

EXPLORING THE DESIRABILITY AND FEASIBILITY OF REFORMING CHINA'S GOVERNMENTAL ACCOUNTING SYSTEM

C. Janie Chang, Gongmeng Chen and Chee W. Chow*

ABSTRACT. In response to increasing pressures for public sector efficiency and effectiveness, many countries have switched from cash-based governmental accounting to accrual-based approaches. But other countries have rejected this change, suggesting that its costs and benefits may vary with country-specific factors. To gain insights into the desirability and feasibility of changing China's governmental accounting from the current cash-based system to one based on the accrual approach, we survey 608 Chinese government staff and officials who either prepare or use such reports. These respondents identify a number of specific inadequacies in the current system and express widespread support for converting towards an accrual-based approach. They also assess the severity of potential impediments to change and the most workable arrangement and timetable for such a change.

INTRODUCTION

The past twenty years has been a period of significant socio-economic reforms in China. In addition to the devolution of control from the central government to provincial and local governments as

* C. Janie Chang, Ph.D., and Chee W. Chow, Ph.D., are the Vern Odmark Professor and an Emeritus Professor, respectively, School of Accountancy, San Diego State University. Gongmeng Chen, Ph.D., is a Professor of Finance, Antai School of Management and Economics, Shanghai Jiaotong University, China. Chang's research interest is in auditing, accounting and information systems to investigate information processing of experts, and cross-cultural issues related to professional judgments and decisions in auditing and managerial accounting. Chen's research interest is in management accounting, capital markets in China, and venture capital in China. Chow's research interest is in many areas of accounting, including management accounting and controls, international accounting, financial accounting, accounting education, auditing, and taxation.

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well as to private enterprises, the mix of governmental revenue sources and fiscal responsibilities has fundamentally changed. For example, government revenues as a share of China's gross domestic product (GDP) have declined to unprecedented levels (Cong, 1998; Prakash, 1998; Holzer & Zhang, 2004).¹ Yet the government still plays a major role in many aspects of the economy, including assuming the support of those workers who have been discharged by their newly privatized state-owned-enterprise employers or whose employers have gone bankrupt (Naughton, 1998). Further, shifts are occurring in the way tax revenues are being shared among various levels of government (central, provincial, and local), as well as in their mix of responsibilities. These shifts have created a need for better planning and monitoring of the flow of resources both across government units/levels and across time, and for ensuring that resources are used efficiently and effectively (Lou, 2002). The magnitude of this challenge is evident from the Chinese central government's deficits as shown in Table 1.

In response, Chinese public officials are being encouraged to better manage their units rather than relying on state appropriations to fully fund their expenditures. Efforts at reform also have been directed at making certain structural changes in the regulations (e.g., separating administrative units from service institutions; requiring uniform department budgets; imposing a single Treasury account

TABLE 1
Chinese Government Revenue and Expenditure (in 100 million Yuan)

Year	Revenue	Expenditure	Deficits
1996	7407.99	7937.55	-529.56
1997	8651.14	9233.56	-582.42
1998	9875.95	10798.18	-922.23
1999	11444.08	13187.67	-1743.59
2000	13395.23	15886.50	-2491.27
2001	16386.04	18902.58	-2516.54
2002	18903.64	22053.15	-3149.51
2003	21715.25	24649.95	-2934.70
2004	26396.47	28486.89	-2090.42
2005	31649.29	33930.28	-2280.99

Source: National Bureau of Statistics of China (2006).

system), streamlining procedures (e.g., standardizing revenue collection and funds disbursement procedures), and the classification of accounts as assets, liabilities, net assets, revenues and expenditures (Liu, 1997a; 1997b; Lou, 2002; Xiang, 1999). However, even though the modernization of public sector accounting practices and fiscal management techniques has been recognized as being critical to the transition from a centrally planned to a market-based economy, the Chinese government's recent reforms have paid scant attention to improving the accounting reports' usefulness for fiscal management (Martinez-Vazquez & Boex, 2001).

