples, sequencing will always result in a social cost because of the incoherence between the reforms in these two sectors. One way of avoiding this social cost is to undertake simultaneous ***partial*** reforms that will maintain coherence between the two reforms. The key is to keep the pace of SOE reform should be consistent with the pace of the reform of social safety nets.

The concept of sequencing is generally at odds with the fundamental nature of institutions and of institutional changes because different aspects of institutions are interrelated and interdependent, e.g. without the reform and development of institution B, institution A cannot be fully reformed, and vice versa. In many (if not, most) cases, institutions must be changed and built up together in an inter-related and inter-dependent manner. In short, if we use the term "precondition", then every reform is the precondition of every other reform.

For example, without reform of the political system, the economic system cannot be changed completely, and without reform of the economic system, a political change will not be sustained. Without the reform of domestic economic and political systems (not only just the reform of the financial regulatory system), the opening of the financial market to international capital flows could cause a financial crisis as shown by the Asia financial crisis.[4] The reality is that without opening up to capital flows at all, a country is unlikely to ever succeed in transforming its domestic financial institutions to deal adequately with external financial risks. It is most difficult in an insulated setting to

[4] Radelet and Woo (2000) have argued that one fundamental reason why Indonesia was hit more badly by the Asian financial crisis than Thailand and South Korea was that the Indonesian political system melted down when the crisis hit. This is because the Soeharto government depended entirely on good economic management for its political legitimacy, and lacked "political institutions and channels to resolve important socio-political issues about regime legitimacy, political succession, administrative transparency, regional concerns, ethnic disputes and religious tensions" (pp. 169).

establish a solid regulatory framework that could shelter the economy from the instability of the international financial market when capital flows are finally permitted. Without liberalizing part of the domestic financial market and allowing some foreign financial institutions come to "play" in the market, the so-called "prudential financial regulations" will never be really established. Without players playing, a country will never really create a meaningful regulatory framework which is supposed to govern the players! The usual sequencing strategy of "putting down regulations first, and then opening up to capital flows" is not achievable in practice because it neglects the fact that there is valuable learning-by-doing from a partially opened capital account that would enable the regulatory framework to be designed better.

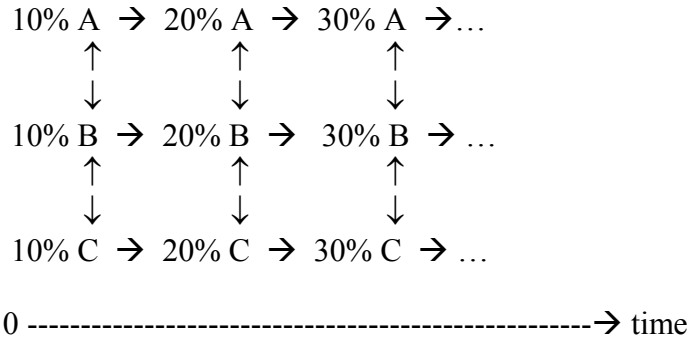
"Parallel Partial Progression" to Maximize Coherence in Institutional Reforms

The above set of arguments leads us to an alternative formulation of institutional reforms that not only captures the transition process in China more accurately but also reveals the welfare implications more clearly. We call this alternative formulation the "parallel partial progression" (PPP) approach to transition, and it can be heuristically described as follows:

1. The government should start the reform in as dimensions as possible from the very beginning.
2. Because it is technically not possible to complete any particular institutional reform with a big jump in a short time, the government should only do part of each reform, e,g, do 20% of required reform for institution A, 20% for institution B, 15% for institution C, etc.
3. The government must keep the reforms in different institutions compatible with each other such that they can enhance each other rather than to delay the progress of other reforms and cause excessive chaos.

This PPP approach can be "mapped" as follows:

Mapping 2: PPP



It should be stressed that PPP is not the same as the step-by-step sequencing approach because a "partial reform" is not a "completed step". For example, the privatization of small SOEs is not the first step but a "part" of the whole process of privatization of SOEs, where the privatization of some large SOEs is also taking place. While the privatization of small SOEs should proceed faster than the privatization of large SOEs because the former is more compatible with the growth of the private sector in the early stage of the transition, there is no reason why the privatization of large SOEs should not start until small ones are done.

The same point should also be made about financial sector reform. The development of private financial institutions should not be regarded as the "pre-condition" in the reform of state-owned financial institutions, or vice versa.

