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Strategic Regional and National Economic Development  
with Fiscal Equalization

Lok Sang Ho*

Abstract

This paper shows that under increasing returns, devoting resources to develop some regions strategically ahead of other regions make sense, but this does not imply that the other regions have to wait until the benefits of economic growth to trickle down. Fiscal equalization can and should be more aggressive, with the central government incurring a deficit to help the poorer regions, and the national debt thus caused to be repaid by higher taxes on the fast growing regions. Optimal fiscal equalization should also involve central government’s investment in certain kinds of public infrastructure in the local economies of the backward regions based on social cost benefit analysis. China’s increasing regional income disparity is therefore unnecessary.

1. Introduction

A developing country often faces the dilemma of whether or not to focus its investment on some strategic areas that will produce the greatest returns. To do so would risk ignoring the needs of some of the least developed areas. But focusing on some areas first—particularly those industries with large forward and backward linkages, has been recognized to be a sound development strategy for a long time (Hirschman, 1958). Mr Deng Xiao-ping, widely recognized as the architect of modern China, had similarly recommended a strategy of “allowing a small portion of the population to turn rich ahead of others.” Such a strategy would make sense in a world with increasing returns to investment. Increasing returns

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* Lok Sang Ho is also Hon. Research Fellow of the Centre for Asian Pacific Studies at Lingnan University and of the HK Institute of Asian Pacific Studies of the Chinese University of Hong Kong. This paper is written for the Shanghai Forum 2008 hosted by Fudan University 24-27 May, 2008. The discussion on hyperbolic discounting under Section 4 is drawn from my book manuscript: Practical Principles of Public Policy, Chapter 2. I thank Robin Boadway, Gustav Ranis, and Guanghua Wan for comments on this paper.
means as you put into the system more and more input, the output gets disproportionately bigger. Graphically, this means that instead of a development possibility curve that is concave to the origin, as in Figure 1, we would have, instead, one that exhibits convexity to the origin. If increasing returns and decreasing returns co-exist, then we may have convexity and concavity at the same time, as in Figure 2.

We assume a nation with two regions A and B. We assume that there is a pool of “discretionary capital” that can be allocated between region A and B and that all capital invested will be efficiently utilized. Two axes then depict the present values of the income streams accruing to A and to B associated with an investment strategy as represented by any point on the development possibility curve. If there is no discretionary capital allocated to A at all, development value will be “Min D for A”. If all the discretionary capital is allocated to A, development will be “Max D for A.” Similar interpretation goes for “Min D for B” and for “Max D for B.” In Figure 1, with decreasing returns, the optimal strategy will be where the “Development Possibility Curve” touches the highest 45 degree line.

In Figure 2 we assume there is increasing returns to investment over some ranges. Increasing returns means that as more of the discretionary capital is allocated to B instead of to A, at some point greater returns accrue to A than is the sacrifice suffered by B. With increasing returns over some ranges of the development possibility frontier, there are multiple local optimums. However, between the local optimums K and Q, obviously the present value associated with Q is bigger. So from the nation’s point of view, B should be favored. At Q, the nation can maximize the present value of development focusing more on developing B.
Figure 1: Development Possibilities under Decreasing Returns

Decreasing Returns: Two Regions
Development Possibilities Frontier with Present Values of Incomes Accruing to Each Region (decreasing returns assumed)

Min D for A
Min D for B
PV of Regional Development in A
PV of Regional Development in B

Figure 2: Case of Local Increasing Returns (Development PV on both axes)

45° Line for Inter-regional Transfers
Development Possibilities Frontier Allowing Increasing Returns

Max D for A
Min D for A
Min D for B
Max D for B
However, this does not mean that A has to suffer. Indeed, given the higher present value of development it is possible to improve the welfare of both Region A and Region B over what is possible if development strategy K is adopted.

