ECON4940 Understanding and Interpreting Chinese Economic Reform, Spring 2006

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Lecture note 1: How to approach the Chinese economic development? Price scissors in China.

1.1 Introduction

In the 1960s and early 1970s there was considerable interest in the Maoist approach to economic development, especially from economists and other people leaning towards socialist viewpoints. The assessment was generally positive, whether it was compared with free market economies or with the Soviet Union. China under Mao was viewed as a much more egalitarian society without the great disparity of wealth that often characterized developing countries. To many of these observers egalitarianism was of great value in itself, independent of the development achievements in material terms, which were anyway difficult to assess.

The egalitarian character of the society, as it was perceived, also led to an assessment that this reflected a more democratic and less alienating approach, a view that was reinforced by the reported efforts of the Chinese to establish new social institutions, such as the people's communes, that would radically transform old ways of thinking and old patterns of the division of labour. Mao's politics was believed to be able to create a 'new person' from this development process, which was designed for sharing equally the benefits from China's new development. The onset of the Cultural Revolution was considered, often on the basis of very little real information, as a further step in the development of a new improved kind of society.

This optimistic, and in retrospect, highly utopian interpretation of the Maoist led development ended with the death of Mao Zedong and the fall of the "Gang of Four" in 1976. Later developments gave access to much more data about the early decades of the post-1949 development and led to a reassessment of the development and the policies under Mao. On the whole the post-Mao assessments have been negative. The Maoist policies based upon central planning and autarchic self-reliance were held responsible for the low living-standards of the Chinese people.

The growth rate of the Maoist period was not particularly low, about 6 %, but it was dismissed later as largely investment driven with low rates of TFP growth and thus not sustainable. The Chinese economic reform is considered to have started in December 1978 at the Third Plenary Session of the 11th CCCPC (Wu, 2005, Ch. 2.2). China has as everybody knows had a uniquely high economic growth since around that time. In 1978 China would to a foreign observer have looked dramatically different from today. There were practically no cars, perhaps some old American cars could be seen. China is now no. 2 in car production in the world after USA. There were few good restaurants and the Chinese were not exactly very excitingly dressed. Basic consumer goods were to large extent rationed. The changes in living standard have been enormous for many people, but the benefits from the decades of high growth have also been very unevenly distributed.

1.2 Why a course on Chinese economic reform, and what kind of course is it?

It may seem obvious that from 1978 as the year of the beginning of the reform we should in the course look forward in time, but: <u>to understand the present it is necessary to study the past</u>. To understand the reform it is necessary to know the pre-reform development and thinking.

Actually, there is a double or even triple argument here. Some observers say that "the success of the Dengist policies has been dependent on the foundation laid down by Maoist policies." Be that as it may. Another reason for rooting the reform in the pre-reform period is that we may reasonably assume that a strongly motivating factor for the reform strategy was the experiences of the cataclysms of the Great leap Forward (GLP) and the Cultural Revolution. Thirdly, all the leaders of the reform era were trained or perhaps indoctrinated with the thinking of the Maoist period, which was a special variety of Marxism (not necessary one that Karl Marx would have approved of). Even among today's leadership I think we still find this thinking well represented but now mixed with many other influences.

Thus this course can be said to be about the economic reforms introduced under the leadership of Deng Xiaoping, but a more adequate way of putting it is that it is about the <u>transformation from a planned to a market economy in China</u>. Defined in this way it is a large topic and we cannot really hope to do much more than scratch in the surface. This is a development which has not come to the end. But this is in any case an economics course, it is not a history or an economic history course. And it is about theory; theory that may help us understand various aspects of the Chinese economic reforms, not least with regard to choices of policies or strategies.

What will you learn? What is necessary background?

Politics and economics. Can we understand the economic development without fully taking the politics of the period into account. Yes and No!

What kind of phenomenon is the Chinese reform we are talking about. We can actually relate it to a very wide class of phenomena across time and continents, namely that of countries being transformed from an overwhelmingly agricultural society to become an industrialized economy, from England in the 18th century onwards. All such transformation share some common features but also differ widely n institutional and other respects. A common question to raise with regard to such transformation is how the means for investment for the taking-off process out of a more or less stationary state is coming from. FIG-1

Thus in this regard China has several predecessors as a developing country coming from behind to surpass many other countries, as Japan, Korea and other countries have done by rapid growth over a period of time. But China differs by the dimension of its progress, perhaps one could say that China differs also by the length of the expansionary period, although that is still early to say. China differs also in another way, it was once the richest country in the world.

China as a <u>transition country</u>, places China in class with the Soviet Union and other countries which have made or are in the process of making the transition from central planning to some kind of market economy. The comparison between China and the Soviet Union is particularly pertinent for several reasons. The Soviet Union was the model for Chinese development after 1949. The Marxist or Soviet conception of a planned economy became the Chinese conception with some differences.