We can formalise the preceding discussion quite easily to see the welfare implications of PPP versus step-by-step sequencing. Let the economy have "n" number of dimensions that need to be reformed, and we can represent these "n" dimensions as:

$(x_1, x_2, x_3, ..., x_n)$

$x_i = 0$ means that dimension i is unreformed (still in centrally-plan mode)
$x_i = 1$ means that dimension i is reformed (in market-compatible mode)
$0 < x_i < 1$ means that dimension i is partly reformed; and
"economic nirvana" is achieved when all x_i's equal 1.

If we assume, as in Kornai (1992), that there is total coherence in a centrally-planned economy and in a modern market economy, *then the transition phase is marked by incoherence between different dimensions*. We note that this incoherence cost is a common observation in the social sciences. The political scientists call it social conflict, and the sociologists call it cognitive dissonance.

We postulate a welfare index, W, that is specified as:

$$W = \alpha\{\sum_{i=1}^{n} x_i\} - \beta\{\sum_{i=1}^{n}\sum_{j=1}^{n}(x_i - x_j)^2\}$$

where α = payoff coefficient
β = conflict coefficient

Welfare = (benefit from reform) - (cost from conflict within the incoherent system)
The welfare level of the centrally-planned economy is zero, and the welfare level of nirvana is $n\alpha$.

We will rule out the possibility of:

- perfect big bangs, where the state could cause all the x_i's to jump simultaneously from 0 to 1 (because otherwise perfect big bang will be the only solution); and
- perfect simultaneous incrementalism (i.e. perfect PPP) where all the x_i's can increase by the same fraction simultaneously (because otherwise central planning would not have the widespread coordination failures that we saw).

The values of α and β are determined by a number of country-specific reasons. For example, α has a high value when a country can be easily integrated into the international division of labor and hence reap quick large benefits from trade (e.g. a country with good access to sea transportation, a country located in rich neighborhood); and when massive foreign aid is available to the transition economy that undertakes reform. β has a low value when an overwhelming proportion of the citizens in the transition economy knows that market-oriented reforms would produce a much better future and are hence willing to put up with temporary hardship that is considerable.

Let us consider the case of n = 4.

In the case of a sequential reform, where full reform is undertaken in each dimension, we have:

when the economy is in complete centrally-planned mode,	$W = 0$
when the economy is reformed in 1 dimension, then	$W = \alpha - 6\beta$
when the economy is reformed in 2 dimensions, then	$W = 2\alpha - 8\beta$
when the economy is reformed in 3 dimensions, then	$W = 3\alpha - 6\beta$
when the economy is reformed in 4 dimensions, then	$W = 4\alpha$

Part A of Table 1 shows the welfare consequences of sequential reforms for different values of α and β. For the case of α=1 and β=0.5, the completion of reform on the first dimension would cause W to drop from 0 to *minus* 2. W remains at *minus* 2 upon the completion of reform on the second dimension. It is only upon the completion of reform on the third dimension would the economy return to the same welfare level as under central planning. Welfare is above that of central planning only upon completion of all reforms, W=4. So this means that the reformer might revert to central planning after his first reform step rather than taking the second reform step.

For a conflict coefficients (β) at or above 2, all incomplete reforms have welfare levels below zero when the payoff coefficient (α) is at or below 4. Roughly speaking, Part A of Table 1 suggests that for low values of α, sequential reforms may not even be initiated least of all sustained after the first step.

In the case of partially-synchronized incremental reforms, we will assume that the state has the technical capacity to increase only two of the x_i's by one-third each period. One of the optimal sequences of reforms in each period is:

at the beginning: (0, 0, 0, 0)

in period 1: (1/3, 1/3, 0, 0)
in period 2: (1/3, 1/3, 1/3, 1/3)
in period 3: (2/3, 2/3, 1/3, 1/3)
in period 4: (2/3, 2/3, 2/3, 2/3)
in period 5: (1, 1, 2/3, 2/3)
in period 6: (1, 1, 1, 1)

Regardless of which optimal sequencing of partially-synchronized incremental reforms is implemented, the welfare implications are as follows:

in period 0, $W = 0$
in period 1, $W = (2/3)\alpha - (8/9)\beta$
in period 2, $W = (4/3)\alpha$
in period 3, $W = 2\alpha - (8/9)\beta$
in period 4, $W = (8/3)\alpha$
in period 5, $W = (10/3)\alpha - (8/9)\beta$
in period 6, $W = 4\alpha$

Part B of Table 1 shows the welfare consequences of the PPP approach. For $\alpha > 4$ and $\beta < 3$, the reform process always generates a win-win outcome. For $\alpha = 1$ and $\beta > 0.5$, the first partial steps produce W with small negative values. Since the pains from reform are short and light, both the initiation of reforms and the continuation of reforms are more likely.

