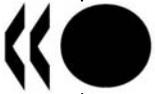


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**OECD — CHINA GOVERNANCE PROJECT**

**THE INSTITUTIONAL ARRANGEMENTS FOR THE PRODUCTION OF STATISTICS**

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## ABSTRACT

The purpose of this working paper is to provide an overview of recent discussions on the quality of Chinese data, and to describe and evaluate the institutional organization and methods of data compilation in China. The first part outlines key criticisms of Chinese data and examines their validity. The second part describes the institutional organization of statistical data compilation in China--with a focus on the National Bureau of Statistics as China's statistical authority--and the latest innovations in data collection. The third part evaluates institutional aspects and data collection methods with reference to the data problems noted in the first part by pointing out some shortcomings and discussing various reform proposals.

Le but de ce document est de fournir une vue globale de la qualité des données chinoises, ainsi que de décrire et évaluer les méthodes et l'organisation institutionnelle de la compilation des données en Chine. La première partie met en évidence les critiques clefs des données chinoises et examine leur validité. La seconde partie décrit l'organisation institutionnelle de la compilation des données statistiques en Chine – avec un accent particulier mis sur le National Bureau of Statistics, en tant qu'administration statistique en Chine – et les dernières innovations de la collecte des données. La troisième partie évalue les aspects institutionnels et les méthodes de collecte des données, se référant aux problèmes des données énoncés en première partie, par la mise en évidence de lacunes et la discussion de diverses propositions de réformes.

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## OECD — CHINA GOVERNANCE PROJECT

### THE INSTITUTIONAL ARRANGEMENTS FOR THE PRODUCTION OF STATISTICS

Statistical data in China are compiled by a number of government departments. At the national level these include the National Bureau of Statistics (NBS, *guojia tongjiju*), the People's Bank of China (China's central bank), the Finance Ministry, the State Administration of Foreign Exchange, the Customs General Administration, and dozens of other central government departments.<sup>1</sup> While the People's Bank of China is responsible for financial sector data including foreign exchange reserves, the Finance Ministry for fiscal sector data, and the State Administration of Foreign Exchange and the Customs General Administration for external sector data, the NBS carries the responsibility for organizing, directing and coordinating the statistical work throughout the country.<sup>2</sup>

The NBS compiles real sector data, ranging from national accounts aggregates to price indices and labor market indicators, as well as various socio-demographic data covering such issues as population, health, education, and poverty. In its core publication, the annual *Statistical Yearbook*, it publishes data that it has collected itself as well as data obtained from other government departments; these include the financial, fiscal, and external sector data from the relevant departments, but also a wide variety of other data such as, for example, data on tourism obtained from the State Tourism Administration (supplemented with NBS survey data) or patent data obtained from the State Intellectual Property Office.<sup>3</sup>

The focus in the following is on the NBS as the key institution in charge of the compilation and publication of statistics in China. Since the beginning of the economic reform period in 1978, the NBS has undergone a number of changes. These include organizational changes, changes in data compilation methods, and changes in the types of data collected.

The formal adoption of the System of National Accounts in 1993 marked an incisive switch in the choice of indicators used to measure nationwide productive activities. At the heart of the implementation of the System of National Accounts in China is the measurement of the market value of all final goods and services produced in a country in one year, i.e., gross domestic product (GDP). In recent years, the quality of Chinese GDP and other data has been repeatedly questioned. Part One lays out some of the criticism and examines its validity.

Questions about data quality inevitably lead to questions about the institutional organization of China's statistical authority and the methods of statistical data compilation in China. The second part describes the organization of data compilation and recent developments in data compilation methods in China. The third part evaluates the current institutional organization of data compilation and the current data compilation methods in light of the perceived shortcomings in Chinese data identified in the first part.

## Part One: The Quality of Chinese Statistics

Since the late 1990s, the quality of Chinese statistics has repeatedly been called into question. Purposeful falsification of output values by lower-level governments, whose performance is evaluated in part based on local output growth rates, is an officially acknowledged fact. Some Western scholars have at times wondered publicly whether the NBS itself has not come under political pressure to falsify national GDP data, especially in the years 1998 through 2001. This part first examines the evidence of falsification of GDP data and then moves on to general data problems.

### *Questions about the Reliability of Nationwide Real GDP Growth Rates*

A number of Chinese and Western authors have questioned the reliability of official real GDP growth rates in recent years.<sup>4</sup> Alternative guesstimates of China's real GDP growth rates suggest around zero percent growth in 1998 and 1999 (compared to the original official, unrevised real growth rates of 7.8% and 7.2%), and approximately half the original, official unrevised real growth rates of 7.1% and 7.3% in 2000 and 2001. The official real growth rate of 2002 is accepted as correct if not an underestimate.<sup>5</sup>

Three independent pieces of evidence of data falsification that have been provided in the literature are incongruity between the outcomes of different approaches to the calculation of GDP, double-checks on the growth rate of real GDP using other variables whose values should move in step with real GDP growth, and suggestions in the Chinese official media of rampant data falsification.

#### *Alternative GDP calculation 1997/1998*

Thomas Rawski (2001a) established an independent nationwide income approach calculation based on the individual income components for 1997 and 1998. He arrives at a 1998 real GDP growth rate of 5.7% in contrast to the official 7.8%. The discrepancy of 2.1 percentage points, in comparison to the alleged size of data falsification, appears minor. This discrepancy is diminished to 0.6 or 0.7 percentage points once later revisions to the first-published official GDP data are considered.<sup>6</sup> One complication of this approach, as Thomas Rawski points out, is that the official data on income components, even though widely dispersed across the *Statistical Yearbook* (the major official source of annual data), are possibly of dubious quality.<sup>7</sup>

#### *Double-checks: energy, output quantities, and transportation*

As GDP grows, so should energy use, freight transportation, and the physical quantity of output of individual industrial products. But in the late 1990s, energy use, output quantities of different products, and, by some measures, also freight transportation, grew at a rate significantly below that of GDP. This raises questions about the accuracy of either GDP growth or of the growth in these other variables. Critics of China's official real GDP growth rates focus on the first interpretation.<sup>8</sup>

But data on these other variables are highly problematic. Chinese data on energy use, on the output quantities of individual industrial products, and on freight transportation are increasingly incomplete. They are increasingly incomplete because these data tend to cover only a (stagnating) subset of the economy, the directly reporting enterprises. Comparisons between 1997 and 1998 are especially dangerous since this subset of directly reporting enterprises was re-defined in 1998.

Some provincial statistical yearbooks (but not the national *Statistical Yearbook*) in their energy consumption tables report the energy consumed in industry together with the gross value of industrial output produced using this energy. Double-checking against the industry data in the industry section of the provincial yearbooks reveals that this industrial output value, reported in the energy tables as matching industrial energy use, corresponds to the output produced by the *directly reporting* industrial enterprises,

rather than to the output of *all* industrial enterprises. Adding up industrial energy consumption across provinces yields a value approximately equal to the official value for nationwide industrial energy consumption published in the NBS' *Statistical Yearbook* and used by the critics. But this implies that nationwide industrial energy consumption corresponds to only a subset of industrial output, approximately that of the directly reporting industrial enterprises.<sup>9</sup> With industrial energy use accounting for approximately two-thirds of total energy use in China, nationwide *total* energy use, therefore, cannot be related to nationwide total value-added (GDP).

A similar argument applies to the quantities of industrial products produced. These data, especially since the changes to the reporting system in 1998, across almost all provinces do not cover economy-wide output of individual products but only the output of the directly reporting industrial enterprises. The use of freight data as a double-check for industrial value-added (or even GDP) fares no better. For example, according to official data, nationwide freight transportation stagnates at a time when petroleum consumption in the transportation sector is rising at double-digit growth rates. Does this suggest that China is using ever more outdated pieces of transportation equipment powered by ever more backward technology, or is this simply a reflection of the fact that the NBS has available only data on the decreasing share of freight transportation that occurs under the administration of the relevant government departments?

The NBS does not have the labor force to collect data on energy use in the now close to 10 million industrial enterprises, let alone across the economy in total. The NBS is also not manning roadblocks across the country examining the weight of freight transported and calculating the distance over which it is transported. Even if the NBS were in a position to demand such detailed energy, freight, or product data from the many millions of small enterprises (a position in which it is not, and a demand that would be unenforceable), and if the NBS could process this volume of data, it would still be in no position to ascertain the accuracy of the data it receives. Energy use, output quantities, or freight transportation are not even variables to which the NBS accords special importance among the thousands of variables on which it collects data. In Western economies, statistics on output quantities and freight transportation are often not available at all, while energy use may come with a range of caveats, including limitation to a subset of the economy.<sup>10</sup>

### *Reports on data falsification*

In the late 1990s, the Chinese press carried numerous articles criticizing the quality of official statistics. On 23 August 1995, Zhang Sai, then NBS commissioner, in support of the 1996 revisions to the PRC Statistics Law argued that: "recently the phenomenon of false and deceptive reporting has spread in some localities and some units. The danger is large, the impact very negative." Reports on data falsification then became standard fare in the monthly NBS journal *Zhongguo tongji* [China Statistics]. The Chinese slogan of *jiabao fukuafeng* ("wind of falsification and embellishment") soon made the round. These reports were interpreted as suggesting that even the NBS was not impervious to pressures to falsify data.<sup>11</sup>

Reports on data manipulation came in two types. One type presented concrete evidence of data falsification, usually regarding one local enterprise or government.<sup>12</sup> Such hard evidence is relatively scarce and the degree of falsification in the particular instance is typically in the single-digit or lower double-digit percentage range; comparison data, such as output across the geographic entity, are not presented. A second type of report remained very general, stating that data falsification takes place, but offering only the standard reasons for why it occurs (meeting growth or other targets, and achieving a higher evaluation of one's job performance, but also sloppy survey methods and poor quality of statistical personnel).<sup>13</sup>

The NBS in 1997 cooperated with the Chinese Communist Party Central Committee (CCPCC) Disciplinary Commission and the CCPCC Organizational Department in drawing up a document attacking data falsification. The offices of the CCPCC and State Council in February 1998 formally issued the document. This was followed in 1999 by a NBS circular sharply criticizing data falsification in some localities. Individual provinces followed suit with their own instructions, requesting an evaluation of the quality of the local GDP data, and assigning responsibility for the accuracy of GDP data to the heads of all statistical departments. In other words, by 1998, a standard campaign unfolded, with a limited number of exemplary reports of wrongdoing and otherwise general “spirit” and sloganeering articles. The target of the campaign was data falsification at the lowest-level tiers of data compilation. By 2001, the wave of sensational reports on data falsification in *Zhongguo tongji* ceased. The focus since 2001 has shifted to technical and definitional problems of Chinese statistics, where shortcomings are openly acknowledged.<sup>14</sup>

### *General data problems*

Beyond the issue of data falsification looms a larger question of the accuracy of Chinese data in general. How large are the margins of error?

### *Transition issues*

In 1994, the World Bank in its publications adjusted China’s official per capita GDP upward by 34.3% and continued to adjust official Chinese data in the following years until it accepted the official Chinese data in 1999. Some of these adjustments were due to the application of different prices, others due to World Bank adjustments to quantity data.<sup>15</sup> NBS employees are aware of further areas for improvement, for example, in the valuation of housing services, government subsidies, enterprise-internal social welfare activities, rural industrial statistics, and agricultural statistics.<sup>16</sup> These ongoing revisions to GDP appear a natural consequence of a socialist economy in transition to a more market-oriented economy where an ever increasing share of prices becomes market-determined, and of a developing economy where productive activities become ever more complex and therefore more difficult to measure.<sup>17</sup>

### *Differences in GDP depending on calculation method*

Official Chinese GDP and the official real GDP growth rate are calculated using a combined production and income approach. The combined approach relies on the production approach in agriculture, industry, and construction, but mostly on the income approach for the tertiary sector. Income and expenditure approach GDP data are also published, but the first only at the provincial level (where the values are identical to those in the combined production-income approach), and both, for the most recent years, only in nominal terms.

Albert Keidel (2001) deflated the individual expenditure approach components by what he viewed as their appropriate deflators to construct an alternative real GDP growth series based on the expenditure approach. Table 1 shows that the alternative (expenditure based) real GDP growth rate in some years by far exceeds the official (production-income based) real GDP growth rate, such as in 1994 (by 2.8 percentage points), but in other years, such as in 1997 through 1999, is almost two percentage points lower than the official real GDP growth rate. Assuming that expenditure approach GDP is indeed compiled independently of the production-income approach, these differences provide a rough guideline as to the margin of error in annual growth rates.

### *Inconsistencies in expenditure approach GDP*

But expenditure approach GDP may not even have been calculated independently of the production-income approach. An attempt to reconstruct household consumption, which accounts for approximately half of expenditure approach GDP, from the underlying data following NBS explanations on how it derives

expenditure approach GDP, reveals inconsistencies. First, NBS explanations in different sources on how expenditure approach GDP is calculated are not fully consistent with each other. Second, reconstructing expenditure approach household consumption following NBS explanations on how it derives consumption as part of expenditure approach GDP, the values obtained do not accurately match the official expenditure approach household consumption data. The gap between the published data and the data re-constructed following NBS explanations on how it supposedly calculated expenditure approach GDP is significant (several percentage points), but not perfectly systematic over time. This suggests that, as in other countries, attempts are made to iron out the differing results of the production-income vs. the expenditure approach. In the case of China, where the expenditure approach is conducted only on an experimental basis, it could also imply continuous, ongoing revisions to how expenditure approach GDP is calculated.<sup>18</sup>

### *Revisions to GDP*

The NBS retrospectively revises data in benchmark and in annual revisions. The most recent benchmark revision occurred a decade ago following the 1993 tertiary sector census; the findings of the 1995 industrial sector census would well have justified another benchmark revision, but it did not occur. The next benchmark revision is expected for 2005.

Every year the NBS in the *Statistical Yearbook* provides a revised set of production-income approach nominal GDP data for the last previously published annual data. For example, the *Statistical Yearbook 2003* provides revised nominal GDP data for 2001 together with GDP data for the latest year, 2002. Real growth rates are typically not retrospectively revised. This raises the question of whether the lack of revision of real growth rates implies that revisions to nominal data are solely due to revisions of the only implicitly published GDP deflator (implicit in the nominal data combined with the real growth rates), or whether the implicit GDP deflator need not be revised and the revisions to nominal GDP then should trigger corresponding revisions to real GDP growth. It is more likely that the implicit GDP deflator need not be revised since all information it reflects is likely to be available in the first year when the GDP data are published. Table . shows the impact on official real GDP growth rates if the later annual revisions to nominal values are translated into corresponding changes in real GDP growth rates. Later revisions can shave up to 1.4 percentage points off the originally published (and usually not revised) real growth rates.

### *Provincial vs. nationwide data*

The sum of provincial GDP routinely exceeds nationwide GDP. Table 2 shows the extent of NBS adjustments to provincial data for production-income approach GDP and expenditure approach GDP. In both cases, the extent of NBS downward revisions to the sum of provincial GDP has increased since 1997; by 2002, the sum of provincial GDP in the production-income approach was 12.63% larger than the national value reported by the NBS. In the production-income approach, the NBS is revising downward provincial primary sector and in particular tertiary sector value-added. In the expenditure approach, the NBS systematically revises provincial household consumption upward and government consumption and gross capital formation, particularly inventories, downward.

While the NBS offers no detailed explanation on how it adjusts provincial GDP data, Liu Hong, the then NBS commissioner, in February 2000 stated in just two sentences that the NBS adjusts provincial GDP data based on two sets of information. It contrasts provincial GDP data with key economic data obtained through sample surveys in each province. The NBS also has available data on variables related to GDP, and assumes that the values of these variables cannot grow at a speed which is much different from that of GDP.<sup>19</sup>

More recently, the differences are being attributed to data falsification at the lower-level tiers but also to enormous data problems in calculating provincial-level, let alone municipal- and county-level GDP. In

the production-income approach, alleged local exaggeration in the tertiary sector is attributed to a lack of local data (with nationwide data presumably collected through nationwide sample surveys). In the expenditure approach, local imports and exports, which at the local level include trade with other localities, are impossible to determine, and data on changes in inventories are supposedly highly incomplete since such data are, at the local level, only available for the directly reporting enterprises.<sup>20</sup>

### *Underestimation of GDP*

While suspected data falsification always concerns exaggeration, Chinese official real GDP growth rates could also be underestimates for a number of reasons. For example, the 2004 quintennial economic census covering industry, construction, and all services is expected to result in a large upward correction to tertiary sector value-added. Second, China currently does not include black economy activities in GDP calculations, as is done in some other countries, and is estimated to account for 8 to 30% of GDP in OECD countries. Third, rural and urban housing consumption are broadly based on construction values and depreciation rates of 2% in the countryside and 4% in urban areas; the construction costs of past years used in the calculations appear not inflated to current-year values, and the depreciation rates are almost surely too small.