This will imply NOT ONLY some form of transfer payments to Region A, BUT ALSO borrowing. But to the extent that the investment to B may still take time to bear fruit, total disposable income in B today may not be high enough to support the transfer. If in fact the investment is going to be so profitable, however, so that incomes are going to rise in B due to that investment, it should be possible to borrow to sustain a better living standard in A as well as in B. There would be no need to wait till the “trickling down process” benefit the backward region. The constraint of course is that what is borrowed will need to be repaid and that the investment has to be able to support the repayment of such borrowing. What transpires from this analysis is that the central government may run a deficit to help A, and repay the debt thus raised by taxing B harder in the future.

2. Regional Disparity and Equalization in China

Now let us go back to the case of China. Region B is like China’s coastal cities. Region B is like China’s inland provinces. In the 1980s China had opened up in the first instance 14 cities and set up 4 Special Economic Zones, giving them special status in terms of policy privileges. This encouraged the inflow of investment into these regions, both from outside China and from inside. At the same time, however, much of the inland provinces did not enjoy the benefit of inflow of capital. However, many of them did receive transfer payments from the central government.

According to Wang and Fan (2003), the central government had adopted a fiscal transfer policy to redress the regional disparity between the eastern and the western regions of the country from the 1950s. A large amount of investment poured into the western provinces, but efficiency was low. Then in the beginning of the economic reform period, the central government tried to motivate provincial governments to improve efficiency and reduced the tax intake from them. As a result, resources available for
transfers dwindled, while the eastern region spearheaded to new heights every year. As a result disparity widened rapidly.

In 1980 the per capita GDP for the central and west regions were 65% and 53% of that of the eastern region. By 2000 these percentages had dropped to 53% and 41%. As shown in Table 1, although fiscal equalization did raise per capita disposable incomes, over the years the per capita disparity in disposable income has not improved, suggesting that not enough had been done by way of equalization payments. As long as the greater returns from investment are real, the nation’s total wealth increases instantly in terms of present value. This should allow inter-regional transfers to benefit the unfavored region as much as the favored region. Initially some borrowing may be necessary, but the borrowing can be serviced as the returns from the investment kick in.

Table 1. Equalization Did not Improve Disparity over the Years

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<tr>
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<tbody>
<tr>
<td><strong>Eastern Region</strong></td>
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<tr>
<td>GDP per capita</td>
<td>100</td>
<td>100</td>
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<tr>
<td>(Benchmark normalized to 100)</td>
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<tr>
<td><strong>Eastern Region</strong></td>
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<tr>
<td>Disposable Income Per capita</td>
<td>100</td>
<td>100</td>
<td>1</td>
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<tr>
<td>(Benchmark normalized to 100)</td>
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<tr>
<td><strong>Central Region</strong></td>
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<tr>
<td>GDP/capita</td>
<td>65</td>
<td>53</td>
<td>81.5</td>
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<tr>
<td><strong>Central Region</strong></td>
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<tr>
<td>Disposable Income/capita</td>
<td>78</td>
<td>62</td>
<td>79.4</td>
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<td><strong>Western Region</strong></td>
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<tr>
<td>GDP/capita</td>
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<td>41</td>
<td>77.3</td>
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<tr>
<td><strong>Western Region</strong></td>
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<tr>
<td>Disposable Income/capita</td>
<td>70</td>
<td>54</td>
<td>77.1</td>
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3. Migration and the “Migrant Worker Model of Development”

The statistics in the previous section notwithstanding, the key income disparity on the mainland is that between rural and urban residents. The richest “regions” remain, of course, to be the big cities that lie at or near the coast in the east of China. In the discussion below, we will focus on transfers to the rural population, with the understanding that an effective system of transfers to the rural population will benefit the “western region.”

Fiscal equalization is of course not the only means of “equalization.” Another important means of equalization occurs when workers migrate to the eastern region and derive an income there. The job opportunities have been increased by the greater investment. Although GDP per capita is higher in the cities, part of the incomes earned actually accrues to migrant workers who can transfer their incomes back to their original locations. Thus, “disposable income per capita” in the western region and in rural areas in general is augmented not only by the public channel through fiscal transfers, but also by the private channel through personal income transfers. This pattern has been borne out by data supplied in the Wang and Fan (2003) article.

It is estimated that some 200 million migrants are working in cities, but they do not have household registration (hukou) in the cities and they are discriminated against in employment, education, healthcare, and housing.