Overall, the welfare results in Table 1 show that for interdependent reforms which generate incoherence costs, it is more desirable to optimize coherence than to optimize the sequence.

Conclusion

So far, we have identified two inadequacies of "sequencing" as the guiding concept for economic reform: one, it does not characterize the Chinese reform process correctly; and, two, it does not recognize adequately the interaction between reforms that sustains the progress of each reform. There are, however, two even more fundamental flaws with the literature on the optimal sequencing of policies.

The first additional flaw is revealed by the fact that the most well-known conventional wisdom on balance of payments deregulation proposed by McKinnon (1982) and popularized by Edwards (1984) would not have prevented the Asian financial crisis. McKinnon and Edwards had recommended that a country should, first, liberalize the goods markets (especially the trade sector); then, liberalize the domestic financial system; and finally, liberalize capital account transactions. The logic behind this sequence is that if the protected importable industry is capital-intensive, then the opening of the capital account before the current account will cause foreign capital to flow into the importable industry. The expansion of the protected importable industry will produce the paradoxical result of "immiserizing growth" identified by Brecher and Diaz-Alejandro (1977).

The sad fact is that Asian financial crisis did not occur because of immiserizing growth, it occurred because the open capital account in a highly integrated global economy allowed foreign investor panic to crash the fragile banking systems of the Asian economies. In retrospect, the McKinnon-Edwards recipe should be amended to have the opening of the current account be immediately followed by the establishment of an adequate system of prudential regulation and supervision to monitor off-shore borrowing by domestic banks and to prevent the lack of arm-length lending by the banks.

If our amendment to McKinnon-Edwards is followed by many other amendments, this means that the present state of the sequencing literature is of little fundamental help to policy guidance. Our confident prediction is that many, many other amendments will appear over time because the sequencing literature has trivialized itself by not making the structure of the economy and the dominant types of shocks that the economy is subject to as its central organizing principles. For example, if the sequencing literature had stated that capital account shocks would become more frequent in the 1990s because of the globalization of financial markets, the Asian countries would certainly have ensured that their financial systems were more resilient to investor panics before liberalizing capital account transactions.

The second additional flaw of the sequencing approach (which is, perhaps, its most fundamental flaw) is that all of the so-called optimal sequences are optimal only if the policymaker is constrained to introducing only one new policy measure at a time. This optimality disappears once simultaneous implementation of policies is allowed. If simultaneous full implementation is not technically feasible, then simultaneous partial implementation would still be an improvement over sequencing because it eliminates the costs of incoherence among policies.

We had stressed in earlier examples the interdependence between reform of the SOEs and the reform of the social safety net system where a lack of progress on either reform could constrain the continued progress of the other. This incoherence between the two reforms could be described either as a "reform bottleneck" or as "reform over-shooting." The Chinese reform experience has certainly produced quite a few examples of reform bottlenecks because of the lack of clear vision about the objectives of the transition. The two major bottlenecks that China is facing right now are financial reform and political reform.

The biggest bottleneck in the economic area is the very slow development of private financial institutions, resulting in the lack of access by private firms to investment capital. The whole financial system remains dominated by the state sector, and market competition is basically absent. The non-state manufacturing industries which contribute over 70% of the output use less than 30% of financial resources. The whole process of the transition is being delayed by this harmful incompatibility. If China had started developing small non-state financial institutions at the time when it started to get its non-state industries to grow, the present economic situation would have been a much healthier one.

No country should wait until economic reform is done before starting political reform, and vice versa. If China had begun political reform earlier in small increment, even if only at very local levels, and allow the process to evolve, China's transition would be much smoother today and tomorrow. The efforts by the government since 2006 to emphasize the urgency of establishing a Harmonious Society by 2020 are a confirmation that this reform bottleneck could continue to raise social tensions until they reach levels that could make China's high growth unsustainable.[5]

Since the number of required institutional reforms for a transition economy greatly exceeds the capacity of the government to handle simultaneously in a thorough manner, we advocate the PPP approach of simultaneous partial reforms to minimize the amount of economic incoherence that is generated by the incomplete reforms. Plainly, much more research needs to be done before optimal sequencing and optimal coherence becomes more of a science that a journeyman economist can appeal to in the practice of his craft than an art that only an unusually astute (or lucky) economist can engage in, and even then, sometimes, with a low rate of success.