### *Conclusions on data quality*

However one may evaluate the allegations of data falsification in certain years, even the critics acknowledge that long-run growth trends are approximately correct. The data problems reported here are facts which are unlikely to be unique to China; other transition and developing countries experience similar difficulties.<sup>21</sup> The margins of error are inevitably larger than in developed countries, perhaps even uncomfortably large. More information about (actual rather than supposed or desired) data compilation methods would be of much help in evaluating the quality of specific data. Absent such information, the organizational underpinnings of data compilation may provide more perspective on data quality in China. The next part describes the organizational aspects of Chinese statistics.

## **Part Two: Main Features of China's Statistical System**

There are two organizational aspects to statistical data compilation. One is the institutional organization of data collection, and the other the methods of data collection. These two are described in the following. The third part evaluates the institutional organization and the data collection methods, at times in light of the data problems noted in the first part.

### *Institutional organization of statistical data compilation*

The primary institution in charge of the compilation of statistics is the National Bureau of Statistics in cooperation with local statistical bureaus under its professional leadership (in total, the statistical bureaucracy, or statistical *xitong*). A second channel consists of statistical divisions within specific bureaucracies in charge of particular economic or social activities, for example, the Agriculture Ministry together with the local agricultural departments (the agricultural *xitong*).

### *Overview of the statistical system*

Figure 1 summarizes the two different channels by treating all localities, i.e., provinces, municipalities/ prefectures, and county-level entities, as one administrative level rather than three separate ones. The figure distinguishes between three different types of relationships between economic actors, namely administrative leadership (*xingzheng lingdao guanxi*), business (or professional) leadership (*yewu lingdao guanxi*), and business (or professional) guidance (*yewu zhidao guanxi*).

The State Council, as the government of China, exerts administrative leadership over (i) central ministries, commissions, and other central government departments, which include the NBS as an organization directly under the State Council, and (ii) all provincial and provincial-level entities. Administrative leadership means that the State Council issues binding orders, appoints major personnel, and plays a crucial role in budget decisions (in the case of central government departments, it provides all budgetary funding). At the next level of administration, the central ministries, commissions, and government departments (in the following, altogether denoted “other government departments”) exercise administrative leadership over their internal divisions, while the provincial governments exercise administrative leadership over their government departments as well as the next lower-level government. As the NBS is directly subordinate to, or part of, the State Council, so local statistical bureaus are directly subordinate to, or part of, local governments.

The NBS is linked to local statistical bureaus through its business (or professional) leadership. In all matters related to statistical work, such as the definition of statistical variables, the classification of enterprises, or the standardization of report forms for statistical reporting units, the provincial statistical departments follow NBS rules. The NBS also has some influence on local appointment decisions and provides some funding to local statistical bureaus (further explored below). A similar relationship exists between other central government departments and their provincial counterparts. Business leadership typically characterizes the relationship among different tiers within one *xitong*.<sup>22</sup>

The NBS is far removed from the statistical divisions within other central government departments in that it has virtually no influence on their appointment decisions and funding, but does cooperate on, for example, the design of their report forms. For a variety of data the NBS relies on these statistical divisions within other central government departments, without being able to dictate the types of data to be collected or the precise collection method. Its authority is limited to “guidance.” The same type of relationship is repeated at the lower-level tiers, between the local governments’ statistical departments and the statistical divisions in other local government departments. The relationship between internal statistical divisions at different administrative levels is also limited to business guidance.<sup>23</sup>

The NBS and local statistical departments collect data from statistical reporting units, which comprise enterprises, individuals, and administrative units (*xingzheng danwei*) or administrative facilities (*shiyedanke*), with the latter two ranging from government administrative departments to universities and sectoral business associations. Data collection is regulated in the Statistics Law as a compulsory task for statistical reporting units.<sup>24</sup> The statistical divisions of other central government departments collect data from the statistical reporting units (for example, enterprises, or banks) under their direct administration.

The various *xitong* typically extend down to the county level. In the case of the statistical *xitong*, statistical work is further supported at the township level by a township statistics office, often consisting of no more than one person (who may only work part-time on statistical issues), and at the village level by the village accountant.

#### *The statistical system in detail*

Figure 2 omits the State Council/ local governments and the non-statistical *xitong* to focus in more detail on only the institutions involved in data collection. In this figure, all administrative levels are included, as is one representative of the various divisions within a statistical bureau (the national income accounts division). The central as well as local (provincial) survey teams are also included. The business leadership between statistical bureaus at different administrative levels is reproduced from Figure 1. Two special instances are the provincial and the county statistical bureaus in that their business leadership may not only extend to the next-lower tier but also to two tiers below. Thus, for example, a circular on some

business matters issued by the provincial statistical bureau could go directly to the county statistical bureau, rather than only to the municipal/ prefectural tier.

The statistical bureau at each level is fully in charge of its various divisions, such as, for example, the national income accounts division; the relationship consequently is an administrative leadership relationship. A division within the statistical bureau then exerts business guidance over the corresponding division at the next lower-level government tier.

Divisions of the statistical bureaus at all levels may collect data from the statistical reporting units, although, in practice, most data collection occurs at the municipal and at the county level (or equivalent district level within municipalities). Traditionally, individual divisions within the statistical bureau at a specific government level would only collect data from statistical reporting units under the jurisdiction of this, or lower-level governments. For example, a provincial-level statistical bureau would not collect data from enterprises located in this particular province but belonging to (being under the administrative leadership of) a central government department, unless the center had agreed to such an arrangement. This has become more variable in the most recent years with a gradual transition to statistical data compilation based on geographic locality (*zaidi*) rather than administrative subordination.<sup>25</sup>

The two types of survey teams, central and local, are subject to a direct subordination relationship (*chuzhi*). Central survey teams located at the county or municipal level report directly to the center's provincial-level survey team headquarters, which in turn report directly to the center's nationwide survey team headquarters (administrative leadership across all tiers). Local governments and local statistical departments supposedly have no influence over central survey teams at any level. A similar arrangement holds for the local (provincial) survey teams with regard to the municipal and county level governments and statistical bureaus. All members of the central survey team *xitong* are paid directly by the center, and all appointment authority rests within the central survey team *xitong*.

Central and provincial survey teams tend to coordinate at the provincial level to avoid duplication, and they share information. Thus, for example, the center's rural survey teams may collect a certain set of data in the counties they cover, while the province's rural survey teams do the same or fulfill a similar task in those counties they cover. The center's provincial survey team headquarters relies primarily on its own data but usually has access to the local provincial survey team headquarters' data, and may report both to the NBS. The center's provincial survey team headquarters, in turn, may share its findings with the local provincial survey team headquarters and the provincial statistical bureau.

#### *Appointment authority and funding*

The appointment mechanisms at the NBS follow the standard pattern for central organizations. All major staff of the NBS are presumably identified by the Chinese Communist Party's (CCP) Organization Department (personnel office). Major staff include the head (commissioner) of the NBS, all deputy-commissioners, the chief statistician, the chief economist, and the chief engineer, and probably also the heads of all administrative divisions and of the three central survey team headquarters.<sup>26</sup> The NBS as a national-level bureau is ranked half a rank below ministries and commissions, which implies that the NBS commissioner is appointed by the State Council (the Prime Minister). The commissioner is typically a political appointment, i.e., somebody without a career in statistical work.<sup>27</sup>

At the provincial level, all leading appointments to the statistical bureau are a matter of the provincial Party Committee and government. When appointing the head and deputy-heads of the provincial statistical bureau, suggestions by the NBS need to be taken into consideration. This amounts to a de facto veto right for the NBS. The same pattern is repeated at the municipal and county level; the suggestions of the next higher-level statistical bureau have to be sought before appointing the head and deputy-heads.<sup>28</sup> More

recently, the implementation instructions to the Statistics Law (NBS, 2 June 2000, Art. 29) even go a step further in that they stipulate higher-level statistical bureau approval for appointments of all “mid-ranking” and higher statistical “special” and “technical” regular staff, although this may in practice not amount to much more than an advisory role.<sup>29</sup>

All appointment authority to central survey team organizations at any administrative level rests with the NBS. But with survey team staff at county and municipal level usually hired locally, the local statistical bureau is officially given an assisting role. In the case of internal statistical divisions of other government departments, all appointment authority rests within that *xitong*; the statistical *xitong* may make suggestions but has no veto power.

Official funding for statistical work at central to county level comes from three sources: central government budget, local government budgets, and various types of income received for services provided (such as surveys implemented on behalf of paying customers). The third type of income accounts for approximately 4% of total funding; the main sources of funding are central and local government budgets, each providing approximately one half of total funding. These official funds are in all likelihood supplemented by a significant (but unknown) amount of informal funds collected through fees or various money-making undertakings.<sup>30</sup>

Central government budgetary funds are intended to finance the operations of the NBS but also to support statistical work at lower-level tiers. In principle, local statistical bureaus receive central funding to cover work-related costs (*shiye bianzhi de jingfei*), while local funding covers basic administrative costs (*xingzheng jingfei*), presumably costs such as offices, staff housing, and perhaps some salaries, or a basic salary for all employees. All local purchases of tangible assets are locally funded. Central survey teams are fully centrally funded. Internal statistical divisions of other government departments are funded by those government departments. Special tasks, such as censuses, are jointly funded by center and province.<sup>31</sup>

When the NBS in its current form emerged from the Cultural Revolution in 1976 it had just 7000 staff nationwide; by 1986, that number had risen to 67,360 staff at the county level and above.<sup>32</sup> Today, the total regular staff of the statistical *xitong* is, depending on the source, approximately 80,000 or 90,000.<sup>33</sup> Regular staff refers to formal positions determined in government regulations with salaries guaranteed through government budget appropriations. The NBS has 280 regular staff in its administrative divisions. This number includes the commissioner, four deputy-commissioners, 36 division heads and deputy-heads, the chief statistician, chief economist, and chief accountant; it does not include the employees of the central survey teams (who are also regular staff). This number also does not include the staff of the NBS’ administrative facilities, which are not “regular” staff.<sup>34</sup>

Further data, pieced together from various sources, yields the following approximate regular staffing at the different government levels:<sup>35</sup> at the NBS 280 regular staff, at the provincial level approximately one hundred regular staff in each of the 31 provinces, approximately 30-50 regular staff in each of the 332 municipalities/ prefectures, approximately 10-12 regular staff in each of the 2860 counties (including county-level cities and urban districts), one or one part-time statistics official in the approximately 44,850 township-level entities, and about 6-12 staff in each of the 1293 central survey teams and a slightly smaller number of staff in presumably a similar number of local survey teams (with a few additional regular staff at the top and intermediate levels of the survey team structure). At the lower boundary (with half a statistics official at the township level), these figures add up to the official number of approximately 80,000 regular staff.<sup>36</sup> Apart from the regular staff, the number of staff in administrative facilities and in other, not formally listed institutions attached to the statistical *xitong* is not known. It may in the aggregate well be of similar size.

*NBS-internal organization*

Apart from the commissioner, the four deputy commissioners, the chief statistician, chief economist, and chief engineer, the NBS officially consists of 15 administrative divisions, 12 administrative facilities, and 3 survey team systems (Figure 3).

The 15 administrative divisions comprise five functional departments, such as the national income accounts division, and otherwise general departments, such as a division for policies and legislation. The particular arrangements of divisions and the particular functions of individual divisions undergo minor changes over time. For example, in 1998 the task of collecting data on furloughed labor of state-owned enterprises was transferred from the NBS (presumably from the NBS division in charge of population, social, science and technology statistics) to the Labor and Social Security Ministry.<sup>37</sup>

One of the general NBS divisions is the Party committee, as typical for all government institutions. One of the deputy commissioners functioned as the secretary of the Party committee at year-end 1996 and at year-end 1991, the two years for which this information is available. The executive deputy-secretary of the Party committee throughout the 1990s has not held any other position in the NBS, while the other two deputy-secretaries of the Party Committee have at times also served as the secretary of the (Party) Disciplinary Commission and as the chairman of the NBS labor union. The executive deputy-secretary of the NBS Party committee at the end of 1997 was unchanged from the end of 1991, which suggests that this position is not of great importance as otherwise rotation would be more frequent.<sup>38</sup> Unlike in the case of the banking system or state-owned enterprises, where major policy decisions are needed and in the past, in many instances, were made in special CCPPC work committees or leading groups, the compilation of statistics is predominantly routine work with no scope for policy decisions. It would appear that the Party committee in the NBS mainly fulfills the usual functions in ideological work and personnel appointment.

The 12 administrative facilities of the NBS fulfill a range of tasks that are not considered core tasks, although the distinction between administrative divisions and administrative facilities appears, at times, vague, and may primarily have been dictated by the government-imposed limit on (and, over time, reduction in) the number of regular staff. Thus, the census center could well have been an administrative division, while the China statistical press as a commercial undertaking rightly belongs in the category of administrative facilities. Since staff of administrative facilities are not regular staff, their positions are not guaranteed.

Administrative facilities reflect a fractional outsourcing of formerly NBS tasks. These tasks are not fully outsourced in that there is no competitive bidding by outsiders to fulfill these tasks. But these tasks are also not completely internal to the NBS since the staff are not regarded as regular staff. However, the administrative facilities remain part of the NBS *xitong*, and funding by the NBS for some of them continues, possibly supplemented by cross-funding from administrative facilities.<sup>39</sup>

Central rural and urban survey teams were (re-)established as administrative facilities directly under NBS control in 1984. In mid-2001, the NBS had rural survey teams in 857 of China's 2109 counties, and urban survey teams in 226 of the 663 municipal or county-level cities. In 1994, the NBS began to add enterprise survey teams, which culminated in the establishment of 210 central city enterprise survey teams, linked by a computer network, in 1997 and 1998.<sup>40</sup> Central survey teams have close to ten staff each, which makes them equal in size to the county statistical department.

The rural survey teams conduct rural household surveys, rural production surveys, and rural basic economic conditions surveys. The urban survey teams are in charge of urban household surveys, urban basic conditions surveys, and price surveys (of materials traded on the market [*shichang wujia*], consumer goods, industrial goods, agricultural procurement goods, and investment in fixed assets).<sup>41</sup> The enterprise

survey teams concentrate on sample surveys of non-state industrial enterprises with annual sales revenue below 5m yuan RMB and of the self-employed, and check on the validity of important enterprise indicators in general. But they in, for example, 1997, also conducted special surveys on enterprise reform, and on losses in large and medium-sized enterprises.

The official organizational chart of the NBS is incomplete. For example, it does not include the “China Market Information Survey Association” (*Zhongguo shichang xinxi diaochaye xiehui*) founded in early 2004 (although a news item on this association is listed on the NBS website).<sup>42</sup> This association is a social organization (*shehui tuanti*) approved by the State Council and registered with the Civil Affairs Ministry. A deputy-commissioner of the NBS is association head and a deputy-head of the NBS statistical information service center is the association secretary; the NBS commissioner is honorary chairman. Its tasks are to develop survey policies, to set standards for survey work, to supervise survey work, to provide education, and to serve as a bridge to similar institutions and associations in the West. Presumably, membership will be de facto compulsory for all organizations conducting survey work in China, and will come with regular fees. Similar associations will probably appear at the provincial level.

The association could fall into a typical pattern in China whereby government departments with excessive staff and short of funding create new organizations outside the official government realm to absorb excessive staff and to serve as (fee-charging) intermediaries between the government department and the public. In the best of circumstances, these intermediaries serve as facilitators, while in the worst of circumstances, they create a new level of fee-charging non-government institutions with quasi-government powers.