Concomitant to the migration of workers to the cities in the eastern region of course is the loss of workers in the rural areas, especially those in the western region. However, this is not a concern given the existence of surplus labor in the western region. What is more important from the point of view of developing the western region is for these poorer areas to have more disposable incomes. Thus fiscal transfers and personal income transfers potentially improve the quality of life in the western region.

In principle, wages in the cities in the eastern region has to be attractive before workers in the rural areas would migrate. The attractiveness of this model of development is that wages can be attractive to workers from the west even though the meager wages cannot support a family living where the work is and are therefore internationally competitive. This is
because the cost of living is much lower in the underdeveloped western region, so that what may appear to be a low wage to city dwellers living along the coast may still be very attractive to migrant workers. Some figures will illustrate: according to the China Daily (May 16 2006) the minimum wage in Beijing in 2004 was 545 yuan per month (US$67.2), just 20% of the city’s average income, while the minimum wage in Shanghai stood at 635 yuan (US$78.2), about 25% of the city’s average income. Researcher Liu Jun-sheng of the Income Research Institute of Labor and Social Security, found that the minimum wage in 2004 in 25 provinces, autonomous regions, and municipalities was less than local average monthly living requirements. Clearly the jobs would only appeal to migrant workers who came from locations where wages were much lower.

Without the migrant workers’ contribution China could not have been so competitive. The availability of the migrant labor had allowed the eastern region to develop much faster than otherwise, further contributing to the increasing returns of infrastructure investment and investment in plant and equipment. Fiscal transfers from the richer regions to the poor regions where the migrant workers came from are therefore well justified.

4. Fiscal Transfers in the Face of the Household Registration System

Given China’s household registration (hukou) system, part of the fiscal transfer may be in the form of a wage subsidy to those whose household registration is in a rural, backward region, regardless of where the worker works. Thus a migrant worker working in a city would get the wage subsidy, just as a worker who stays behind in his village or his hometown to work. To the extent that his registration is not in the city, we know he is a migrant worker, and the subsidy will eventually find its way to help sustain a higher consumption level in the rural areas.

Traditionally, the hukou system has effectively discriminated the migrant worker because he normally will not have the social security and other benefits that the city resident enjoys. Students without the requisite hukou, for example, need higher marks at the university entrance examination in order to get into university. While some changes are taking place

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1 For example, average incomes in Beijing and Shanghai were rising at about 15% per year from 1994 to 2004, when the China economy grew at 9.5% annual rate.
recently: for example, in 2002, Shanghai launched an insurance scheme for its migrant workers, and employers are required to contribute to pensions for the workers as well as cover work-related injuries, and health insurance, these do not involve public subsidies and in particular do not involve any fiscal transfers. In view of the above analysis, wage subsidies from the central government financed by taxes or future taxes on the more prosperous cities for workers with rural hukou would make sense.

In recent years, there is increasing talk about eliminating the hukou system in China (China Daily, HK edition, January 23, 2008). But there is lingering worry over the risks associated with rapid population growth in cities. For example, commenting over a proposal by Tsinghua University professor Qin Hui for Shenzhen to set aside land to build low-cost housing for low income people including migrant workers, Ge Hong, Vice-chairman of Shenzhen Academy of Social Sciences, expressed reservation. (April 16, 2008 China Daily) One possibility is that people from the rural areas are allowed to change their hukou to the cities if they so desire, but then they will have to give up the wage subsidy that is designated for the rural residents.

5. Public Investment and Optimal Fiscal Equalization

China’s infrastructure investment relies both on government and private inputs. For private investment in infrastructure, expected profitability is crucial, and investors essentially derive returns from tolls and charges. They are invariably attracted to the coastal areas where incomes are high and economic growth is expected to be fastest. However, public investment does not have to be commercially viable. As long as social benefits justify the social costs, a project would be worthwhile. As long as no better project comes along, the project under consideration should go ahead.