[5] A Harmonious Society was characterized by democratic practices, rule of law, justice, equality, and harmony with nature. The obvious implication from this announcement is that the present major social, economic and political trends within China would not lead to a harmonious society or, at least, not lead to a harmonious society fast enough. Minxin Pei (2005) reported that in 2004, there were 74,000 "mass incidents" (cases of social disorders) involving 3.7 million people compared to 10,000 such incidents involving 730,000 people in 1994. See Woo (2008) for a discussion on the most probable obstacles to China's continued high growth.

Table 1: Welfare consequences of different reform startegies for an economic problem with 4 dimensions

payoff coefficient	**1.0**	**1.5**	**2.0**	**2.5**	**3.0**	**3.5**	**4.0**	**4.5**	**5.0**	**5.5**
Part A: Sequential implementation of full reform										
conflict coefficient	**0.5**									
nothing	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1-dimension	-2.0	-1.5	-1.0	-0.5	0.0	0.5	1.0	1.5	2.0	2.5
2-dimensions	-2.0	-1.0	0.0	1.0	2.0	3.0	4.0	5.0	6.0	7.0
3-dimensions	0.0	1.5	3.0	4.5	6.0	7.5	9.0	10.5	12.0	13.5
nirvana	4.0	6.0	8.0	10.0	12.0	14.0	16.0	18.0	20.0	22.0
conflict coefficient	**2.0**									
nothing	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1-dimension	-11.0	-10.5	-10.0	-9.5	-9.0	-8.5	-8.0	-7.5	-7.0	-6.5
2-dimensions	-14.0	-13.0	-12.0	-11.0	-10.0	-9.0	-8.0	-7.0	-6.0	-5.0
3-dimensions	-9.0	-7.5	-6.0	-4.5	-3.0	-1.5	0.0	1.5	3.0	4.5
nirvana	4.0	6.0	8.0	10.0	12.0	14.0	16.0	18.0	20.0	22.0
conflict coefficient	**3.0**									
nothing	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1-dimension	-17.0	-16.5	-16.0	-15.5	-15.0	-14.5	-14.0	-13.5	-13.0	-12.5
2-dimensions	-22.0	-21.0	-20.0	-19.0	-18.0	-17.0	-16.0	-15.0	-14.0	-13.0
3-dimensions	-15.0	-13.5	-12.0	-10.5	-9.0	-7.5	-6.0	-4.5	-3.0	-1.5
nirvana	4.0	6.0	8.0	10.0	12.0	14.0	16.0	18.0	20.0	22.0
Part B: Partially-synchronised incremental reforms										
conflict coefficient	**0.5**									
nothing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
period 1	0.22	0.56	0.89	1.22	1.56	1.89	2.22	2.56	2.89	3.22
period 2	1.33	2.00	2.67	3.33	4.00	4.67	5.33	6.00	6.67	7.33
period 3	1.56	2.56	3.56	4.56	5.56	6.56	7.56	8.56	9.56	10.56
period 4	2.67	4.00	5.33	6.67	8.00	9.33	10.67	12.00	13.33	14.67
period 5	2.89	4.56	6.22	7.89	9.56	11.22	12.89	14.56	16.22	17.89
nirvana	4.00	6.00	8.00	10.00	12.00	14.00	16.00	18.00	20.00	22.00
conflict coefficient	**2.0**									
nothing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
period 1	-1.11	-0.78	-0.44	-0.11	0.22	0.56	0.89	1.22	1.56	1.89
period 2	1.33	2.00	2.67	3.33	4.00	4.67	5.33	6.00	6.67	7.33
period 3	0.22	1.22	2.22	3.22	4.22	5.22	6.22	7.22	8.22	9.22
period 4	2.67	4.00	5.33	6.67	8.00	9.33	10.67	12.00	13.33	14.67
period 5	1.56	3.22	4.89	6.56	8.22	9.89	11.56	13.22	14.89	16.56
nirvana	4.00	6.00	8.00	10.00	12.00	14.00	16.00	18.00	20.00	22.00
conflict coefficient	**3.0**									
nothing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
period 1	-2.00	-1.67	-1.33	-1.00	-0.67	-0.33	0.00	0.33	0.67	1.00
period 2	1.33	2.00	2.67	3.33	4.00	4.67	5.33	6.00	6.67	7.33
period 3	-0.67	0.33	1.33	2.33	3.33	4.33	5.33	6.33	7.33	8.33
period 4	2.67	4.00	5.33	6.67	8.00	9.33	10.67	12.00	13.33	14.67
period 5	0.67	2.33	4.00	5.67	7.33	9.00	10.67	12.33	14.00	15.67
nirvana	4.00	6.00	8.00	10.00	12.00	14.00	16.00	18.00	20.00	22.00

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