Another example of an NBS institution not included in the official organizational chart is the “China State of the Nation Research Society” (*Zhongguo guoqing yanjiuhui*), another social organization under the NBS. On 30 March 2004 the NBS ordered a temporary halt to all activities of this society and its subordinate institutions due to, as the NBS claimed, poor internal administration and illegal activities by some outside elements under the name of this society or its subordinate institutions.<sup>43</sup>

At least in 1997, the NBS also ran two companies, the China Huaxin Information Technology Development Company (*Zhongguo huaxin xinxi jishu kaifa gongsi*) and the China Statistical Consulting Company, Ltd. (*Zhongguo tongji zixun youxian gongsi*).<sup>44</sup> The statistical *xitong* also runs a statistics college in Xi’an Municipality (in Shaanxi Province) and a statistics school in Sichuan Province.<sup>45</sup>

#### *Interaction between the statistical xitong and other government departments*

For the compilation of many statistics the NBS relies on other central government departments, such as the line ministries or their successors. This is largely a historical legacy. As long as state-owned enterprises and urban collective-owned enterprises are organized under line ministries extending from central to local tiers, the respective line ministry or its successor is likely to collect data on its enterprises.<sup>46</sup> The internal statistical division of a line ministry directly corresponds with the relevant division of the NBS. In the case of industry, for example, statistical departments in industry-related line ministries and state companies (conglomerates) communicate with the NBS Division for Industrial and Transport Statistics. Dozens of other government departments contribute to, especially, national accounts data (including GDP).<sup>47</sup> At the central level, the NBS probably receives data from approximately one hundred different government departments, central companies and conglomerates (former line ministries), or associations.

The reliability of data obtained from other government departments in the collection of statistics varies from sector to sector. One of the most problematic is rural industry, where the Township Enterprise Bureau of the Agriculture Ministry collects detailed data on township-run and village-run collective

enterprises, and basic statistics on co-operative enterprises, private enterprises and individual-owned enterprises. The NBS assists the Township Enterprise Bureau in the design of the statistical reporting forms, the Township Enterprise Bureau collects the data and makes some of them regularly available to the NBS. The NBS relies on the Township Enterprise Bureau's data and has no independent regular reporting system for rural enterprises. The industrial census of 1995 revealed large over-reporting by township and village enterprises, but the NBS in the subsequent years continued to have no means to make meaningful adjustments to the Township Enterprise Bureau data.<sup>48</sup>

Another extreme example for the reliance of the NBS on other government departments is the sector transport and communication. Gross output value data in the production approach to the calculation of value-added are collected by the Railway Ministry (Bureau), the Communication (Transportation) Ministry (Bureau), the Aviation Bureau, the Post and Telecommunications Ministry (Bureau), the Township Enterprise Bureau of the Agriculture Ministry, and the Industry and Transport Department within the Finance Ministry. These departments do not cover the relevant sub-sectors in their completeness.<sup>49</sup> In the calculation of GDP, gross output value data on road and water transportation by transport and communication enterprises which are not part of these departments are guesstimated in the GDP calculations.

Although the NBS relies on other central government departments for much of the data it reports, its authority vis-à-vis other government departments is weak. The NBS as a bureau directly under the State Council (government) is half a rank below that of central government ministries and provincial governments, with no authority to issue binding orders to either of the two. Consequently, the NBS according to the Statistics Law is only responsible for "directing and coordinating" the nationwide statistical work rather than for conducting it.

What the NBS has available are indirect channels through which to influence data compilation in other central government departments. Through its business guidance it can try to influence the work done in the internal statistical divisions of other central government departments. The NBS is in a stronger position when it comes to survey work conducted by other government departments. All statistical surveys conducted by central government departments or units under their jurisdiction must be reported to the NBS, and any survey that extends beyond the particular department requires NBS approval. As part of the approval/ reporting requirement, a copy of the survey report form must be submitted to the NBS. If the government department publishes any of its findings later, a copy of the published findings must be submitted to the NBS no later than 10 days after publication. (The same pattern of authority is repeated at the local level; for example, the provincial statistical bureau enjoys the same authority vis-à-vis other provincial government departments.) A separate set of regulations applies for surveys conducted by non-government units or foreign entities.<sup>50</sup>

At the central level, the NBS maintains a webpage where it lists approved surveys and (department-internal) surveys reported to the NBS by approximately 100 other government departments. Surveys in this context include regular reporting within the government department. The webpage gives the appearance of complete coverage of all surveys, but either the coverage is incomplete, or some government departments do not report (or seek approval) for all their statistical work. For example, the State Asset Supervision and Administration Commission requires that all state-owned and state-controlled enterprises file regular, detailed financial reports; yet a record of NBS approval for these reports does not appear on the NBS webpage.<sup>51</sup>

One further sign of the relative weakness of the NBS vis-à-vis other government departments is that what could be considered part of the NBS' core work has been appropriated by China's central bank. Thus, the People's Bank of China in its quarterly statistical bulletin reports aggregate quarterly data on 5000 main industrial enterprises; these data include detailed financial indicators as well as the results of a survey

on business conditions. They are collected by the People's Bank of China, with approval of the NBS, even though the NBS itself has an administrative facility in charge of economic monitoring and economic analysis (with its Chinese name referring to "business conditions").<sup>52</sup>

Finally, even though the NBS is an organization directly under the State Council, de facto, it may well be subject to some form of guidance by the State Development and Reform Commission (the former State Planning Commission, or State Development and Planning Commission), which is the major administrative organ in charge of economic matters. For example, the NBS reports in the International Monetary Fund's General Data Dissemination Standard (GDDS) metadata homepages that access to the data produced and disseminated by the NBS before release is provided to senior officials of the State Development and Planning Commission, as well as to the (by now defunct and partly integrated into the State Development and Reform Commission) State Economic and Trade Commission; for official work, staff of the State Development and Planning Commission also have access to the tabulated data.<sup>53</sup>

### *Changes in data collection methods*

Traditionally, line ministries collected data on their enterprises in the four non-agricultural production sectors, and the Agriculture Ministry collected agricultural data through the communes. All data collection occurred through reporting forms. The NBS served as little more than a repository of the data collected by different line ministries. With the introduction of the household responsibility system in agriculture at the beginning of the reform period and the dozen-fold increase in enterprises across all non-agricultural sectors as well as the extension of statistical work to previously excluded parts of the tertiary sector, the traditional reporting system became ever less able to capture a reliable picture of China's economy.

In 1996, the revised Statistics Law (NPC, 15 May 1996) officially laid the foundation for major revisions to data compilation methods in that it stipulates that censuses and surveys are to provide the core statistical data, while regular reporting only plays a supplementary role: "Statistical investigation should collect and compile statistical material through regular censuses as the basis [*jichu*], routine sample surveys as mainstay [*zhuti*], and unavoidable [*biyao de*] statistical reporting, key [*zhongdian*] investigations, and comprehensive analysis as supplement [*buchong*]" (Art. 10).<sup>54</sup>

### *Regular reporting system*

The regular reporting system exists across all sectors of China's economy, but is most developed in the industrial sector. The traditional direct reporting system in industry covered all industrial enterprises with independent accounting system at township level and above. In 1998, the NBS reclassified the group of directly reporting industrial enterprises as all state-owned industrial enterprises plus all non-state industrial enterprises with independent accounting system and annual sales revenue in excess of 5m yuan RMB.<sup>55</sup> The NBS thereby reduced by two thirds the number of reporting enterprises, while keeping the aggregate output volume covered approximately constant. Exempting small enterprises from the reporting requirement implied an unambiguous improvement in data quality, since small enterprises provided data of notoriously poor quality.

Since 1999, the monthly statistical reports of the directly reporting industrial enterprises are sent to the local statistical office, verified by the provincial statistical bureau, and then reported to the NBS *both* individually and as provincial aggregates. In addition, 5000 selected key industrial enterprises since April 2001 directly report their economic data to the NBS via the internet.<sup>56</sup> The first reform reduces the potential for data manipulation at lower-level tier statistical departments, while the second reform eliminates the possibility of data manipulation during the transfer of data from the enterprise to the NBS altogether.

The recent reclassification of the directly reporting industrial enterprises and the selection of 5000 industrial enterprises which submit their data directly to the NBS suggest that the NBS is limiting direct reporting to those instances where direct reporting yields accurate data, while sample surveys capture the large group of industrial enterprises not reporting regularly to the statistical authority. Industrial statistics thus moved from an all-comprehensive reporting system with guesstimates for an increasing share of industry to a two-class data compilation system with regular direct reporting for a small group of industrial enterprises which have accurate data and account for approximately half of industrial output, plus sample surveys to cover all other industrial enterprises.

### *Censuses*

The new “basis” of data collection since 1996 is censuses. China currently conducts five censuses, of which four every ten years, and one every five years: population census (in years with last digit 0), tertiary sector census (in years with last digit 3), industrial census (in years with last digit 5), agricultural census (in years with last digit 7), census of basic statistical units (in years with last digit 1 or 6). The tertiary sector census of 1993 led to large upward revisions to tertiary sector value-added and thus GDP, including retrospective revisions to data for 1978 through 1993. The industrial census of 1995 with the ensuing up to 20 percent retrospective downward corrections to the gross output value of non-state industrial enterprises for the years 1991 through 1994, on the other hand, rang warning bells about output exaggeration but did not lead to retrospective revisions to GDP statistics. The census of basic statistical units is crucial for surveys in that every five years it establishes a basic sampling frame for surveys, much needed given the rapidly changing nature of China’s economy, with a fair number of enterprise mergers, exits, and new entries; a proper sampling frame is a pre-condition for meaningful survey results.

A one-time “economic census” of industry and the tertiary sector is conducted in 2004; it incorporates the 2003 tertiary sector census which was postponed due to SARS. The NBS expects the need for upward revisions to GDP after the economic census due to suspected current underestimation of tertiary sector value-added. It may also use this opportunity to introduce numerous (individually minor) innovations to China’s GDP calculation.

### *Surveys*

Table 3 summarizes the range of surveys organized by predominantly the survey teams. Except the last survey in the table (which is unlikely to be organized by a survey team), surveys are not necessarily based on random samples. Most surveys involve some form of stratification, but the choice of samples within strata is usually not specified. Detailed information on surveys are scarce, especially on those introduced only recently, such as in industry and in commerce and catering.<sup>57</sup> By mid-2001, an employee of the NBS claimed that steady progress had been made in the use of sample surveys of small industrial enterprises (those not reporting directly to the statistical departments) for the compilation of GDP statistics, while sample surveys of the wholesale and retail trade as well as the catering sector after four years of hard work are finally in place across all 31 provinces.<sup>58</sup> One complication may well be that tertiary sector surveys tend to involve a number of other government departments, i.e., cannot simply be implemented by the NBS on its own.<sup>59</sup>

Apart from these regular (annual, quarterly, or monthly) surveys, the survey teams may also be asked by the CCPCC or the State Council for whatever additional data are currently needed.<sup>60</sup> For example, the NBS commissioner in 1997 claimed that 60% of all statistical information going to the general offices of the CCPCC and the State Council was compiled by survey teams, presumably on special orders, which would imply that the data regularly compiled through the censuses, reporting and survey system reflect only 40% of the statistical information going to the top policy makers in China. In other words, Chinese policy makers may have qualitatively different data from the public in those areas in which the NBS

publishes data, apart from additional data in areas in which the NBS does not make information publicly available. Data collected by the survey teams are likely to also play a major role in the NBS' adjustment of provincial GDP figures when compiling nationwide aggregate GDP data.

### **Part Three: Evaluation of Institutional Organization and Data Compilation Methods**

This part evaluates the current institutional organization of statistical data compilation and the methods of data collection in China, where relevant in light of the data problems noted in the first part.

#### *Historical legacies*

China's institutional organization of statistical data compilation has been transformed dramatically in the reform period, especially since the early 1990s. Nevertheless, some features of the pre-reform institutional arrangements persist. These include the involvement of a large number of other government departments in the collection of statistical data, the predominance of report forms, the poor coverage of tertiary sector activities, and the duplication of data reporting tasks and reporting channels.

#### *Continued role for government departments other than the NBS in data compilation*

As a legacy of the planning system, a large number of government departments other than the NBS are collecting a vast amount of data, with a range probably exceeding data collection in developed economies. These data are of mixed quality. Most are likely to be of good quality since they form the basis for planning in these other government departments. But coverage is often limited to the specific tasks of the government department. For example, the Communications (Transport) Ministry may only collect data on freight transportation within its *xitong*, leaving the NBS to make guesstimates on total freight transportation in the country without necessarily having a (NBS) system in place to properly do so.

In other words, the choice, quality and coverage of specific statistics are dictated by the relevant government departments' data needs and departmental reach. The low rank of the NBS at deputy-ministry level in comparison to other central government departments combined with the limitation to business guidance of the NBS over internal statistical divisions in other central government departments imply that the NBS does not have the authority to impose a unified framework within which data are to be collected across all government departments. In many instances, the NBS is likely to know little about how exactly the data were collected.

As these other government departments are abolished by folding them into yet other government departments or by turning them into companies or associations, their data needs change, and the data received by the NBS then change in terms of coverage of basic reporting units, variables on which data are reported, or data quality. Even minor changes in the tasks of a government department may lead to changes in its data collection. Budget cuts may reduce departmental efforts at data collection.

Other government departments matter for the conduct of censuses (and often also of sample surveys). Each census routinely involves a host of other government departments, ranging from the fiscal departments to line ministries at each level of government. On the one hand, this involvement by numerous other government departments may improve the quality of the statistics collected in that they provide access to reporting units if not the necessary weight for the census to be taken seriously by the reporting units. On the other hand, the amount of coordination needed, and disagreements between central and local governments and their departments about who pays what, hampers the implementation of censuses. Censuses are usually regarded as providing high-quality data. But in the case of the population censuses, consistency checks are possible over time; these raise severe questions about data quality.<sup>61</sup>

The low rank of the NBS may also prevent it from launching innovations in data collection. For example, the NBS appears to make no use of tax bureau data; the tax bureau belongs to the tax *xitong*, which in turn is associated with the fiscal *xitong*. Tax bureau data could be particularly helpful in the case of small enterprises on which the NBS has little reliable data. On the other hand, tax compliance in China may be so low that the tax bureau data are of little use.<sup>62</sup>

#### *Report forms and tertiary sector data*

It is only since the passing of the 1996 revised Statistics Law that the focus is gradually shifting from regular reporting through report forms to surveys. Report forms still play a major role in many economic sectors, and are likely to continue to do so in the future. For example, in industry, the above-norm enterprises regularly report to the statistical authority, and these data are likely to be of high quality. The intention is to capture the below-norm enterprises primarily through surveys, and in industry these NBS sample surveys are in the process of becoming well established.

In the tertiary sector, sample surveys are still at an early development stage. The difficulties to collect accurate data in some tertiary sectors are exacerbated by the fact that the NBS cannot rely on data collected by other government departments (there are often none, or none modeled on line ministries), and that the rank of the NBS may be too low for it to effectively collect high-quality data. One example is the real estate sector; there exists no direct central government department with an interest in collecting detailed data on these units. The large differences between the sum of locally reported tertiary-sector value-added and the nationwide aggregate figures compiled by the NBS attest to the continued difficulty of measuring tertiary sector value-added (Table 2). The 2004 economic census may yet provide a benchmark for the design of future tertiary sector value-added measurement.

#### *Duplication of data reporting and reporting channels*

A side-effect of China's pre-reform statistical system as well as of the development of a new statistical system is the frequent duplication of statistical work. For example, some basic statistical reporting units (such as enterprises) report their data to their superordinate government department which passes them on to the next higher level within their particular *xitong*; the central government department of the *xitong* then may report some of the data to the NBS. Other basic statistical reporting units report to the local statistical authority. Yet others report to both, the superordinate government department and the local statistical authority.<sup>63</sup> The outcome is a multitude of reporting tasks and reporting channels. The NBS may receive statistics on the same set of enterprises from a central government department as well as from all provincial statistical offices; after the many layers of transmission, the two sets of data are probably no longer identical.