The transition period we talk about can be backtracked to around 1980, the first signs of change in Europe. If we look at the performance of the transition period differences are very

striking. In the period 1980-93 China's GDP grew by 9.6% a year, while the Soviet GDP was stagnant, in fact a slight decline. A major difference between those two countries considered as transition countries is of course that in the Soviet Union it was a regime change while in China it was not. Comparison with the transition and other transition of the other communist countries is a very relevant comparison when discussing China.

But what do we mean by "economic reform", what kind of changes? This is loose question, and en equally loose answer may go like this: the economic reform comprises 1) a development strategy, 2) macroeconomic policies to support it, 3) system changes to maintain it.

1.3 Price scissors in China

Sah, R.K. and J.E. Stiglitz (1984), The Economics of Price Scissors, *AER* **74**, 125-138.
Sah, R.K. and J.E. Stiglitz (1987), Price Scissors and the Structure of the Economy, *QJE* **102**, 109-134.
Sah, R.K. and J.E. Stiglitz (1992), *Peasants versus City-Dwellers*, Clarendon Press, Oxford.

The term "price scissors" as used here refer to the terms-of-trade of agriculture relative to industry in a country facing the transformation from an overwhelmingly agricultural economy to an industrialized economy. This term was coined by Evgenii Preobrazhensky who wrote about this issue in the Soviet Union in the mid-1920s, perhaps did the term originate in a graphical illustration he used. Preobrazhensky believed, like many other Soviet economists in the 1920s, that the future of the Soviet socialist regime depended upon rapid industrialization. Preobrazhensky further held the opinion, not shared by all other Soviet economists, that the way to achieve this was by a massive extraction of surplus from the peasantry to be invested in the state industrial sector. It was part of Preobrazhensky's argument that violence and confiscation ought. His idea was to use the state's monopolistic marketing position to enforce a "no equivalent exchange" or "price scissors" between agricultural and industrial goods.

MORE ON THE SOVIET DEBATE, BUKKHARIN, PREOBRAZHENSKY, STALIN

THE SOVIET MODEL AS AN INFLUENCE ON CHINA AFTER 1949

FIG-2

The analytics of price scissors (simplified)

We study this problem in the framework of a dual economy, consisting of the <u>rural sector</u> and the <u>urban sector</u>. The rural sector is identifies with agriculture and the urban sector with industry. Our aim is to develop an expression for the <u>investible surplus</u>, which is what the state can invest to promote the development of industry.

We use superscripts ^{R} and ^{U} to distinguish rural and urban variables (and thus deviating slightly from the notation of Sah & Stiglitz (1984), in the following abbreviated to SS (1984):

Population is

(1) $N=N^R+N^U$

Agricultural production is given by X, the production function in agriculture is in per capita terms

(2) $X=X(a,L^R),$

where $a=A/N^R$ is total agricultural land of the rural sector *(A)* per capita, and L^R denotes hours worked by each worker.

Industrial production is given by *Y*, and the production function is in per capita terms

(3) $Y=(k,L^U)$

where $k=K/N^U$ is capital stock *(K)* per urban worker, and L^U is hours of work by urban workers (fixed by government).

The consumption of the rural good is x^R and x^U, while the consumption of the urban good is y^R and y^U.

We can introduce the agricultural surplus per worker as

(4) $Q=X-x^R$

A key variable in this argument is the relative price of the rural good in terms of the urban good, it is denoted by *p*.

The budget constraint of rural workers is

(5) $pQ=y^R$,

while the budget constraint of urban workers when *w* is the wage per hour, is

(6) $px^U+y^U=wL^U$

Here we may follow SS (1984) in introducing utility functions for rural and urban workers, respectively, from which we may derive by maximization under the budget constraint, demand functions for the two goods. For the rural sector this would imply determination of the agricultural surplus as a function of *p* and N^R, while the urban demand would depend upon *p* and *w*. SS (1984) also derives the analytically useful indirect utility functions.

We note that the balance between the supply and demand of the rural good implies in the absence of foreign trade that

(7) $N^R Q(p,N^R) = N^U x^U(p,w)$

If we allow for foreign trade it would be

(7') $N^R Q(p,N^R) = N^U x^U(p,w) + T$

where *T* is net agricultural exports.

The relative price *p* introduced above is the domestic terms of trade of agriculture. It differs from the international terms of trade, which we denote *P*. There is thus trade but no trade at the margin.

Preobrazhensky concern was how the <u>investible surplus</u>, *I* ($= dK/dt$), can be influenced by the state's control over *p*. We must here say something about the determination of the wage level, *w*. For some economies facing such a development transformation as we are considering here, we may think of the wage level as being determined in the market or in a bargaining process between employers and trade unions, naturally dependent upon *p*, say as *w(w(p))*. In the Soviet situation of Preobrazhensky as well as in the Chinese situation it seems more adequate to consider the wage level simply as controlled by the state.