Optimal fiscal equalization requires not only an optimal amount of transfer from the strategically favored region to the backward region but also an optimal split between cash transfer and public investment. The former implies moving along the 45 degree line from point Q up in Region A’s favor until the marginal social benefit is equal to the marginal social cost, where marginal social benefit = the benefit accruing to the people of Region A and the marginal social cost = the loss suffered by the people of
Region B as the transfer takes place. The latter implies equalizing the marginal benefit of today’s consumption and the marginal present value benefit due to higher future consumption made possible by the public investment.

One might think that cash transfer to the regional government allows the greatest flexibility and so may promote efficiency better than public investment. If the regional governments can be counted upon to maximize the long term interest of the people of the region this conclusion may well hold. However, the regional governments may have their own agenda, and there may also be a pro-present-consumption bias due to what is sometimes called hyperbolic discounting. Under hyperbolic discounting, when policy makers need to choose between two competing projects, one of which brings in a more distant benefit stream than another one, they tend to bias their choices toward the one that will bring more immediate benefits. Postponing the benefits that are so close at hand is perceived to involve a bigger sacrifice than postponing the benefits that will accrue some years down the road. Hyperbolic discounting involves applying different discount rates to different projects. If so when the central government makes a transfer, it may require that a certain budget be assigned for specific infrastructure investment that is based on application of more objective cost benefit analysis, which would appear to be more likely with the central government than with the local government.

To explain this we can refer to a growing literature on “hyperbolic discounting.” In traditional cost benefit analysis, future benefit streams and cost streams have to be discounted to the present and then compared to assess if a project is worthwhile. Hyperbolic discounting says that the annual rate of discount that applies to near-term benefits will rise significantly as implementation gets more and more imminent. Postponing a project that can bring immediate benefit by one year then is perceived to entail a huge sacrifice—far larger than that associated with postponing a project scheduled nine years away by one additional year, or postponing a project that brings distant benefits. This can be explained with the Figure 3.1 and 3.2.

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2 Dasgupta and Maskin (2004) explained hyperbolic discounting as the tendency for decision makers to increase the rate of discount as the time before payoffs are realized grows shorter and shorter.
Figure 3.1: Total Perceived Benefits of Two Projects in Today’s Dollars

Present Values

Total perceived benefit in today’s dollars for a “distant benefit project”

Years postponed

Figure 3.2: Perceived MB and MC of Postponing One Project to Expedite Another

$ of MB or MC

Perceived MC of postponing a near term benefit project

Perceived MB in terms of bringing forward a distant benefit project

Years postponed
Figure 3.1 shows the perception about net benefits of two projects, assuming the projects are implemented at different dates. It is assumed that the project promising more distant benefits has higher net benefit than the one promising nearer-term benefits. If the projects are postponed, perceived net benefits decline for both projects, but for the project promising immediate benefits, the value is discounted at a much higher rate because of hyperbolic discounting.

Figure 3.2 shows the perceived marginal cost of postponing the near term benefit project. It is assumed that the benefit of postponing the near term benefit project is to bring forward the distant benefit project. Because of hyperbolic discounting, which may be considered a weakness inherent in human nature, the marginal cost of postponing the near-term benefit project is much higher than that of postponing the distant benefit project. So, even though the net benefit of the more distant project is higher, it is postponed in favor of the one that brings immediate benefits.

A glaring example of this phenomenon is the tragedy in New Orleans in the summer of 2005. Thus, Malanga of The City Journal wrote:³

> today’s federal government isn’t smaller but ever-growing. Its priorities, however, both parties have woefully distorted. Increasingly, Washington neglects key projects (like shoring up the New Orleans levees) in order to shower money on often-superfluous projects that local congressmen favor—ranging from wildlife refuges to tennis courts in rich communities to arts and folk festivals to a long list of other inessential initiatives. This pork-barrel waste, not smaller government, is what victimized New Orleans.