Many statistics, furthermore, are collected independently by the statistical authority and by other government departments, i.e., the reporting unit does not send one report form to two or more institutions, but the reporting unit is approached independently by the statistical bureau (or even statistical bureaus at different government levels) as well as various government departments (only one of which may be the superordinate government department of the *xitong* to which the reporting unit belongs) with separate requests for data.<sup>64</sup> As a consequence, reporting units are overstretched and have little interest in conscientiously fulfilling reporting tasks. The remnants of the pre-reform planning system and the continued strong bureaucratic involvement in the economy lead to what appears a higher data volume in China than in other economies. In contrast, the Statistics Law (Art. 10) stresses the need to severely limit regular reporting tasks for basic reporting units and to rely as much as possible on sample surveys, focused (*zhongdian*) surveys, and administrative records.

### *Central-local complications*

The over time increasing discrepancy between the sum of provincial GDP and nationwide aggregate GDP reveals the margin of error inherent in official data. But it also attests to the willingness of the NBS to innovate, in that the lack of discrepancy in the years before 1997 is likely to reflect the inability of the NBS at that time to calculate GDP independently of provincial data, rather than a higher degree of accuracy in the earlier years. The willingness of the NBS as well as of local statistical bureaus to publish their own data, even if in contradiction to the other party's estimates, is a welcome change from the uniformity usually imposed in a centralized socialist system.

On the one hand, the discrepancy reflects the fact that local statistical bureaus even in business matters are more likely to listen to the local government than to the NBS. On the other hand, it also reveals the extent to which China today has, de facto, two statistical systems, a central one and a provincial one. The NBS in the calculation of nationwide GDP primarily relies on report forms from directly reporting (above-norm) enterprises in all economic sectors and on central sample surveys otherwise. The report forms are mostly collected locally, but the data on each enterprise individually are passed on to the NBS, i.e., aggregation can occur at the NBS itself. Unless local statistical bureaus flagrantly falsify individual enterprises' reports, which is unlikely, and unless enterprises mis-report data, these data are as good as the accounting system within the enterprise. Surveys implemented by central survey teams then fill the gaps on the below-norm enterprises. Economy-wide, approximately one half of GDP is produced in directly reporting (above-norm) enterprises, and the other half in agriculture, below-norm enterprises, and administrative units/ facilities.

The central-local dichotomy is also apparent in the establishment of two separate survey team systems, one under the authority of the center, and the other under the authority of the province. While central and local survey teams may share information, and while central survey teams will probably never be able to operate perfectly independently of local statistical bureaus or other local government departments, in terms of formal appointment authority and funding the two systems are separate. This again raises questions about duplication: is there a need to have both a central and a local survey team in one county, or even a need to have just about every county in China covered by some survey team?

### *International Standards*

By international standards of statistical work, China scores well on some principles, but poorly on others. One standard are the ten fundamental principles of official statistics identified by the United Nations. Similar principles are incorporated in the General Data Dissemination Standard (GDSD) of the International Monetary Fund to which China subscribed on 1 March 2002.

Going through the ten fundamental principles of official statistics identified by the United Nations (Table 4), there is clearly room for improvement with respect to items (3) information on methods, (7) public availability of laws and regulations, and (8) coordination among statistical agencies. The issue of coordination among the NBS and other central government departments as well as provincial statistical bureaus (principle 8) has already been discussed above. Regarding the public availability of laws, regulations, and measures under which the statistical system operates (principle 7), the Statistics Law and a very few NBS regulations have been published, but most rules and regulations regarding the statistical system are still considered internal.<sup>65</sup> Information on how the internal statistical divisions of other central government departments operate is not published. In the most recent years, some provinces have begun to publish the primary regulation covering statistical work at the provincial or municipal level, but all others of the presumably many hundred detailed regulations on the compilation of individual statistics are not available to the public.

Regarding information on methods (principle 3), the NBS, let alone local statistical bureaus, rarely presents comprehensive information on the sources, methods and procedures of the statistics. The NBS in the *Statistical Yearbook* offers approximately one page of general explanations for each section (such as the industry section) on how the data in the particular section were compiled; each section also comes with a list of variable definitions. Yet the general explanations are often sparse, changes in compilation method over time are rarely made explicit, and the list of definitions tends to be highly incomplete; all too often, explanations and definitions appear to have simply been copied from the previous issue of the *Statistical Yearbook* and can occasionally be shown to not match the data or variables they claim to explain or define. Some of the richest information on the sources, methods and procedures of Chinese statistics can today be found on the webpages of the International Monetary Fund's GDDS. The information provided on the NBS homepage is much scarcer, and there is no link on either the English or Chinese NBS homepage to the GDDS website.<sup>66</sup>

A similar picture emerges if China's statistical system is evaluated using the GDDS' four evaluation criteria (Table 5). (1) The coverage, periodicity, and timeliness of Chinese data is excellent, but questions about the reliability of these data loom large. (2) Data quality is the weakest element, with dissemination of documentation on methodology, sources, component details, and reconciliations being incomplete and possibly reflecting a desired rather than actual state. (3) In terms of integrity, while confidentiality of households and enterprises in household and enterprise surveys appears highly trustworthy, little is known about the terms and conditions under which official statistics are produced. Internal government access to statistics is documented only in the GDDS, and even there probably not in full. Information about revisions is not provided reliably; information on revisions may disappear in later statistical publications even when the data which need explanation are reproduced. (4) The public has relatively ready and equal access to some data, but a large volume of data is collected only for government-internal use.

### ***Political imperatives***

The fact that Chinese statistics fare poorly when evaluated in light of information on methods, public availability of laws and regulations, or of data quality can to a large extent be attributed to political imperatives.

### ***Professionalism and. Party primacy***

The Statistics Law states that "statistical personnel must seek truth from the facts, strictly abide by professional standards [*daode*], and have the necessary professional knowledge that qualifies them to do statistical work;" and "the leaders of localities, government departments, or other units may not order or ask statistical departments and statistical personnel to change or falsify statistical data." (NPC, 15 May 1996, Art. 24 and 7) Yet the rule of law may have to defer to Party primacy. A NBS "work regulation" of 16 November 1995 explicitly states that the NBS is to implement "important decisions and instructions of the Chinese Communist Party Central Committee and the State Council."

Zhang Sai (2001), NBS commissioner from 1984 through 1997, in the context of discussing the tasks of the statistical bureau vs. that of the statistical divisions of other government departments minces no words about the tasks and the responsibilities of the statistical *xitong*: "the government statistical organization primarily serves the needs of macroeconomic decision-making of Party and government leaders at each administrative level, and is responsible to the Party and government leaders at each administrative level" (p. 319). Not only is the statistical *xitong* at the service of Party and government leaders, but this statement also implies that the NBS does not primarily serve the public.

Indeed, the Statistics Law lists as "fundamental task of statistical work" to conduct statistical examination of the implementation of the national economic and social development plan, to analyze the

statistics, to provide statistical material and statistical advice and suggestions, and to supervise through the use of statistics (NPC, 15 May 1996, Art. 2). Providing the public with statistics is not a fundamental task, nor does the Statistics Law make it an explicit duty. The NBS and provincial statistical bureaus are to regularly publish statistical material “according to state regulations” (Art. 14); these state regulations appear to not be in the public realm. The implementation instructions expand slightly in that one of the NBS duties is to inspect, examine, administer, make public, and publish basic statistical material, and to regularly release the statistical report on national economic and social development (NBS, 15 June 2000, Art. 22); this compares to the duty of the NBS and all statistical bureau at county level and above to regularly and cost-free provide relevant and comprehensive statistical material to same-level government departments (Art. 9).

There are new developments, however. In May 2004, NBS Commissioner Li (2004) put the consolidation of statistical legislation forward as an important objective for Chinese statistics. This includes raising public awareness of statistical laws and the improvement of law enforcement. For example, the NBS announced the launching of a publicity campaign, and training on statistical laws and regulation for statisticians.

#### *Limitations to statistical reporting and accountability*

One consequence of China’s political system is that some data invariably remain of limited quality and that the NBS does not have the authority to admit this is the case. For example, data on official government revenues often do not include the extra-budgetary funds of government departments, and never include the “little gold storage” (*xiao jinku*) of these departments. These funds are obtained through a wide variety of channels, ranging from various fees, often illegal, to dubious land transactions. Compared to the official government revenues, the undocumented funds could be of considerable size, perhaps even a similar size. The discrepancy of the sum of government consumption expenditures across provinces from the nationwide figure (in 2002, the first is 31.7% higher, see Table 2) may reflect some of these discrepancies. Data on government revenues are collected by the fiscal departments. The NBS has no authority to collect these data, or to explain them.

Even when it comes to sensitive data compiled by the NBS itself, such as unemployment data, the NBS is constrained by political imperatives. This does not imply that the data it reports are false, but it implies that it is crucial to understand the fine print on, for example, coverage, except that this fine print often is not on offer. (An economically meaningful measure of unemployment is not provided to the public.) Other issues are the size of the black economy, or the extent of smuggling. The latter, for example, can wreak havoc on the meaning of the official import-export figures and create big inconsistencies between production-income approach GDP and expenditure approach GDP. But the NBS has no authority to publish data on these politically sensitive topics. As a consequence, it does not have the authority to explain why its data do not add up. In all likelihood, the NBS has even compiled data on these issues in internal survey reports for the Party and government leadership, and it may even use this information to (properly) adjust its GDP data, but then it cannot (is not allowed to) explain to the public how its GDP data are derived (and adjusted).

In other words, given these constraints, the NBS is rarely able to fully explain particular statistics to the public. Individuals within the NBS have made repeated and highly laudable efforts to explain their statistics to the public, including to international organizations, and may be interested in sharing their experiences and in learning from other countries’ experiences, but they always remain constrained by domestic political considerations. This also implies that nobody, except those individuals within the NBS who actually manipulate the data, has a chance to fully understand Chinese statistics (and the understanding of each of the specific individuals in the NBS is likely to be limited to their narrow specialization).

*Institutional constraints*

Some institutional constraints are directly built into the statistical system. At the local level, key data compiled by the local statistical bureau, such as GDP data, need approval by a local government leader before they can be reported up to the next higher-level statistical bureau.<sup>67</sup> This need for government leader approval of statistical data, casually revealed in an article on the discrepancy between local and central GDP data carried by the NBS magazine *Zhongguo Tongji*, calls into question the relevance of the published formal rules and regulations that include such statements as Article 7 of the Statistics Law, which requires that “the leaders of localities, government departments, or other units may not order or ask statistical departments and statistical personnel to change or falsify statistical data.” While there is no written evidence of a similar approval pattern at the central level, the fact that the State Development and Reform Commission has access to NBS data before publication (and presumably the same holds for the State Council) suggests that regular channels for political interference are plentiful.

The local government leader’s approval authority of key data as well as appointment authority over leading local statistics officials create incentive mechanisms for local statistics officials that potentially conflict with professional statistical reporting. If a local government leader were to, in violation of the Statistics Law, “request” higher economic growth rates (perhaps to advance his or her promotion), the Statistics Law requires the local statistical bureau to refuse to cooperate with its immediate superior (the local government leader), and there the matter ends (Art. 7). Such a refusal is unrealistic. The local statistical bureau could possibly report the local government leader to the next higher-level statistical bureau. But the next higher-level statistical bureau has no authority over the local government. It could inform the Party disciplinary commission, which, in worst-case scenarios, may act.<sup>68</sup> (It is probably detrimental to the career of an official of a lower-level statistical bureau to contact the local Party discipline commission, since the local government leader is likely to be the deputy head of the local Party discipline commission.) In the end, statistics officials are unlikely to report on their government superiors since the chances of success are minimal and the likelihood of reprisals from these superiors is high.<sup>69</sup>

According to the Statistics Law, the public is also supposed to supervise statistical work. “Statistical work should receive supervision by society and the public” (Art. 6). This is unrealistic as long as the public is not given an opportunity to find out about the rules for statistical work.

National inspections were conducted in cooperation of the NBS with the Ministry of Supervision and the Bureau of Legislative Affairs of the State Council in 1987, 1989, 1994, 1997, and 2001. The latest inspection revealed 60,000 violations of the Statistics Law and led to punishment in 20,000 cases. Misreporting, predominantly by enterprises, accounted for almost 60% of the violations, with other violations consisting of enterprise refusals to report data, or late reporting—not of misbehavior by statistics officials.<sup>70</sup> What may be under proper supervision, thus, is data reporting from basic reporting units to the statistical authority. No information about internal violations, i.e., violations within the statistical *xitong*, are available, even though statistical work of government departments was also supposed to be investigated. Perhaps the operation of the statistical system in China is as much scrutinized as are the reporting units, but, then, neither the investigations nor their results are made public. The little evidence that can be gleaned from reports in various sources suggests that regular supervision of statistical work in government departments may not happen at all, while the periodic inspection efforts, usually limited to exemplary inspections of selected work units, could be toothless.<sup>71</sup>

*NBS-internal issues*

The operations of the NBS itself are not without problems. Coordination among different administrative divisions within the NBS or even among individuals within one division appears poor. One

example is coordination in the publication of statistics. The Division for Industrial and Transport Statistics of the NBS compiles the industry section of the *Statistical Yearbook*; in two separate tables it reports first employment and then output, balance sheet, and profit and loss account data of the directly reporting industrial enterprises. The labor data cover the formal category of “staff and workers” and, in the absence of any explanation, it appears as if this is total employment in the directly reporting industrial enterprises on which all the other data are reported. But the *Industry Yearbook* reveals that “total employment” in these industrial enterprises (on which the *Industry Yearbook* reports output, balance sheet, and profit and loss account data identical to those in the *Statistical Yearbook*) is about 50% higher than the number of staff and workers in the *Statistical Yearbook*.<sup>72</sup>

According to high-level officials of the NBS, the survey team system is costly but has not become fully effective, largely because central survey teams are not free from influence or interference by the local statistical bureaus. (Central survey teams usually rely on local governments for help in such everyday matters as, for example, housing, and they may also share offices with local survey teams or the local statistical bureau.) The division of labor between survey teams and regular administrative divisions of the statistical *xitong* is also not clear.<sup>73</sup>

The distinction between administrative divisions and administrative facilities appears at times arbitrary, or perhaps the result of government regulations limiting the number of divisions and personnel in the administrative division category. The borderline between the NBS as a provider of official statistics and the NBS as a commercial undertaking is very fine. On the one hand, major national data and the *Statistical Yearbook* issues of recent years are reproduced at the NBS website free of charge (although the website is not interactive). On the other hand, for more detailed statistics, the NBS sells about a dozen different statistical compendia every year, apart from individual statistical yearbooks of each province and some municipalities. Highly specialized data are sold at an additional, sometimes very high premium.<sup>74</sup> Some data, such as selected household survey data appear to be purchasable at a price negotiated privately with the NBS; the NBS and local statistical bureaus are also willing to conduct surveys on behalf of customers, or to provide selected data as requested by customers, with prices negotiated individually. The NBS vehicle in these latter instances tends to be the China statistical information services center.

It is difficult to judge the extent to which this additional income compensates for tight budget appropriations and thus helps in the production of higher-quality or more statistics. Quite possibly, the additional income flows into off-budget undertakings of the NBS and the local statistical bureaus, ranging from salaries of staff that were supposed to be cut but instead shunted off into administrative facilities to the provision of housing, social services, and bonuses to statistical bureau employees.

Zhang Sai, former NBS commissioner, writing in 2001 warns against an impending personnel crisis in the statistical system. Of the 90,000 statistical personnel, only 3% have tertiary education, and only 20% have an upper-level secondary education or tertiary education.<sup>75</sup> A total of 90% are below age 45, and of these, those aged 35 through 45 constitute the backbone force. These are the upcoming leaders in the statistical system, but this age group is also the lost generation of the Cultural Revolution. Zhang Sai sees it as urgent to improve their statistics education. Since they are needed at work, learning would have to happen through correspondence courses.

### ***Chinese reform proposals for the statistical system***

#### *Past proposals*

Reform of China’s statistical system has been under discussion for some time, usually with a focus on how to strengthen the NBS’ authority. Proposals include the switch to direct central leadership over local statistical departments (*chuishih*), the permanent dispatch of supervisors by the NBS to local statistical

departments, and the establishment of a double system where provincial statistical bureaus as well as the NBS each have their own lower-level tier statistical departments.<sup>76</sup> These proposals all appear inferior to the current arrangements. Due to the focus of governments at all levels on economic development and due to the evaluation of cadres according to their economic achievements, local governments have their own statistical needs and thus need some control over local statistical departments. Direct central leadership would also imply that all costs of maintaining the statistical system have to be born by the center. Dispatched central supervisors are likely to be co-opted by the locality over time. A double system appears wasteful of resources.

