

Discussion of “A Forensic Examination of China’s National Accounts” by Wei Chen, Xilu Chen, Chang-Tai Hsieh, and Zheng Song

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Chen et al. (2019) provide a fascinating study that systematically “corrects” China’s GDP statistics. My discussion focuses on several aspects related to China’s questionable GDP statistics: 1) the economic mechanism that leads to systematic misreporting; 2) the approach taken by Chen et al. (2019) to correct the misreporting; and 3) potential consequences of such misreporting.

A. Economic Mechanism of Overreporting

Chen et al. (2019) provides compelling evidence of substantial inconsistencies between China’s national and provincial GDP, mostly in the reported industrial output. Such inconsistencies reveal systematic overreporting in provincial statistics as well as the National Bureau of Statistics’ (NBS) effort to correct the overreporting in national statistics. What causes the overreporting in provincial statistics? This overreporting problem is deeply rooted in the career incentives of provincial officials because: 1) provincial bureaus of statistics report provincial economic statistics under strong influence from the provincial governments, and 2) some provincial statistics, such as provincial GDP and industrial output, are important measures in the central government’s performance evaluations of provincial officials.

Even though the Chinese government has long abandoned central planning, it continues to play a central role in an increasingly market-driven economy. China has a complex government system in which the central government works with regional governments at several levels: province, city, county, and township. Regional governments play key roles in China’s economic development. Regional governments carry out over 70% of fiscal spending and are responsible for developing economic institutions and infrastructure at the regional level, for example, opening new markets and constructing roads, highways, and airports. Despite their

autonomy in economic and fiscal issues, regional government leaders are appointed by the central government rather than being elected by the local electorate. As a key mechanism to incentivize regional leaders, the central government has established a tournament among officials across regions at the same level that uses economic performance to determine their career advancement. This system greatly stimulated China's economic growth by giving local officials both fiscal budgets and career incentives to develop local economies. However, such powerful incentives may also lead to short-termist behaviors of local officials, such as overreporting local economic statistics, especially those that are most relevant for the performance evaluation.

Xiong (2018) systematically examines such short-termist behaviors by developing a “Mandarin model” to account for the agency problems between China's central and local governments in affecting the Chinese economy. This model builds on the growth model of Barro (1990) with a number of regions. In each region, the representative firm has a Cobb-Douglas production function with three factors: labor, capital, and local infrastructure. By creating more infrastructure in the region, the local government can boost the productivity of the local firm. Infrastructure investment represents the key channel for the local government to directly stimulate the local economy. The aforementioned tournament helps to mitigate the local government's tendency to underinvest in infrastructure relative to the social optimum. As more investment in infrastructure improves regional output, the tournament generates an implicit incentive for each governor to invest in infrastructure through the “signal-jamming mechanism” coined by Holmstrom (1982), given that the central government is unable to fully determine whether regional output is due to the governor's ability or infrastructure investment. The powerful career incentives may also lead local governments to overreport regional output. This mechanism is similar in spirit to overreporting of earnings by executives of publicly listed firms, e.g., Stein (1989).

Specifically, the Mandarin model outlines a tradeoff between the provincial government's GDP overreporting and the tax transfer to the central government. For the sake of argument, suppose that a provincial government collects tax revenue at a tax rate of τ of the province's GDP, Y_t , in year t , and needs to transfer a fraction of the tax revenue to the central government at a rate τ_c of the reported GDP Y'_t , with the transfer rate τ_c being lower than the gross rate τ . Then, the residual tax revenue for the provincial government is $T_t = \tau Y_t - \tau_c Y'_t$. It

is clear that overreporting ($Y'_t > Y_t$) reduces the local fiscal budget, which in turn disciplines the overreporting. This tradeoff leads provincial leaders with greater career incentives to overreport more. In addition, the Mandarin model implies that career incentives would also lead provincial leaders with strong career incentives to aggressively use leverage to boost their fiscal budgets at the expense of future debt burdens. Xiong (2018) provides a scatter plot of the ratio of provincial GDP overreporting to GDP, which is based on the estimation of Chen et al. (2018), and the local debt-to-GDP ratio in 2015. The plot shows that these two types of short-termist behaviors are correlated across provinces. This curious association likely reflects the same mechanism driving these short-termist behaviors, as shown by the Mandarin model.

The dynamics of provincial GDP reporting are more nuanced than simply always overreporting. Commentators sometimes argue that fast-growing provinces like Guangdong have sufficient margins to meet their growth targets and may choose to underreport, rather than overreport, their GDP, as underreporting may help to reduce tax transfer to the central government and keep a strategic buffer for future.

The inconsistencies between the national and provincial GDP also reflect that the central government is fully aware of the incentives of provincial governments to overreport their economic statistics and has made an effort to correct the overreporting in the national statistics. Interestingly, the NBS does not provide any breakdown on its assessments of overreporting by individual provinces, possibly because it does not want to publicly embarrass the provincial leaders, some of which are already members of the Politburo and some of which will eventually become national leaders. Furthermore, the correction by the NBS is constrained by its own data limitations, as well as its own incentives. The NBS may not have a bias toward overreporting national statistics, yet it may be reluctant to report statistics that fall substantially short of the economic targets pre-announced by the central government. In this sense, the NBS has also another set of incentives to manage the national statistics.

B. Estimating Overreporting

Chen et al. (2019) use the value-added tax revenue as the basis to correct the overreporting in the GDP statistics. The premise of this approach is that local governments would not overreport value-added tax revenue because doing so would lead to greater shares of

the actual tax revenues being transferred to the central government. This estimation approach is appealing and powerful and leads to a set of interesting and relevant corrections. Yet, it is useful to note that although it is costly to overreport tax revenue, it may nevertheless happen in practice. In recent years, several regions such as Liaoning, Tianjin, and Inner Mongolia, officially acknowledged the previous overreporting of their GDP and tax revenues. These confessions typically happened after the previous regional leaders lost their prominence due to corruption allegations, and they helped the current leaders to obtain bigger fiscal subsidies or transfers from the central government. The confessed overreporting of tax revenue was substantial, even though it might have also been exaggerated due to the current leaders' incentives to plea for central government transfers.

C. Consequences of Overreporting

Economic statistics are an important source of information for policy makers, and firms and individuals to adjust their policy, production, and investment decisions in response to time-varying economic conditions. It is difficult to directly estimate the potential distortions induced by the misreporting of economic statistics. China's Great Famine in 1959–1961 provided an extreme example of the deadly consequences of overreporting regional agricultural output. Meng, Qian and Yared (2015) provide forceful evidence that the severity of the famine was driven by over-procurements of grain during this period. Fan, Xiong and Zhou (2016) point out a surprising observation that the central government provided no famine relief during the first two years of the famine. To the contrary, China had exported a large quantity of grain to other countries, including sending food aid to some African countries, in 1959 and 1960, after the famine had already spread across all of China. It is important to note that this devastating famine was also accompanied by widespread overreporting of grain output by regional leaders due to their desire to support Mao's plan to quickly increase the country's agriculture production in support of the Great Leap Forward. Such overreporting might have led to excessive procurements of grain, which left insufficient grain to support local peasants. More profoundly, the overreporting might have also encouraged the central government's radical policies of moving more peasants from agricultural production to industrial production just when grain output was rapidly falling.

In the modern era, there are many other sources of information for the central government and the general public to gauge the economic conditions in China. Thus, we do not expect this kind of fatal information breakdown to occur again. Nevertheless, the overreporting of economic statistics documented by this paper deserves close scrutiny.

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