Actually, beyond pure hyperbolic discounting, which is largely a perception problem and which has to do with the flaws of human nature, there is an institutional bias that will produce what might appear to be a result of hyperbolic discounting. Because the terms of office for elected

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politicians are limited, they naturally would like to give their constituents, particularly those with influence, immediate benefits while they can. Future tax burdens or other undesirable consequences that have yet to happen are too distant for them to worry about. Malanga further observed:

*increasingly Congress uses the growing federal budget to serve the narrow interests of its members, circumventing the traditional budget process and skirting procedures for competitive bidding to insert favored projects directly into appropriations legislation. The process, euphemistically called earmarking, “has become so routine and so pervasive . . . that what was once a boon for the most powerful and favored has become an expected way for local governments and other institutions to get aid from Washington,” wrote the Congressional Quarterly last year.*

Another major policy debacle that follows the hyperbolic discounting logic relates to the massive failures of Savings and Loans during the early 1980s. Many observers believe that the under-funding of bank regulators was one key reason behind the pervasive fraudulent practices in the industry. Even though S&Ls were suffering from the upwardly spiraling interest rates under Paul Volcker’s chairmanship of the Fed, and from an asset/liability mismatch, the problems were greatly aggravated by fraud (see Chapter 7). The “ultimate cost of the savings and loan crisis” was estimated at some $160 billion (FDIC, 1997, p.169) At the time, Savings and Loans were regulated by the Federal Home Loan Bank Board (FHLBB), and its examination force was understaffed, inadequately trained, and suffering from limited resources. A government-wide hiring freeze in 1980 to 81 had compounded these problems. Such belt-tightening was in part a result of the Reagan tax cuts, but taxpayers over the long term lost far more than what they saved momentarily. Considering the major social losses that have resulted from the behavior of short-sighted voters and that of politically-savvy politicians, democracy does not come cheap.

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5 The Reagan tax cuts were implemented through the Economic Recovery Tax Act (ERTA) of 1981 that embodied much of the Kemp-Roth bill providing a 25 percent across-the-board cut in personal marginal tax rates.
6. Conclusions

This paper argues that to optimize national economic development it makes sense to focus investment where returns are greatest, and given the prevalence of increasing returns, this tends to polarize incomes and exacerbate regional disparities. However, we argue that it is actually not necessarily to wait until the “trickling down process” gradually benefit the backward regions. Instead, fiscal equalization, both through direct fiscal transfers and supplemented by borrowing, as well as some infrastructure development aimed mainly at boosting effective consumption of both private and social goods, can benefit the backward regions immediately. This argument is additional to the traditional argument for fiscal equalization that is mainly based on regional differences in the gap between fiscal capacity and public expenditures. (Boadway and Shah, 2006, Chapter 2) Fiscal transfers can potentially reduce both the income gap between the eastern and the western regions and that between rural and urban populations.6

We have also demonstrated that devoting more resources to develop B first does not mean that A has to suffer in the near term. If the present value of development is truly maximized for the nation, then the nation can afford to borrow more so as to boost Region A’s near term consumption, even as more of the discretionary capital is allocated to develop B first. If the provincial government is more prone to “hyperbolic discounting”, then it may also be desirable for part of the fiscal transfer to be designated on certain kinds of infrastructure investment that may have higher present values but have a benefit stream that is less “front loaded” as others.

The fiscal transfers would generally imply a short-term fiscal deficit in the central government, which will be repaid from higher taxes on the richer provinces. Thus optimal fiscal equalization is not confined to contemporaneous transfer of incomes, but also may imply higher future tax intake from the regions enjoying increasing returns and rapid growth, and it may be in the form of a wage subsidy for those with hukou in the

6 Urban townships enjoyed a 10.4% in per capita disposable income to reach 11759 yuan, while rural residents had only a 7.4% increase to reach 3587 yuan in 2006. (Mingpao, January 26, 2007) The percentage increases reported have netted out inflation effects. Yuan figures are nominal.
backward areas, as well as in the form of infrastructure investment in such items as roads, water supply, electricity, schools, and hospitals. This is how the backward regions can benefit immediately without having to wait for the trickling down effects to arrive. According to Chen Xiwen, director of the office of the central leading group on rural work, the Central Government will increase its budget for rural investment by more than 25% to 520 billion yuan in 2008 (China Daily HK edition, Feb. 22, 2008). This is a step in the right direction, and is well justified in view of the arguments in this paper.
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