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Deconstructing China's GDP statistics

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Abstract

China's National Bureau of Statistics (NBS) has on repeated occasions explained in great detail how its GDP statistics are derived from the underlying data. Based on these explanations, this article reconstructs Chinese official household consumption, which accounts for half of GDP. The findings are condemning. Not only do the various official explanations offered between 1997 and 2001 differ from each other, but none allows the researcher to accurately reconstruct household consumption. Furthermore, the relationship between the GDP component household consumption and the underlying data varies from year to year, which suggests that time series comparisons of Chinese GDP may be invalid.

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1. Introduction

Chinese statistics have in recent years come under increasing criticism, with researchers questioning the meaning of individual statistics and raising the specter of widespread data falsification.¹ Three books published by China's National Bureau of Statistics (NBS)

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¹ For example, Cai (2000) reports on data falsification in the countryside. Rawski (2001a, 2001b, 2002), Adams and Chen (1996), and Meng and Wang (2000) question the reliability of GDP statistics in the most recent years, with Rawski focusing especially on the years since 1998. Keidel (2001) documents the nonsystematic differences between the official real GDP growth rates based on the production approach and the real GDP growth rates following the expenditure approach. Holz (2003), on the other hand, questions the evidence that purports to show data falsification in the nationwide aggregate official statistics.

between 1997 and 2001 explain how China's GDP is calculated. This article takes the official instructions on how GDP is calculated at face value and tries to implement them in an attempt to reconstruct the household consumption component of GDP from the underlying data. Household consumption accounts for approximately one half of GDP throughout the reform period.²

The results are astounding. First, the different official explanations on how the various (household) consumption components are calculated are rarely identical; occasionally, they are inappropriate on logical grounds. Second, in implementing the (differing) official explanations on how to derive the various consumption components from the underlying data, the outcome of the calculations rarely matches the official consumption data. Third, time series comparisons of the consumption data with the underlying data reveal roller-coaster relationships that stretch credulity.

The implications are severe. If the underlying data were correct, the published GDP value of any particular year is not comparable to that of any other year as the compilation process—of at least consumption—has not been held constant and changes in the compilation process do not lead to retrospective revisions of earlier published data. Thus, an official annual GDP growth rate of $X\%$ in a particular year does not imply that final demand (the sum of consumption, investment, and net exports) in that year is $X\%$ higher than in the previous year.

The fact that the publicized procedures for the derivation of expenditure approach GDP in the case of household consumption do not allow the reconstruction of official data violates the basic principles of official statistics as outlined in 1994 by the United Nations Statistical Commission: “To retain trust in official statistics, the statistical agencies need to decide according to strictly professional considerations, . . . The laws, regulations and measures under which the statistical systems operate are to be made public.”³ The fact that the procedures published in an internal GDP manual are of no further help suggests that clear-cut procedures may not even exist within the NBS or that procedures are being continuously modified.

The focus of this article is household consumption as the major component of expenditure approach GDP, rather than total GDP, for two reasons. First, space constraints do not allow the in-depth examination of more than this largest single component of expenditure approach GDP. Second, in the case of household consumption, the underlying data are somewhat accessible, in contrast to other expenditure approach GDP components or production approach GDP components.

The following section introduces basic definitions and data sources. Section 3 contrasts the various components of household consumption as part of GDP with the reportedly underlying data. Section 4 points out some of the implications of the problems in reconstructing the official data, and Section 5 elaborates on an additional complication due to the population data used for aggregation. The last section concludes.

² In 1978, household consumption accounted for 48.79% of expenditure approach GDP, and in 2002, it accounted for 45.26% (*Statistical Yearbook 2002*, p. 63f; *Statistical Abstract 2003*, p. 30f).

³ For all 10 fundamental principles of official statistics, see Holt (1998, p. 211f).

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