### *Recent proposals*

More recently, and following a call by Premier Wen Jiabao in November 2003 to improve the statistical system and methodology, Commissioner Li (2004) stated several important development goals: reforming the management system, improving the operation mechanism and enhancing the legal framework and more generally to “establish a modern official statistical system [...] to provide efficient and quality statistical services to the governments, the public and the international community”. This orientation towards end-users is new and should inform the choice of data on which the NBS should focus in its own work, which may have implications for the choice of administrative divisions within the NBS and the type of survey work to be done.

Li (2004) also announced a reform of the management system of surveys to make the NBS more independent in conducting surveys. There would also be more direct administration of higher-level statistical offices over those at local level. It is also planned that NBS will provide guidance and coordination of statistical work that is carried out in ministries: for example, surveys conducted by ministries will have to be reviewed by NBS. Finally, measures are announced to promote the role of non-governmental survey institutions.

The other cornerstones of the 2004 strategy are the reform of statistical methodology and standards, the improvement of national accounts statistics, the development of the IT system for statistics, the consolidation of statistical legislation and the improvement of statistical services, including the promotion of wider public access to statistical information.

### **Conclusions and recommendations**

Chinese statistics have come a long way from a pure reporting system in a centrally-planned economy to a system that increasingly relies on surveys and modern statistical techniques to service users, be they government or the public at large. Nonetheless, many challenges remain. The present work has reviewed some of the central aspects of the institutional arrangements in Chinese statistics and the following key points have emerged.

First, there is still a legacy of reporting via ministries that limits the scope of the data collected and that limits the influence that NBS should have on the conception and quality of data collections. The role of NBS in co-ordinating and reviewing statistics produced by ministries needs strengthening.

Second, complications persist between the central and the sub-national level of the statistical system. Often, local statistical offices are closer to local governments than to the NBS and this may create incentives that are not conducive to the compilation of high-quality statistical information. Stronger line structures between NBS and statistical offices at the local level and better enforcement of the statistical laws at all levels of the administration should help to advance on this matter. Alternatively, if the role of NBS vis-à-vis local statistical administrations cannot be strengthened, the NBS may consider minimising its reliance on local statistical bureaus or limit it to low-priority data.

Third, there is a need to establish functioning channels to address complaints against violations of the Statistics Law.

Fourth, there is a welcome but still sluggish move from enterprise reporting to survey techniques. Reporting requirements still appear very large both in the number of institutions that can order a reporting unit to report, and in the volume of data collected. The views of the reporting units on this matter and their compliance costs are not known. A systematic study would be helpful, and if reporting requirements were indeed excessive, mechanisms to reduce them should be explored.

Fifth, recognition of the desirability of a user-orientation of statistics is only at its beginnings. Further steps need to be taken to focus not only on data that reflect government priorities. Consultation with the public (for example domestic and foreign business associations, academia and non-government organisations) would be desirable.

Sixth, further efforts should be made to enhance transparency about data collection methods, and statistical methodology in general. Not only information about methods and source, data itself should also become more accessible to a broad range of users, for example through user-friendly web-sites with readily available, up-to-date statistics.

Seventh, clear rules should be established on which data are available for the public for free and which data can be purchased through individual contact with the NBS. Transparent, or at least standardised pricing for the latter would be desirable.

## REFERENCES

Names which in the original are in Chinese characters are reported here in the order as in the original, i.e., last name first, followed by first name.

Adams, Gerard F., and Chen Yimin. "Skepticism about Chinese GDP Growth—the Chinese GDP Elasticity of Energy Consumption." *Journal of Economic and Social Measurement* 22, no. 4 (1996): 231-40.

*China Infobank*. Internet database with Chinese news and laws and regulations, at [www.chinainfobank.com](http://www.chinainfobank.com).

Dougherty, Sean. "The Reliability of Chinese Statistics." *China Online*, 1997; [http://www.chinaonline.com/refer/statistics/secure/us\\_prc.asp](http://www.chinaonline.com/refer/statistics/secure/us_prc.asp), accessed on 22 June 2004.

*Fujian shengzhi tongjizhi* (Fujian provincial almanac, statistics volume). Beijing: Fangzhi chubanshe, 2000.

*GDP 1952-1996. Zhongguo guonei shengchan zongzhi hesuan lishi ziliao (zhaiyao) 1952-1996* (Abstract of historical material on China's GDP 1952-1996). Beijing: Zhongguo tongji chubanshe, 1998.

He Keng and Zheng Jingping. *Zhongwai zhengfu tongji tizhi bijiao yanjiu* (A comparative study of the statistical system in China and abroad). Beijing: Zhongguo tongji chubanshe, 2001.

Holt, Tim. "The Fundamental Principles and the Impact of Using Statistics for Administrative Purposes." *Statistical Journal of the United Nations Economic Commission for Europe* 15, no. 3/4 (1998): 203-12.

Holz, Carsten A. "Institutional Constraints on the Quality of Statistics in a Developing and Transitional Economy: the Case of China." *China Information* 16, no 1 (2002): 25-67.

\_\_\_\_\_. "Fast, Clear and Accurate:" How Reliable Are Chinese Output and Economic Growth Statistics?" *The China Quarterly* 173 (March 2003): 122-63.

\_\_\_\_\_. "Deconstructing China's GDP Statistics." *China Economic Review* 15, no. 2 (2004a): 164-202.

\_\_\_\_\_. "China's Statistical System in Transition: Challenges, Data Problems, and Institutional Innovations." *Review of Income and Wealth* 50, no. 3 (Sept. 2004b): 381-409.

\_\_\_\_\_. "China's Reform Period Economic Growth: Why Angus Maddison Got It Wrong and What that Means." Mimeo, Hong Kong University of Science & Technology, 1 Dec. 2004(c).

Holz, Carsten A., and Yi-min Lin. "Pitfalls of China's Industrial Statistics: Inconsistencies and Specification Problems." *The China Review* 1, no. 1 (Fall 2001): 29-71.

Huenemann, Ralph W. "Are China's Recent Transport Statistics Plausible?" *China Economic Review* 12, no. 4 (2001): 368-72.

Keidel, Albert. "China's GDP Expenditure Accounts." *China Economic Review* 12, no. 4 (Dec. 2001): 355-67.

Klein, Lawrence R., and Suleyman Ozmuur. "The Estimation of China's Economic Growth Rate." Mimeo, Department of Economics, University of Pennsylvania, 2003.

Lardy, Nicholas. "Evaluating Economic Indicators in Post-WTO China." *Issues and Studies* 38/39, no. 4/38-1/39 (Dec. 2002/March 2003): 249-68.

Li Huicun and Mo Yueda. *Zhongguo tongjishi* (History of Chinese statistics). Beijing: Zhongguo tongji chubanshe, 1993.

Maddison, Angus. *Chinese Economic Performance in the Long Run*. Paris: Development Centre of the Organisation for Economic Co-operation and Development, 1998.

Meng Lian and Wang Xiaolu. "Dui zhongguo jingji zengzhang tongji shuju kexindu de guji" (An evaluation of the reliability of China's statistics on economic growth). *Jingji yanjiu*, no. 10 (Oct. 2000): 3-13.

NBS (National Bureau of Statistics).

1 March 1995. "Guojia tongjiju guanyu tongji bumen neibu shenji gongzuo guiding" (NBS regulation on internal auditing of statistical departments). In *China Infobank*.

16 November 1995. "Guojia tongjiju gongzuo guize (xiuding)" (NBS work regulation (revised)). In *Tongji gongzuo zhongyao wenjian xuanbian 1991-1995* (Selected important documents on statistical work 1991-1995), Beijing: Zhongguo tongji chubanshe, 1996, pp. 1450-6.

1997. *Zhongguo niandu guonei shengchan zongzhi jisuan fangfa* (Method of calculating China's annual GDP). Issued by the NBS National Income Accounts Division. Beijing: Zhongguo tongji chubanshe.

27 October 1999. "Bumen tongji diaocha xiangmu guanli zanxing banfa" (Temporary administrative measures for departmental statistical surveys). NBS decree no. 4 (1999). In *Zhonghua renmin gongheguo guowuyuan gongbao*, no. 967 (10 Feb. 2000): 36-9.

24 May 2000. "Guojia tongjiju guanyu jiaqiang tongji dengji guanli gongzuo de yijian" (NBS suggestions on strengthening the administration of statistical registration." In *Tongji gongzuo zhongyao wenjian xuanbian 1996-2000* (Selected important documents on statistical work 1996-2000), Beijing: Zhongguo tongji chubanshe, 2001, pp. 839-41.

2 June 2000. "Zhonghua renmin gongheguo tongji fa shishi xize" (Detailed implementation instructions for the PRC Statistics Law). Revision of original regulation of 19 January 1987, approved by the State Council. In *China Infobank*.

NPC (National People's Congress).

8 December 1983, "Zhonghua renmin gongheguo tongji fa" (PRC Statistics Law). In *China Infobank*.

15 May 1996. “Zhonghua renmin gongheguo tongji fa” (PRC Statistics Law). Revision of original 8 December 1983 PRC Statistics Law. In *China Infobank*.

OECD (Organization for Economic Co-operation and Development). *National Accounts for China: Sources and Methods*. Paris: OECD, 2000.

Pan Zhenwen, and An Yuli. “Yi wan yi de chaju cong he er lai: dui guojiaji, shengji hesuan shuju chaju de sikao” (Where is the one-trillion difference from? Some thoughts on the difference between national and provincial accounts data). *Zhongguo tongji*, no. 11 (Nov. 2003): 8f.

Rawski, Thomas G. “China by the Numbers: How Reform Affected China’s Economic Statistics.” *China Perspectives*, no. 33 (Jan./Feb. 2001a): 25-34.

\_\_\_\_\_. “What’s Happening to China’s GDP Statistics.” *China Economic Review* 12, no. 4 (Dec. 2001b): 347-54.

\_\_\_\_\_. “Economic Issues and the Future of China.” Mimeo, University of Pittsburgh, 2003(a).

\_\_\_\_\_. “SARS and China’s Economy.” Mimeo, University of Pittsburgh, 2003(b).

Rawski, Thomas G., and Xiao Wei. “Roundtable on Chinese Economic Statistics: Introduction.” *China Economic Review* 12, no. 4 (Dec. 2001): 298-302.

Shaanxi Government.

11 July 2002. Shaanxi sheng renmin zhengfu bangongting zhuanfa sheng tongjiju guanyu kaizhan quansheng xinxing chanye diaocha yijian de tongzhi (Shaanxi Province Government Office circular passing on the suggestions of the provincial statistical bureau on starting a province-wide emerging-sectors survey). In *China Infobank*.

*Shaanxi Yearbook. Shanxi nianjian* (Shaanxi Yearbook). Xi’an: Shaanxi nianjian chubanshe, various years.

State Council. *Zhongyang zhengfu zuzhi jigou* (Central government organizations and institutions). Issued by the State Council General Office Secretariat and the Comprehensive Division of the Chinese Communist Party Central Committee Institutional Design Committee’s General Office. Beijing: Gaige chubanshe, 1998.

*Statistical Work Yearbook. Zhongguo tongji gongzuo nianjian* (Statistical Work Yearbook of China). Beijing: Zhongguo tongji chubanshe, various issues.

*Statistical Yearbook. Zhongguo tongji nianjian* (Statistical Yearbook of China). Beijing: Zhongguo tongji chubanshe, various years.

Wang Qi. *Xinbian tongji gongzuo shiwu quanshu* (New compendium on statistical work). Beijing: Zhongguo tongji chubanshe, 2000.

Xi’an Government.

11 April 2001. “Xi’an shi renmin zhengfu guanyu quxian an zaidi yuanze zuohao tongji gongzuo de tongzhi” (Xi’an municipality government circular on well performing statistical work according to the county and district geographical principle). *Xi’an zhengbao*, no. 8-9: 31.

10 Sept. 2001. “Xi’an shi renmin zhengfu bangongting zhuanfa shi tongjiju guanyu xi’an shi zaidi tongji gaige shishi yijian de tongzhi” (Circular of the general office of the Xi’an municipal government passing on the implementing suggestions of the municipal statistical bureau regarding the Xi’an municipal geographical statistics reform). *Xi’an zhengbao*, no. 18: 17f.

28 May 2002. “Xi’an shi renmin zhengfu bangongting guanyu yinfa xi’an shi tongjiju zhineng peizhi neishe jigou he renyuan bianzhi guiding de tongzhi” (Circular of the general office of the Xi’an municipal government passing on the regulation on the tasks, internal institutions, and staff of the Xi’an Municipal statistical bureau). *Xi’an zhengbao*, no. 15: 16-18.

*Xi’an Yearbook. Xi’an nianjian* (Xi’an Yearbook). Xi’an: Xi’an chubanshe, various years.

Xu Xianchun. “Shijie yinhang gaogu zhongguo GDP shuju” (The World Bank estimates China’s GDP to be higher). *Zhongguo guoqing guoli*, no. 1 (Jan. 1999a): 7-10.

\_\_\_\_\_. “Shijie yinhang dui zhongguo guanfang GDP shuju de tiaozheng he chongxin renke” (The World Bank’s adjustments to China’s official GDP data, and later acceptance). *Jingji yanjiu*, no. 6 (June 1999b): 52-8.

\_\_\_\_\_. “Zhongguo guonei shengchan zongzhi hesuan zhong cunzai de ruogan wenti yanjiu” (Some problems in the calculation of China’s GDP). *Jingji yanjiu*, no. 2 (Feb. 2000): 10-16.

Zhang Sai, “Guanyu ‘Zhonghua renmin gongheguo tongjifa xiuzhengan (zao’an)’ de shuoming” (Explanation of the (draft) scheduled revisions to the PRC Statistics Law), 23 August 1995, in *China Infobank*.

\_\_\_\_\_. *Zhongguo tongji gaige fazhan zhanlue de lilun yu shijian* (Theory and practice of China’s statistical system development strategy). Beijing: Zhongguo tongji chubanshe, 2001.

*Zhongguo tongji* (China Statistics). Monthly publication of the National Bureau of Statistics.

## TABLES AND FIGURES

Table 1 Real GDP Growth Rates

	Official real GDP growth rate (production-income approach)			Keidel's
	as first published	as reported in <i>Statistical Yearbook 2003</i>	calculated based on revised nominal GDP growth rate assuming original implicit GDP deflator was correct	real GDP growth rate (expenditure approach)
1990	3.9	3.8	(2.7)	6.8
1991	8.0	9.2	(12.2)	10.1
1992	13.2	14.2	(17.2)	10.9
1993	13.4	13.5	(14.5)	10.7
1994	11.8	12.6	(15.8)	14.6
1995	10.5	10.5	10.6	11.4
1996	9.6	9.6	8.5	9.8
1997	8.8	8.8	8.3	7.3
1998	7.8	7.8	6.4	7.2
1999	7.1	7.1	(7.5)	4.0
2000	8.0	8.0	8.0	8.8
2001	7.3	7.3	(8.8)	
2002	8.0	8.0		
2003	9.1			

Official real GDP growth rates were first published in the *Statistical Yearbook 1993*, for the years up through 1992. Since then each issue of the *Statistical Yearbook* has reported real GDP growth rates for the years up through one year before the publication date (the year in the title).

In 1995 the nominal and real growth rates of the years through 1993 underwent major corrections primarily in response to the findings of the 1993 tertiary sector census. Since then only the 1994 and 2001 real GDP growth rate were ever retrospectively revised, while nominal GDP (and thus, implicitly, the nominal GDP growth rate) continues to as before be revised once, in the year following its first publication.

The 2003 figure is the first published, in the 2003 national economic and social development statistical report ([http://www.stats.gov.cn/tjgb/ndtjgb/qgndtjgb/t20040226\\_402131958.htm](http://www.stats.gov.cn/tjgb/ndtjgb/qgndtjgb/t20040226_402131958.htm)).

The deflator underlying real GDP is based on only a subset of the whole economy, largely those statistical units on which relatively complete nominal and real data are available for the first published GDP data. Nominal GDP data are later revised once final data are available on a number of residual statistical units, such as the banking system, insurance businesses, the railways, and civil aviation; these statistical units are likely to only provide nominal data. In as far as the first published (implicit) deflator reflects the best possible estimate of the true deflator for the whole economy, it is applicable not only for the first published GDP data but also for the revised nominal GDP data. Therefore the official real GDP growth rate rather than the deflator is likely to require correction in response to the revised nominal GDP

growth rate (apart from the special case of the years 1990-1994, with revisions following the tertiary sector census and an unexplained later revision to the year 1994 real growth rate).

