Productivity growth, increasing income inequality and social insurance: the case of China?

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Abstract

This paper builds a simple dynamic general equilibrium model to mimic two striking stylized facts observed in China's reform: productivity growth contributes significantly to output growth, and income inequality increases dramatically over time. Calibration exercises broadly matches the data. The economic growth rate, the aggregate productivity and income inequality increase as the coverage of the social insurance decreases. Perfect insurance is shown to be sub-optimal. With empirically plausible parameters, the level of income inequality under different degrees of social insurance can be very similar, even though their welfare implications are not. Social insurance cannot effectively reduce inequalities. © 2001 Elsevier Science B.V. All rights reserved.

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1. Introduction

This paper studies two striking stylized facts about China's reform: that the output growth in the early stage of the reform is mainly due to productivity growth, and that the income inequality is increasing over time. [1] The first point can be illustrated by the agricultural sector. According to Gelb, Jefferson and Singh (1993, p.109), "almost half of the 42.2 percent growth of output in the cropping sector in 1978–1984 was driven by productivity change caused by reforms. Specifically, almost all of the productivity change was attributable to the changes resulting from the introduction of the household responsibility

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[1] For a review of the literature, for instance, see Sung (1991), Sung (1998), Sung et al. (1995) and Tsui (1991). The documentation of the two facts will be presented in later paragraphs.

Table 1
Growth rates (per annual) in total output and total factor productivity in the agricultural sector of China (Gelb et al., 1993)

Time	Item	Agriculture (percent)
1955–1965	Output	1.8
	TFP	−0.6
1965–1978	Output	2.9
	TFP	−1.0
1978–1984	Output	8.0
	TFP	5.9

system", a scheme that essentially eliminated social insurance and privatized the agricultural sector (Table 1).

Note that the average productivity growth rate in the agricultural sector before the reform is *negative*. [2,3] The significant positive productivity growth is also in sharp contrast with most of the East Asian countries. [4] Thus, it seems interesting to investigate how China could be an exception.

Another unusual fact about China is the continuing increase in income inequality. For instance, Li et al. (1997) examines the Gini coefficient for 49 developed and developing countries covering the period 1947–1994. They find that "90 percent of the total variance in the Gini coefficients can be explained by variation across countries, while only a small percentage of the total variance is due to variation over time.... On the other hand, seven of the countries in the sample have annual changes in excess of 1.0 percent ... in China the index was increasing during our sample period at a rate of 3 percent a year, the *largest rate of change that we observed*." This finding seems to be very robust. [5]

This paper is a preliminary attempt in understanding these two facts in an *unifying framework*. Roughly speaking, it embeds a static moral hazard problem into the AK model developed in Rebelo (1991). Labor effort is unobservable [6] and generates disutility. Under complete social insurance regime ("communism"), agents exert a low level of effort and hence the productivity is low and the difference across agents' wealth is small. Switching from the "communism" regime to a market economy, the income inequality, the "aggregate productivity", and the economic growth rate will increase even without any alternation in

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[2] Note that learning-by-doing in agricultural sector, should have been exploited by China in her long history. Investment in physical or human capital have not significantly increased. Neither is significant labor mobility observed. Under communism, the rights to enjoy public housing, medical care and education are conditioned on the agents' residence in the assigned region and thus making mobility very costly.

[3] Gelb et. al. further reported that similar productivity change was experienced by *other sectors*.

[4] For instance, Kim and Lau (1994), Kim and Lau (1996), Kwong et al. (2000), Young (1994), and Young (1995) document that most of the East Asian countries do not experience much productivity growth in the postwar era.

[5] For instance, Tsui (1991) finds no evidence of the interprovincial income gaps narrowing between 1952 and 1985. Tsui (1997) reports that the rural income Gini coefficient was 0.2124 in 1978, it increased to 0.2577 in 1984, and reached 0.33 in 1993. Similarly, the urban income Gini coefficient increased from 0.16 in 1978, to 0.19 in 1985, and 0.30 in 1994.

[6] These efforts can be best understood as "preventive care", as it is standard in the insurance literature.