The investible surplus can now be written in alternative but equivalent terms. We can write it as the net of industrial production over the consumption of urban goods with an additional term representing the foreign trade as

(8) $I = N^U Y - N^U y^U - N^R y^R + (P-p) T$

Another way is as industrial profits and rural and urban tax revenues, i.e.

(8') $I = N^U (Y - w L^U) + (P - p) N^R Q(p, N^R) + (p - P) N^U x^U(p,w)$

In fact, both expressions are the same, and it can be consolidated as

(8'') $I = N^U (Y - w L^U) + (P - p)T$

What can we make of this? First, we may note like SS (1984) what Preobrazhensky asserted. Preobrazhensky had in fact four propositions, only the first two of which are quoted in SS (1984). The four propositions were the following:

    I.   Capital accumulation can be increased by lowering the terms of trade of agriculture.

    II.   Lowering the terms of trade of agriculture does not hurt industrial workers.

    III.   The smaller the current capital stock, the larger is the required tax on agriculture.

    IV.   The smaller the current stock of capital, the smaller the share of total investible surplus accounted for by industry profits.

If we disregard the foreign trade term in (8''') wed see that the effect of a lowering of p upon I is entirely determined by the effect of a change in p upon w. This effect can be studied from (7). We shall not spend more effort on this than necessary, so we just refer to the discussion in SS (1984), p.128, which concludes that $dI/dp<0$, and thus that Preobrazhensky's Proposition I is valid, "… turning the terms of trade against the peasants leads to an increased accumulation." SS (1984) also draws that the conclusion that "… turning the terms of trade against peasants leads to a larger increase in accumulation if the price response of the rural surplus is larger." As SS (1984) mentions the latter point contradicts assertions made in the literature.

But with regard to Preobrazhensky's Proposition II the conclusion in SS (1984) is negative. When p is lowered we easily find that w must also be lowered. Lowering p increases utility among urban workers, but it has to be investigated whether the ensuing lowering of w reduces the utility more than the gain from reduced p. SS (1984) finds indeed that "… the welfare of industrial workers must decline if the state accumulates by turning the terms of trade against peasants." SS (1984) further finds that the decline is larger if the price response of the rural surplus is larger.

SS (1984) concludes that Preobrazhensky and others simply have overlooked the constraint (7), or at least its implications.

FIG-3

Thus we have seen that the state may use the price scissors to mobilize more resources for growth. But how far should the price scissors be used? Now we are into normative questions and the theory cannot give us any answer. We can only say that this question implies a balancing of current needs, i.e. consumptions for the working population versus future benefits through growth. We may well imagine that the political leaders have differing views on this, which they certainly had both in the Soviet Union and in China. Within our formal framework we can introduce a preference function as

(9) $\Phi = \Phi(p,I)$

FIG-4a

Let us then reiterate what has only been implicit above, namely that the effort of urban workers has been assumed to be uninfluenced by this choice of economic-political strategy.

We may very well find it likely that reducing the food rations will lead to reduced effort. Or more generally, that at low level of consumption the willingness to work in the service of the society increases with better conditions, i.e. higher consumption. Maoist thinking was at variance with this. Various observations of policy in the pre-reform period suggest that Mao thought that effort could be mobilized without immediate material reward. Perhaps was this also true to some extent.

SS (1984) does not deal with this issue, but in later work, SS (1987), it has been introduced as another key element in the model. We can introduce this by assuming that the production function for the urban good also comprises p and w, i.e.

(3') $Y=(k,L^U,p,w)$

SS (1987) rationalizes this specification by assuming that this could be interpreted either as

(3'') $Y=(k,L^U,x^U(p,w))$,

i.e. that it is the food consumption that counts, or, more generally, as

(3''') $Y=(k,L^U,V^U(p,w))$,

where $V^U(p,w)$ is the indirect utility function for urban workers. We note that lower p makes food cheaper and thus ceteris paribus benefits urban workers both in (3'') and (3'''). But lower p drives down w, as we have seen above, hence it is the net effect that may come out negatively, especially at low consumption levels.

SS (1987) does indeed make a plausible argument for curve of I as a function of p to increase when p is reduced from an initial level of P, but then at some point reach a maximum for some value, say p^*, and then decrease for even lower values of p, due to reduced effort. The productivity effect thus a sets a lower limit on the terms of trade.

I have skipped the formal argument both here and above, partly because I did not find these details so essential, as we in any case have access to the SS papers, but also because we might study this in a seminar.

FIG-4

1.4 Some further discussion

BUKHARIN'S VIEW. THE FURTHER SOVIET DEVELOPMENT

THE CHINESE DEVELOPMENT FROM THE VIEWPOINT OF PRICE SCISSORS

THE DIFFERENCE IN POLITICAL SUPPORT BETWEEN SU AND CHINA.

THE ROLE OF AGRICULTURAL REFORM WITHIN THE OVERALL REFORM