Sources: *Statistical Yearbook 1990 through 2003*; Albert Keidel (2001).

**Table 2. Sum of Provincial Value-added Divided by Nationwide Value-added**

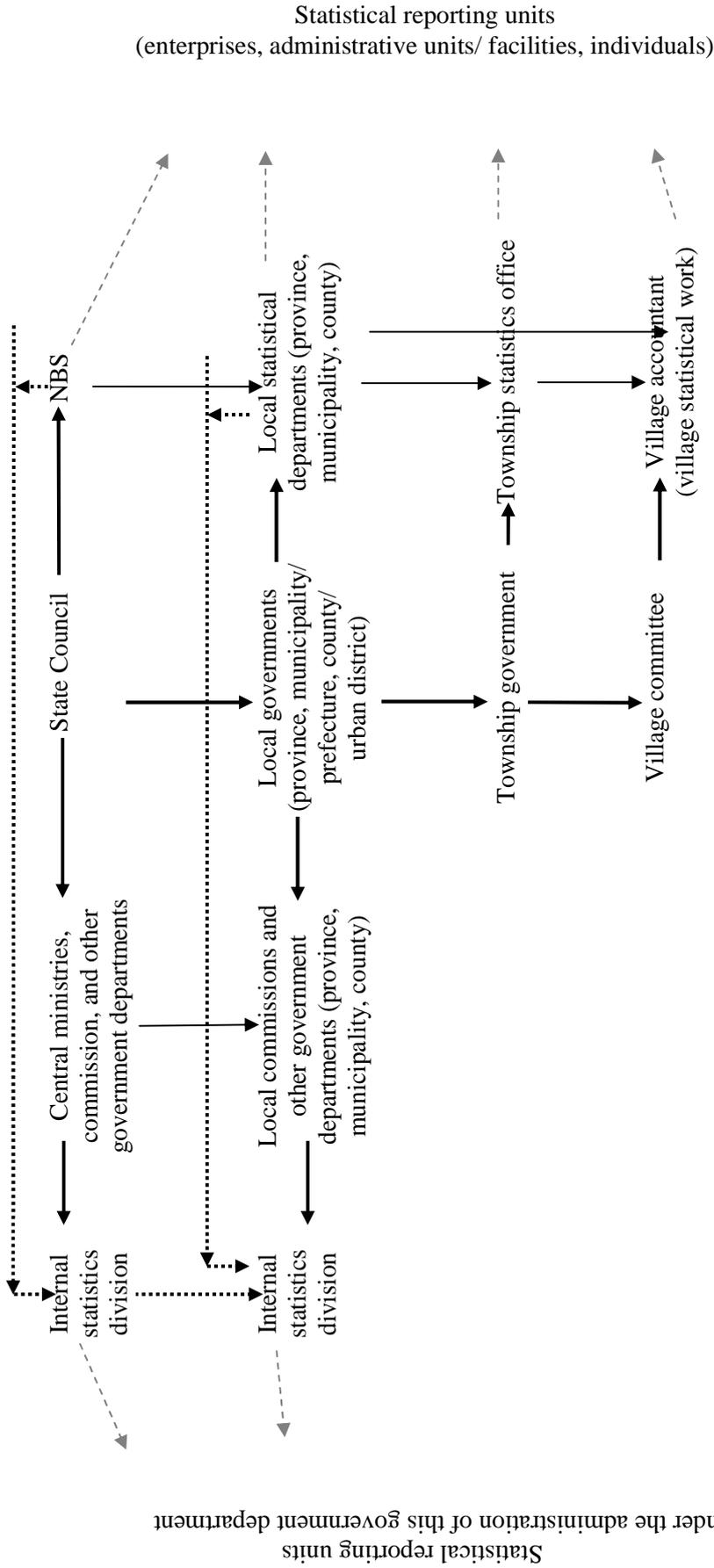
<i>Production approach</i>										
	Total (GDP)	Primary sector	Secondary sector	# Industry	# Construction	Tertiary sector				
1993	1.091	1.028	1.004	1.001	1.019	1.307				
1994	1.008	0.982	1.013	1.024	0.946	1.019				
1995	0.989	0.996	0.957	n.a.	n.a.	1.034				
1996	1.000	1.004	0.950	0.960	0.886	1.077				
1997	1.029	1.047	0.981	0.994	0.898	1.093				
1998	1.043	1.018	0.997	0.998	0.994	1.123				
1999	1.070	1.011	1.008	1.003	1.043	1.194				
2000	1.087	1.045	1.007	0.998	1.065	1.232				
2001	1.113	1.064	1.016	1.005	1.087	1.283				
2002	1.126	1.006	1.038	1.023	1.139	1.316				
<i>Expenditure approach</i>										
	Total (GDP)	Final con- sump- tion	# House- hold cons.	## Rural house- holds	## Urban house- holds	# Gov- ernment	Gross capital forma- tion	# Fixed capital form.	# Change in inven- tories	Net exports
1993	0.990	0.911	0.924	0.978	0.870	0.868	1.038	0.916	1.803	-0.665
1994	0.979	0.909	0.920	0.989	0.856	0.867	1.084	0.911	2.998	0.811
1995	0.979	0.892	0.887	0.933	0.842	0.909	1.106	0.964	2.063	1.086
1996	0.999	0.924	n.a.	n.a.	n.a.	n.a.	1.121	n.a.	n.a.	0.841
1997	1.009	0.922	0.894	0.924	0.864	1.041	1.160	0.995	2.640	0.849
1998	1.035	0.942	0.912	0.955	0.873	1.059	1.210	1.034	3.450	0.709
1999	1.061	0.942	0.902	0.950	0.861	1.095	1.245	1.061	6.564	1.196
2000	1.088	0.960	0.910	0.948	0.879	1.143	1.278	1.067	-17.365	1.471
2001	1.080	0.985	0.912	n.a.	n.a.	1.240	1.211	1.056	10.020	1.417
2002	1.097	1.029	0.947	0.948	0.946	1.317	1.195	1.063	30.951	1.111

# denotes a sub-category, ## a sub-sub-category. The list of sub-categories is complete, as is the list of sub-sub-categories. 1993 is the first year in which GDP data calculated according to the expenditure approach became available. The large downward adjustments to provincial production-income approach GDP in 1993 are due to the fact that 1993 provincial-level data, published a year late, already incorporate the retrospective upward revisions to GDP following the tertiary sector census, while the nationwide data do not.

Provincial-level expenditure data for 1993 and 1994 were published only in the *Statistical Yearbook 1995* and *1996*, i.e. one year late; this implies that provincial-level data could be revised data (while nationwide data are those as first published). In all other instances, both provincial and nationwide data are as first published, since no revised provincial data are usually published.

Sources: *Statistical Yearbook 1994*, pp. 32, 35; *1995*, pp. 32-4, 36-40; *1996*, pp. 42-44, 46-50; *1997*, pp. 42, 44, 46-50; *1998*, pp. 55, 62f., 67-71; *1999*, pp. 55, 63, 67-71; *2000*, pp. 53, 60f., 65-9; *2001*, pp. 49, 57, 60-65; *2002*, pp. 51, 59, 63-7; *2003*, pp. 55, 63, 67-71; *GDP 1952-1996*, p. 95 (for year 1995 production approach provincial-level value-added data), p. 106 (for year 1996 expenditure approach provincial-level value-added data).

Figure 1. Organizational Chart of Statistical Work



- ↑ Administrative leadership (*xingzheng lingdao*)
- ↑↑ Business leadership (*yewu lingdao*)
- ⋯ Business guidance (*yewu zhidao*)
- - - Data collection from reporting unit

Source: Following Wang Qi (2000), p. 920.

Figure 2. Organizational Chart of China's Statistical Authority -

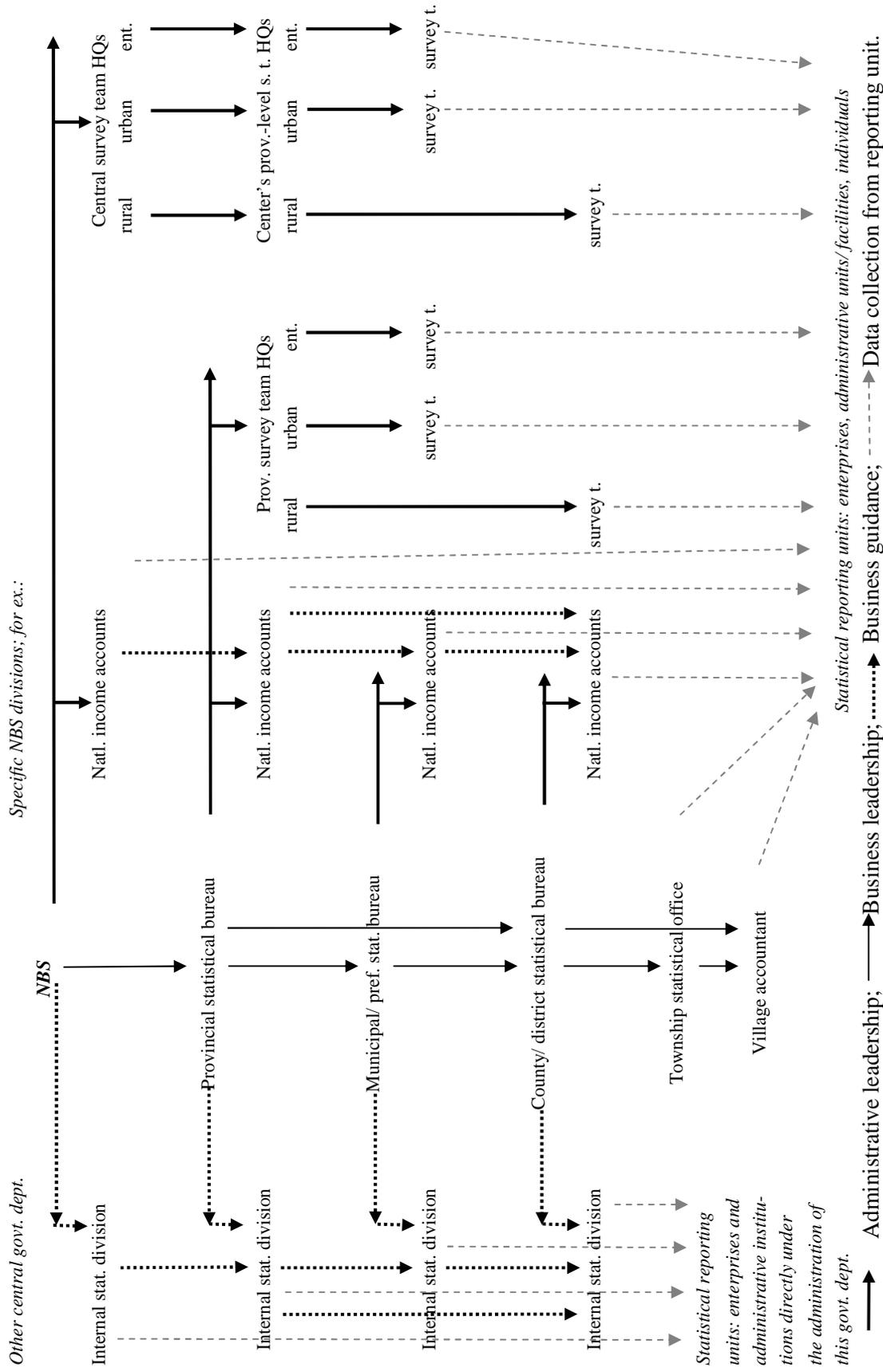
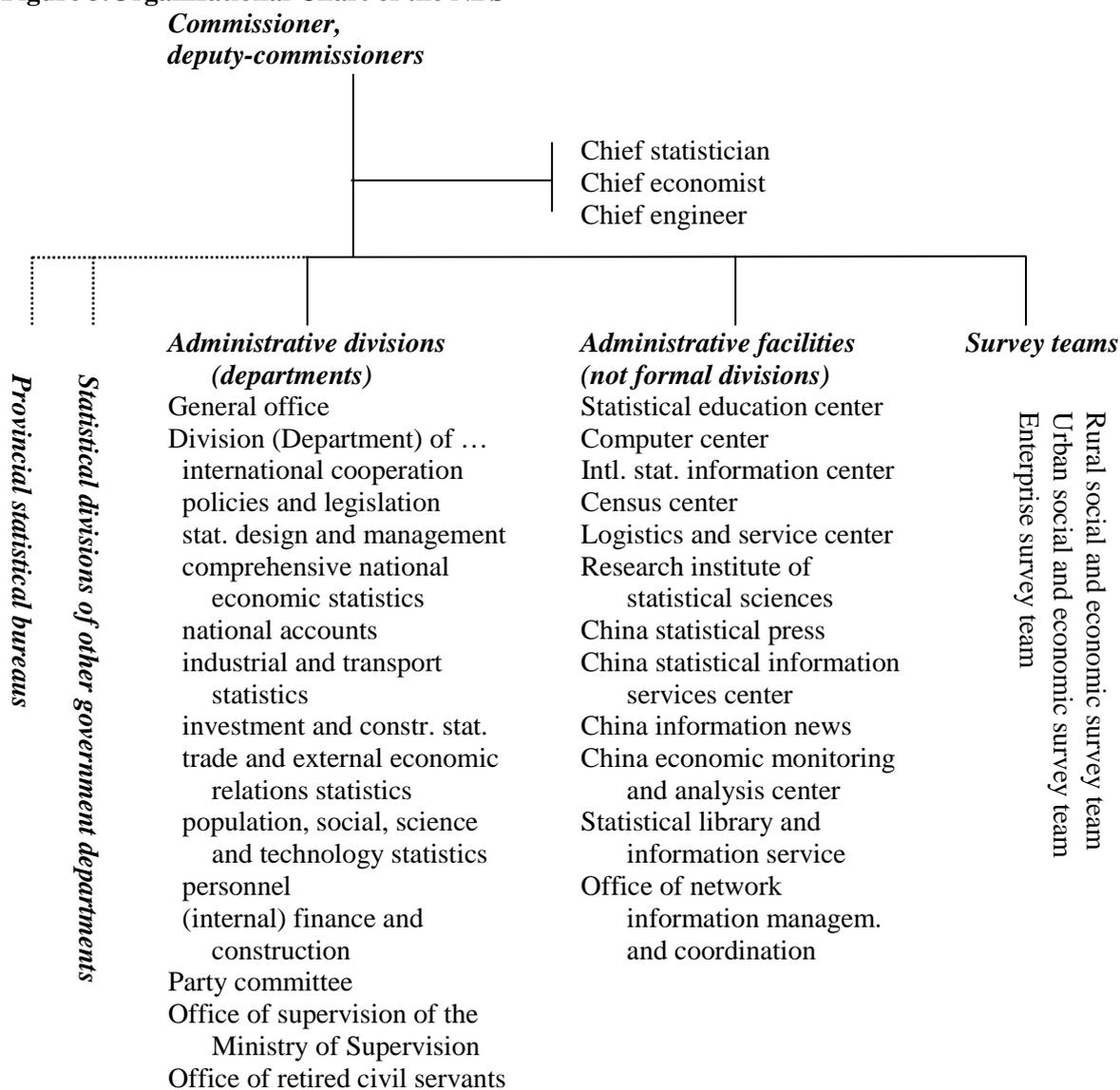


Figure 3. Organizational Chart of the NBS



The Chinese term for the official English translation “Office of supervision of the Ministry of Supervision” currently is *jijian jianchaju*. The Chinese label of this office in earlier years was simply *jiwei* (for example, in *Statistical Work Yearbook 1992*, p. 481), i.e., “Disciplinary Commission,” which would have suggested a connection to the CCPCC Disciplinary Commission. The re-labeling need not imply that the link to the Party’s Disciplinary Commission has been severed.

Sources (accessed on 12 April 2004): NBS at, in Chinese and English, <http://www.stats.gov.cn/tjjg/index.htm>, and <http://www.stats.gov.cn/english/agencyinformation/index.htm#>.

Table 3. NBS Surveys

Sample survey	Content	Number of observations	Frequency	Organization in charge	Starting year
Population change	Population birth and death rate, educational attainment, employment	Approx. 1.2m (0.1% of population); every 5 years of population; stratification by province	Annual (1 Oct.)	NBS div. for pop., sci., and techn. stat.?	Well established
Urban labor force	Employment, not yet employed, unemployment	250,000 registered urban population age 15 and above; sub-sample of population change survey	Quarterly	As above	1996
Agricultural production	Production quantities of grain, cotton, and animal husbandry	Approx. 680,000 pieces of land in 20,000 villages; stratification by province	Annual, quarterly	Rural teams	Well establ.
Basic conditions in rural townships and villages	Township: population, employment, agricultural production conditions, main economic indicators, fiscal and financial indicators, district ( <i>shequ</i> ) environment; Village: population, employment, agricultural technology, agricultural land and irrigation, agricultural mechanization	Triennial complete survey; annual sample survey (in rural townships and villages covered by rural household survey)	Annual	Rural teams?	survey
Below-norm industrial enterprises	Employment, gross output value, and sales revenue of industrial enterprises with annual sales revenue below 5m yuan RMB	Approx. 300,000 (supposedly 7% of the actual number), in 4 categories: (i) township-level, (ii) village-level and below, (iii) village-level individual-owned ( <i>getihu</i> ), (iv) urban individual-owned ( <i>getihu</i> ); stratification by province	Twice per year (Jan.-Sept.); annual	Enterprise teams	Recently currently
Rural investment in fixed assets	Investment in fixed assets completion and under construction, size and value of completed housing construction	3-5 counties in every province: all townships and villages involved in rural household survey; coverage: (i) enterprises in townships and villages, (ii) township-level administrative facilities and organizations, (iii) rural households	Semi-annual	Rural teams	2000 (similar, earlier surveys)
Below-norm commerce and catering	Sales revenue in commerce, business income in catering, and value of (presumably individual) commodities sold	Systematic sampling of counties according to sales revenue at first stage (different options for second stage); stratification by province	Monthly	Enterprise survey teams?	Under trial

Rural household survey	Basic household conditions, per capita gross and net income, living expenditures, consumption of main consumer goods, ownership of durable goods	68,000 households in 7,000 villages in 857 counties; 4-year rotation	Diary recording (reported monthly)	Rural teams	Well established survey
Urban household survey	Population, employment, cash income and expenditures, purchase of main commodities, housing situation, ownership of durable goods	Systematic sampling within provinces of 36,000 households in 226 cities/counties; 3-year rotation	Diary recording (reported monthly)	Urban teams	Well established survey
Investment in fixed assets price survey	Output value of construction enterprises, prices of construction materials, prices of major equipment and tools purchased by construction units; wages and fees	Key ( <i>zhongdian</i> ) sampling and representative sampling	Semi-annual and annual	Urban and teams	Well established survey
Consumer price survey	Prices of 325 commodities and services used by urban (including township) residents	Nationwide sample of 146 municipal cities ( <i>chengshi</i> ) and 80 county-level cities ( <i>xiancheng</i> ) with 30,000 survey establishments chosen by sales revenue and business income	Monthly and annual teams	Urban	Well established survey
Industrial goods price survey	(i) Ex-factory price index of industrial goods, (ii) purchasing price index of raw materials, fuels and power	(i) nationwide 10,000 representative enterprises with 1,130 representative products (3,120 specifications); (ii) 350 representative products; combination of direct data collection and enterprise reporting	Monthly and annual teams	Urban	Well established survey
Other price surveys	Materials traded on the market ( <i>shichang wujia</i> ), agricultural procurement goods			Urban/rural survey teams	Well established.
Enterprise business conditions	Basic conditions of enterprises; manager perspective of sectoral climate and outlook for own enterprise	Random sample of 16,000 enterprises in industry, construction, communication and transportation, storage and post and telecommunications, wholesale and retail trade, catering, real estate, and social serv.	Quarterly (collection by mail) and monitoring and analysis center?	NBS' economic monitoring and analysis center?	China 1994

Source: Following He Keng and Zheng Jingping (2001), pp. 56-60; author's knowledge of additional survey details and additional surveys.

**Table 4. United Nations Fundamental Principles of Official Statistics and Their Implementation in China**

Topic	Content	China*
1. Practical utility	Official statistics provide an indispensable element in the information system of a democratic society, serving the government, the economy and the public with data about the economic, demographic, social and environmental situation. To this end, official statistics that meet the test of practical utility are to be compiled and made available on an impartial basis by official statistical agencies to honour citizens' entitlement to public information.	VV
2. Professionalism	To retain trust in official statistics, the statistical agencies need to decide according to strictly professional considerations, including scientific principles and professional ethics, on the methods and procedures for the collection, processing, storage and presentation of statistical data.	V?
3. Information on methods	To facilitate a correct interpretation of the data, the statistical agencies are to present information according to scientific standards on the sources, methods and procedures of the statistics.	V
4. Comments	The statistical agencies are entitled to comment on erroneous interpretation and misuse of statistics.	VV
5. Sources	Data for statistical purposes may be drawn from all types of sources, be they statistical surveys or administrative records. Statistical agencies are to choose the source with regard to quality, timeliness, costs and the burden on respondents.	VV
6. Confidentiality	Individual data collected by statistical agencies for statistical compilation, whether they refer to natural or legal persons, are to be strictly confidential and used exclusively for statistical purposes.	(VVV)
7. Public	The laws, regulations and measures under which the statistical systems operate are to be made public.	½
8. Coordination	Coordination among statistical agencies within countries is essential to achieve consistency and efficiency in the statistical system.	V
9. Internationalism	The use by statistical agencies in each country of international concepts, classifications and methods promotes the consistency and efficiency of statistical systems at all levels.	(VVV)
10. Cooperation	Bilateral and multilateral cooperation in statistics contributes to the improvement of systems of official statistics in all countries.	VV

\* China's performance reflects the author's evaluation on a scale of zero to three (highest mark).

The column "content" is a copy of the official text, while the column "topic" gives the author's summary terms.

6. While outsiders are not in a position to ascertain whether the NBS and local statistical bureaus are able to guarantee confidentiality, it does appear that this is the case.

9. There appears to be a great effort to adopt international concepts, classifications, and methods, but it is difficult to evaluate the extent to which this has been successfully achieved.

Source of United Nations Fundamental Principles of Official Statistics: Tim Holt (1998).

**Table 5. General Data Dissemination System: Four Dimensions**

Content	China*
<p><i>1. Coverage, periodicity, and timeliness</i>  Dissemination of reliable, comprehensive, and timely economic, financial, and socio-demographic data is essential to the transparency of macroeconomic performance and policy. (The GDDS recommends dissemination as described in its Table 1.)</p>	VV½
<p><i>2. Quality</i>  Data quality must have a high priority. Data users must be provided with information to assess quality and quality improvements. The GDDS recommends:</p>	
Dissemination of documentation on methodology and sources used in preparing statistics.	V
Dissemination of component detail, reconciliations with related data, and statistical frameworks that support statistical cross-checks and provide assurance of reasonableness.	½
<p><i>3. Integrity</i>  To fulfill the purpose of providing the public with information, official statistics must have the confidence of their users. In turn, confidence in the statistics ultimately becomes a matter of confidence in the objectivity and professionalism of the agency producing the statistics. Transparency of practices and procedures is a key factor in creating this confidence. The GDDS therefore recommends:</p>	
Dissemination of the terms and conditions under which official statistics are produced, including those relating to the confidentiality of individually identifiable information.	(V)
Identification of internal government access to data before release.	½
Identification of ministerial commentary on the occasion of statistical release.	—
Provision of information about revisions and advance notice of major changes in methodology.	V
<p><i>4. Access by the public</i>  Dissemination of official statistics is an essential feature of statistics as a public good. Ready and equal access by the public are principal requirements. The GDDS recommends:</p>	
Dissemination of advance release calendars.	VVV
Simultaneous release to all interested parties.	(VVV)

\* China's performance reflects the author's evaluation on a scale of zero to three (highest mark).

Source: The General Data Dissemination System Document at <http://dsbb.imf.org/Applications/web/gdds/gddshome/>, accessed on 16 April 2004.

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<sup>1</sup> Some government departments publish their data on the NBS website at <http://www.stats.gov.cn/tjfw/index.htm> (accessed on 22 June 2004). For an overview of the division of labor among the key Chinese data-collecting government departments see the International Monetary Fund's General Data Dissemination System (at <http://dsbb.imf.org/Applications/web/gdds>) on China, Table C on "Data Integrity and Access by the Public."

<sup>2</sup> On the NBS responsibility see Article 4 of the Statistics Law (NPC, 15 May 1996).

<sup>3</sup> The *Statistical Yearbook 2003* contains 24 sections; the preface of each section usually gives a brief outline of data sources.

<sup>4</sup> See, for example, Gerard F. Adams and Chen Yimin (1996), Meng Lian and Wang Xiaolu (2000), Thomas Rawski (2001a, 2001b, 2003a, 2003b), *The Economist* (7 March 2001), and the *Asian Wall Street Journal* (22 Nov. 2001).

<sup>5</sup> These alternative growth rates are suggested by Thomas Rawski (2003a); in detail, he suggests -2 to +2% in 1998, -2.5 to +2% in 1999, +2 to +4% in 2000, and +3 to +5% in 2001. Also see Thomas Rawski (2001b, p. 349; 2003b, Figure 1).

<sup>6</sup> According to the *Statistical Yearbook 1999*, in 1998 nominal GDP grew by 6.6%, and real GDP by 7.8%. But according to the *Statistical Yearbook 2000*, revised nominal GDP in 1998 grew by only 5.2%, with the real growth rate still at 7.8%. The revised nominal GDP growth figure raises three possible conclusions. First, the original implicit deflator of 0.989 in the *Statistical Yearbook 1999* is the true deflator (no GDP deflator is published separately); then the original 1998 real growth rate needs to be revised downward to 6.4%, rather closer to Rawski's estimate of 5.7%; this is the most likely scenario. Second, the originally published real growth rate of 7.8% is the true value; then the revised nominal GDP value for 1998 implies the need to revise the implicit GDP deflator downward to 0.976. Applying this deflator to Rawski's income approach data (as he does using the earlier implicit deflator) yields a real growth rate using Rawski's reconstructed income approach of 7.2%, rather closer to the official real growth rate. (A third possibility is that the GDP deflator needs only to be partly revised, leading to a combination of the above two cases.)

<sup>7</sup> One other researcher to calculate alternative GDP data, in this case for the years 1952 through 1995, is Angus Maddison (1998). Carsten Holz (2004c), for the reform period, argues that these alternative GDP estimates are inferior to the official data.

<sup>8</sup> Nicholas Lardy argues that other time series which one would expect to be correlated with GDP, such as imports, tax revenue, or credit, confirmed the official GDP growth rates of the late 1990s. See Nicholas Lardy (2002) for the argument regarding imports. Thomas Rawski (2003a) lists all three of Nicholas Lardy's arguments and responds to them. Lawrence Klein and Suleyman Ozmuur (2003) through principal component analysis conclude that official GDP growth rates make sense given the movements in a dozen or more independently collected time series which are expected to be related to GDP.

<sup>9</sup> The industrial output values of different enterprise groups also add up properly across provinces to yield the corresponding nationwide values.

<sup>10</sup> The shortcomings in a comparison of GDP to energy use, product quantities produced, and freight transportation are explored in detail in Carsten Holz (2003), and are not limited to the issue of dissimilar coverage. The comparison of freight transportation and petroleum consumption in the transportation sector is by Ralph Huenemann (2001).

<sup>11</sup> For some specific Chinese sources on data falsification and for their interpretation see, for example, Thomas Rawski and Wei Xiao (2001), or also Thomas Rawski (2001a and 2001b). Thomas Rawski

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popularized the term “wind of falsification and embellishment” in the Western literature on Chinese statistics. This and the following two paragraphs draw on Carsten Holz (2003).

<sup>12</sup> See, for example, *Zhongguo tongji*, no. 5/1998, p. 21, or no. 7/1998, p. 30.

<sup>13</sup> See, for example, *Zhongguo tongji*, no. 11/1998, pp. 21f, or no. 6/1999, p. 22.

<sup>14</sup> For example, an employee of the NBS Department for Statistical Development and Administration in November 2001 provided a comprehensive review of the shortcomings (but also achievements) of Chinese statistical practice in recent years and concluded that “China’s economic growth rate has been questioned by some international organizations and individuals. I basically feel that our growth rate objectively reflects China’s economic development, but when it comes to international standards and common methods, we still have quite some way to go.” (*Zhongguo tongji*, no. 11/2001, pp. 8-10.)

<sup>15</sup> In detail, the reasons for adjustment were: the price imputed for self-used grain is too low; the value of additions to inventories is exaggerated; the value of enterprise-internal services is underestimated; government subsidies to loss-making enterprises are not included; grain production is underestimated as arable land is underestimated; the value of vegetable production is underestimated as high-price seasons are ignored; rural industrial output is underestimated; the imputed rent on housing is underestimated as it is based on historical costs, and the area is underestimated; rural services are underestimated; and adjustments need to be made to government-controlled prices. Not all adjustments may have been perfectly justified. Xu Xianchun (1999a,b), currently head of the NBS National Accounts Division, refutes some of the corrections.

<sup>16</sup> See Xu Xianchun (2000).

<sup>17</sup> Similar problems beset attempts abroad to calculate China’s GDP at purchasing power parity (Sean Dougherty, 1997).

<sup>18</sup> For the complete derivation of expenditure approach household consumption from the underlying data see Carsten Holz (2004a).

<sup>19</sup> See *China Infobank*, 29 February 2000.

<sup>20</sup> See, for example, Pan Zhenwen and An Yuli (2003). I am grateful to Thomas Rawski for pointing out this source.

<sup>21</sup> Price issues in the derivation of real growth series have not been discussed at all. The official GDP deflator is frequently suspected of being too low, leading to an over-estimate of real GDP growth rates. For additional data complications also see Carsten Holz (2004b) and Carsten Holz and Yi-min Lin (2001).

<sup>22</sup> The implementation instructions to the statistics law (NBS, 2 June 2000, Art. 23) use the term “double leadership” (*shuangzhong lingdao*) for local statistical bureaus: in all professional matters, the next higher-level statistical bureau exerts the main leadership. (Implicitly, otherwise, the local government exerts the main leadership.)

<sup>23</sup> The relationship is “twice” removed from the core administrative leadership relationship between, say, central and provincial government. In a first step, the central, for example, Agriculture Ministry exerts business *leadership* over the provincial agricultural bureau (of the provincial government). In the second step, the statistical division of the central Agriculture Ministry exerts business *guidance* over the statistical division of the provincial agricultural bureau.

<sup>24</sup> The source for Figure 1, Wang Qi (2000), confusingly, also labels this relationship a “business guidance” relationship. But, contrary to a guidance relationship, in the interaction between statistical *xitong* and data

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reporting units all authority rests with the statistical *xitong*. The statistical reporting units have no choice but must report according to the requirements of the statistical *xitong*.

<sup>25</sup> See, for example, Xi'an Government, 11 April 2001, 10 Sept. 2001. In Xi'an Municipality (of Shaanxi Province), all data are now collected at the county/ urban district level. The municipal statistical bureau is to include all statistical units in its reports. Previously, data on provincial and central units appear to have been listed separately, but some data may not have been available at all. Provincial and central units are now also covered by surveys organized by the municipal statistical bureau. The rationale for the innovation is that the Xi'an municipal statistical bureau needs data from all units within its geographic reach in order to be able to calculate municipal GDP.

<sup>26</sup> In Fujian Province, the provincial survey team headquarters are ranked as second-level bureaus (*ju*), and the heads of the provincial survey team headquarters are ranked at the level of a deputy bureau head. (*Fujian shengzhi tongjizhi*, pp. 15f.) Translated to the central level, this would imply that the central survey team headquarters hold the rank of a division within a government ministry, i.e., slightly higher than the NBS administrative divisions, with the head of a central survey team headquarters ranked at deputy-ministerial level.

<sup>27</sup> For example, Zhang Sai, commissioner of the NBS from 1984 through 1997, previously worked in the Shanxi Province planning commission, economic commission, and statistical bureau while teaching as professor at the Shanxi Finance and Economics College (1958-1982), and from 1982 through 1984 served as Standing Committee member of the Shanxi Party Committee (Zhang Sai, 2001, front matters). The current commissioner of the NBS, Li Deshui, is the third commissioner since 1997, with none of these three having previously worked in the NBS.

<sup>28</sup> For the provincial level and below, in this and the following two paragraphs, see He Keng and Zheng Jingping (2001), pp. 40, 50.

<sup>29</sup> The NBS does not have the authority to regulate on lower-level government matters (such as appointment authority). The fact that the implementation instructions received the formal approval of the State Council provides the necessary authority, but the implementation instructions are unlikely to be taken as seriously by local governments as would have been a State Council circular or a National People's Congress law.

<sup>30</sup> For example, all legal-person production units in China need to register with the statistical bureau—against a fee (NBS, 24 May 2000). This fee may well not appear in the formal budget of the statistical bureaus.

<sup>31</sup> See He Keng and Zheng Jingping (2001), p. 50. In Shaanxi Province, 52% of central funding (*shiyefei*) received was passed on to statistical departments at the “basis” (*jiceng*), which probably implies county level and below. (*Shaanxi Yearbook 2002*, p. 337)

<sup>32</sup> On a history of Chinese statistics going back two thousand years see Li Huicun and Mo Yueda (1993), with data on the NBS staff size on pp. 377, 399.

<sup>33</sup> See He Keng and Zheng Jingping (2001), p. 45, vs. Zhang Sai (2001), p. 276. The latter source gives a number of 900,000, which appears mistaken by one digit.

<sup>34</sup> See State Council (1998), p. 401.

<sup>35</sup> Fujian Province in 1995 had 1139 regular statistical staff, of which 110 worked at the provincial level; if all other 1039 staff had been located at the county level (rather than at the municipal/ prefectural, county, and township level), this would imply twelve staff in each of the 84 county-level statistical departments. Separately, the urban survey teams in Fujian Province in 1990, the most recent year for which the source reports the data (which means the data are probably relevant at least until the late 1990s), had 377 staff, of which 244 were local staff; of the 377 staff, 327 worked at the municipal or county level (228 local and 99 central staff), and 50 at the provincial level (16 local and 34 central staff). The rural survey teams in Fujian

Province in 1986 had 458 staff, of which 254 were central and 204 local staff; a typical central survey team at the county level had 8-9 staff. (*Fujian shengzhi tongjizhi*, pp. 13-16, 319) In Xi'an Municipality of Shaanxi Province, the regular number of staff in 2002 was 62, which appears rather high, except that Xi'an Municipality had been an extra-plan city with near-provincial treatment by the center for many years (until the formal concept of extra-plan cities was abandoned sometime in the 1990s). (Xi'an Government, 28 May 2002)

36 The sum based on the upper boundary suggests a grand total of approximately 130,000 regular staff.

37 See State Council (1998), p. 397. Lower-level statistical bureaus comprise matching administrative divisions. For example, the Xi'an Municipality (of Shaanxi Province) statistical bureau has the same administrative divisions as the NBS except four (the Division for International Cooperation, the Division for Statistical Design and Management, the Division for Finance and Construction, and the Office of Retired Civil Servants), plus an extra division for rural social and economic statistics. (Xi'an Government, 28 May 2002)

38 Personnel information are available for year-end 1991, 1995, 1996, and 1997. The Party committee secretary changed between year-end 1991 and year-end 1996, the only two years in which a Party committee secretary is explicitly listed; the Party committee secretary of year-end 1991 also disappeared from the position of deputy-commissioner (or any other position in the NBS). In 1997, the published list of top NBS employees (including all division heads and deputy-heads) does not include a Party committee secretary, only three deputy-secretaries. The executive deputy-secretary and one of the other deputy-secretaries held no other position in the NBS, while the third deputy-secretary also acted as the chairman of the NBS labor union (as s/he did in 1995 and 1996). In 1991, one of the two non-executive deputy-secretaries also served as the secretary of the disciplinary commission (an institution not included in the 1995, 1996, or 1997 list). (*Statistical Work Yearbook 1992*, p. 481; 1996, pp. 316f.; 1997, p. 332; 1998, p. 338)

A search for the two separate terms (Party Committee) “secretary” and “NBS” (both in Chinese, to appear anywhere in the same article) in the economic news database of *China Infobank* in the period 1990 through 15 April 2004 yielded no hits that contained any reference to a NBS Party Committee secretary. This suggests that the NBS Party Committee secretary plays no public role, unlike in other fields (such as in the reform of the banking system). A search for the person who was NBS Party committee secretary at year-end 1996, Zhai Ligong, over the same period, yielded 9 hits; in 6 of these he was listed as NBS deputy-commissioner (with no mentioning of his Party position), in 1 he was listed without any affiliation, and in the 2 most recent ones he was listed in other functions (first, in 2001, as deputy-chair of the China investment and development acceleration commission, and, second, in 2002, as chairman of the supervision commission of large state-owned enterprises). This suggests that the government position of the NBS Party committee secretary—deputy commissioner of the NBS—is accorded more importance than his Party position, at least in news items that reach the public.

39 An earlier document on the organizational structure of the NBS of mid-2001, posted on an NBS webpage (<http://www.stats.gov.cn/zwgk.htm>, accessed on 31 May 2001), lists 14 administrative facilities. These include the first ten of Figure 3, a “grain and agricultural statistical work center,” plus the 3 survey teams. All except the 7th through 10th administrative facility in Figure 3 relied fully on budget appropriations; the latter four were self-financing.

40 For the number of survey teams see the NBS webpage <http://www.stats.gov.cn/zwgk.htm>, accessed on 31 May 2001.

41 For the rural and urban surveys see *Fujian shengzhi tongjizhi*, pp. 15f.

42 See [http://www.stats.gov.cn/tjdt/gjtjjdt/t20040408\\_402142383.htm](http://www.stats.gov.cn/tjdt/gjtjjdt/t20040408_402142383.htm), accessed on 9 April 2004.

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43 No further details are provided. It would have been of interest to know which further institutions were operating under the umbrella of this society. The NBS note ordering the temporary halt to all activities of the society and its subordinate institutions was posted on the NBS homepage (at <http://www.stats.gov.cn>, accessed on 16 April 2004).

44 See *Statistical Work Yearbook 1998*, p. 338. A reviewer pointed out that the consultancy “was privatized in 2000 or 2001.”

45 The NBS and, similarly, local statistical bureaus, may also follow other typical patterns of China’s bureaucracy. This would mean involvement in a range of quasi-commercial activities, from renting out government land or office space under the jurisdiction of the statistical authority to running restaurants. There is no public evidence of such activities.

46 In recent years, many central line ministries were turned into companies (conglomerates) directly subordinate to the State Council. The principle of administrative leadership over central enterprises and possibly business leadership over lower-level tier enterprises, however, still applies. Another possible successor to a line ministry is an association.

47 According to He Keng and Zheng Jingping (2001), p. 49, some of these departments providing rather comprehensive statistics related to the national accounts are the Finance Ministry, the People’s Bank of China, the Customs Office, the Ministry of Foreign Trade and Economic Cooperation, the Education Ministry, the Health Ministry, the State General Administration of Sports, the State Environmental Protection Administration, the State Tourism Administration, the Justice Ministry, and the Land and Natural Resources Ministry. OECD (2000) on national accounts in China includes references to individual other government departments throughout the text.

48 For further details see Carsten Holz (2002).

49 See NBS (1997), pp. 59-63. The Division for Industrial and Transport (or Communication) Statistics of the statistical *xitong* has an annual report form on transportation and freight as well as on post and telecommunications. It is unclear whether the statistical *xitong* collects data independently of the various other government departments, or whether this report is compiled by making use of the other government departments’ data; this report appears to be used only in as far as it covers local (non-central) post and telecommunication services.

50 The relationship between the NBS and other central government departments is regulated in the Statistics Law, in a follow-up regulation specifically focusing on statistical work within these institutions located outside the immediate NBS *xitong*, and in the implementation instructions to the Statistics Law. (NPC, 15 May 1996, Art. 18; NBS, 27 Oct. 1999, Art. 16; NBS, 2 June 2000, Art. 20, 29)

51 The NBS webpage is at <http://www.stats.gov.cn/tjgl/index.htm>, accessed on 15 April 2004. Two relevant State Asset Supervision and Administration Commission regulations on statistical reporting are the “Enterprise state asset statistical report measures” and the “Central enterprise financial budget report administration measures,” both of 12 Feb. 2004, available in Chinese in *China Infobank*.

52 One possible explanation is that the People’s Bank of China survey started in 1992, at a time when the stature of the NBS was perhaps lower than today, and the survey continues to be conducted by the People’s Bank of China simply for historical reasons. The NBS now publishes its own business climate index (at [http://www.stats.gov.cn/english/statisticaldata/monthlydata/t20040120\\_137788.htm](http://www.stats.gov.cn/english/statisticaldata/monthlydata/t20040120_137788.htm), accessed on 15 April 2004). (The full name of the People’s Bank of China publication is *The People’s Bank of China Quarterly Statistical Bulletin*. NBS approval for the survey of industrial enterprises can be found at the NBS webpage [http://www.stats.gov.cn/tjgl/bmtjdcxmmml/t20020401\\_16076.htm](http://www.stats.gov.cn/tjgl/bmtjdcxmmml/t20020401_16076.htm), accessed on 15 April 2004.)

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53 See the General Data Dissemination Standard webpages (for this particular information, see <http://dsbb.imf.org/Applications/web/gdds/gddscountrycategorydiapreport/?strcode=CHN&strcat=175>, accessed on 16 April 2004).

54 No such statement was included in the original 1983 PRC Statistics Law (NPC, 8 Dec. 1983).

55 The self-employed (individual-owned enterprises) are excluded from the directly reporting enterprises throughout since they are not officially regarded as enterprises. Similar to the case of industry, in construction “grade four and above” enterprises report regularly and directly, in commerce and catering the units “above designated size,” and in transportation and communication those units which are part of a *xitong*.

56 For the starting date see a 11 April 2001 news item in *China Infobank*. The NBS’ website (<http://www.stats.gov.cn>) contains a link for these 5000 industrial enterprises to enter their data. A similar process is in effect for 3000 key real estate enterprises and 1000 key wholesale and retail enterprises.

57 Surveys are also subject to limitations encountered in other countries; for example, most price data are limited to urban areas, comparable to the case of the U.S. where the Bureau of Labor Statistics only publishes an urban Consumer Price Index.

58 At the local level, the switch to sample surveys of industrial enterprises is more gradual. For example, Xi’an Municipality in Shaanxi Province in 2002 switched to sample surveys of industrial enterprises with independent accounting system and with annual sales revenue below 5m yuan RMB, but the other municipalities in Shaanxi are unlikely to already have made the switch (*Xi’an Yearbook 2002*, p. 216).

59 Shaanxi Province, for example, conducted an “emerging sector” survey of renovation and decoration, real estate administration and rental housing, news and consulting services, computer-related services, and urban district (*shequ*) services in 2002. This survey involved a large number of other provincial government departments (planning commission, economic and trade commission, finance bureau, information sector bureau, construction bureau, education bureau, civil affairs bureau, judicial bureau, and industrial and commercial administration). It was to be repeated in the future every five years. (See Shaanxi Government, 11 July 2002.)

60 For example, at the provincial level, in Shaanxi Province in 2002, provincial rural survey teams wrote a survey report on the key aspects of animal husbandry in Shaanxi, provincial urban survey teams a survey report on the views of non-local investors of the investment environment in Shaanxi, and provincial enterprise survey teams a survey report on the causes of financing difficulties of small and medium-sized enterprises in Shaanxi. (*Shaanxi Yearbook 2002*, p. 336)

61 For example, the age-28 cohort in the 1990 census by 2000 (then age-38 cohort, in the 2000 census) had grown approximately 10%, which is logically impossible. This is after controlling for census day (1 July vs. 1 October), movements in and out of the military, and deaths. (There is no need to control for immigration because there is virtually none.) Without controlling for these various factors, the growth rate is even higher. I am grateful to Thomas Scharping for providing the estimate controlling for census day, movements in and out of the military, and deaths.

62 The quality of China’s retail sales data, which, for example, figure prominently in the calculation of consumption in the expenditure approach to GDP, has been repeatedly questioned by researchers. NBS access to sales tax data could provide a convenient double-check on the data of the commercial system.

63 According to He Keng and Zheng Jingping (2001), p. 61, double-reporting is the case particularly in industry and in wholesale and retail trade.

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64 According to He Keng and Zheng Jingping (2001), p. 26, this is particularly common in the case of agricultural output statistics, township and village enterprise statistics, unemployment statistics, import-export statistics, and FDI statistics.

65 While the NBS every few years publishes a compendium of selected statistical regulations of previous years, complete with ISBN number, these compendia are not available to the public. Some of these volumes also carry a stamp “for internal use only” (*neibu*). A few regulations have appeared on the NBS website.

66 While each separate topic on which China provides information to the GDDS comes with a complete contact address (and name of a contact person) in the NBS, the NBS website, in contrast, carries no such information. The International Monetary Fund’s GDDS can be found at <http://dsbb.imf.org/Applications/web/gdds/gddshome/>, and the NBS homepage is at <http://www.stats.gov.cn>.

67 See Pan Zhenwen and An Yuli (2003), p. 8.

68 A very few exemplary cases of punishment of a statistics official or local government leader were made public in the late 1990s.

69 The NBS provides a telephone number and an e-mail address on its homepage (<http://www.stats.gov.cn>) to which violations of statistical laws and regulations can be reported; nothing is known about the effects of such reporting.

70 For information on inspections see the China webpages in the International Monetary Fund’s GDDS (<http://dsbb.imf.org/Applications/web/gdds/gddshome/>) under the heading “Table C. Data Integrity and Access by the Public.”

71 For details on the 2001 inspection also see <http://www.stats.gov.cn/xwkj/tjdt/20010523002.htm>, accessed on 8 Feb. 2002. The inspection explicitly included statistical departments at all administrative levels and internal statistical divisions of other government departments, but inspections may have been a priori limited to 5% of all relevant work units.

The NBS and at least provincial statistical bureaus also have an auditing office (*shi*), with the label indicating that it is part of one of the divisions (possibly the internal finance and construction division) rather than an independent division of its own (NBS, 1 March 1995). It focuses on internal financial issues.

72 Also see Carsten Holz and Yi-min Lin (2001) for further details on the industrial labor statistics.

73 See He Keng and Zheng Jingping (2001), pp. 25f., and Zhang Sai (2000), p. 294, for this evaluation. In Fujian Province, a head or deputy-head of municipal and county statistical bureaus also serve as head of the survey teams at that administrative level; the source is ambiguous about whether this refers to only local survey teams (likely) or also to central survey teams. In municipalities and counties with central survey teams as well as in populous municipalities and counties with local survey teams, the local statistical bureau appoints a full-time survey team deputy-head (at the *ke* rank). (*Fujian shengzhi tongjizhi*, p. 16)

74 One example is the *China Markets Yearbook* (USD 200 for the 2003 volume), or county-level data from the year 2000 population census, in electronic form, for USD 36,000 (<http://chinadatacenter.org/newcdc/census2000.htm>). A reviewer pointed out that “fairly detailed population census data is available on CD-ROM in Beijing over-the-counter from NBS for 500 and 1000 yuan.”

75 Zhang Sai (2001, p. 276) lists a total of 900,000 statistical personnel, which appears off by one digit. “Upper-level secondary education” is the translation of *zhongdeng zhuan ye jiaoyu*, which refers to

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specialized secondary education, which in turn reflects specialization after 9<sup>th</sup> grade. A regular upper secondary school education is usually ranked slightly higher than a specialized secondary education. Presumably, Zhang Sai means specialized secondary education *or* regular upper secondary school education.

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See, for example, *Zhongguo tongji* no. 11/1999, 25, and no. 2/2001, 8f. Much earlier, the journal *Jingji yanjiu cankao ziliao* in its issue of 28 August 1988, devoted solely to China's statistical system, already raised such institutional questions. Zhang Sai (2001), former NBS commissioner, devotes one full chapter to possible reforms, without, however, promoting one particular overall reform program.