China currently uses a cash-based governmental accounting system for general budgeting and in its government administrative units (Cortes, 2006). Yet some influential global agencies have made pointed criticisms of such systems' inadequacies (e.g., the World Bank). Others have gone even further by calling for adoption of an accrual-based approach (e.g., the International Monetary Fund (IMF) and the International Federation of Accountants (IFAC)).² Even though China's Ministry of Finance (MOF) has indicated recognition of a need to re-evaluate the adequacy of governmental accounting reports for budgeting, it has primarily focused on procedural and structural issues (e.g., standardizing procedures, extending coverage to include villages and townships) rather than the proper basis for governmental accounting (Lou, 2002). Hence, this study aims to increase insights into the effectiveness of China's current governmental accounting system. The findings also can add to the store of knowledge relevant to the general discussion of cash- vs. accrual-based systems in governmental accounting.

We used a survey to seek the views of Chinese governmental staff and officials on the usefulness and limitations of cash- vs. accrual-based approaches in governmental accounting. Usable responses were obtained from 604 Chinese government staff and officials. Two hundred and fifty-five of these are accounting information preparers from various department levels (e.g., provincial, city) of the Chinese MOF, and 349 are users of such information from a variety of governmental departments. Both users and preparers gave low marks to the usefulness of the information provided by the current system. Remarkably, the latter's assessment was often more negative than that of the former. The participants also rated the severity of numerous limitations of the current system, in particular

noting two issues. One is that the current system records costs only but not depreciation, making it difficult to value fixed assets. Second, Chinese government units often offer collateral in support of state enterprises. Yet the value of these collaterals is not reported, which severely under-states the government's liabilities.

Both the preparer and user groups indicated strong support for a change away from the cash-based system towards an accrual approach. They did so despite recognizing that such a change could entail significant costs. The respondents also rated the severity of several potential impediments to change, particularly emphasizing the increase in workload required to capitalize fixed assets, and increased communication and coordination issues. The participants also shared their views on the most effective timeline and approach for introducing the change.

In the balance of this paper, we provide background information on the push for accrual-based governmental accounting and discuss its potential applicability to China. Later sections describe our data collection method, present the results, and conclude the paper.

BACKGROUND

Governmental accounting has been called "overall budgetary accounting" in China since 1949 (Chan, 1996; Lu, 1988).³ Major features of the accounting system include (1) use of a cash-based approach, (2) receipt-disbursement double entry mode of recording, and (3) no calculation of profit, loss and depreciation (Aiken and Lu, 1993). Despite recent reforms, cash-based accounting remains the basis of government budgeting and accounting for government administrative units (Cortes, 2006). While China's cash-based approach is by no means unique, in recent years, a number of countries following this approach have switched to an accrual-based governmental accounting (Boxall, 1998; Pallot, 1994; Roy, 2005).⁴ This change is often considered the first step to meet the mandate of the world-wide wave of New Public Management (NPM) which is to reform the system of public management and organization to introduce a new climate of efficacy and efficiency in governmental accounting and budgeting (Cortes, 2006).

Accrual-based governmental accounting is similar to what business enterprises have long used for financial reporting, and its

application in the public sector has been strongly endorsed by a number of influential global agencies, including the World Bank, the IFAC and the IMF. For example, the IFAC has issued a series of "International Public Sector Accounting Standards" (IFAC, 2000a, 2000b). While these standards allow for a cash-based system, they express a clear preference for an accrual-based approach (IFAC, 2007). Accrual-based systems also have received considerable support from the economically more developed members of the Organization for Economic Cooperation and Development (OECD, 1993, 1997, 1998) and are required by the IMF for its Government Finance Statistics System (Efford, 1996; IMF, 1999).

Proponents of accrual-based accounting hold that a cash-based system produces incomplete and inaccurate pictures of the government's resources and obligations and the effects of its fiscal actions. For example, under cash-based accounting, the entire amount of money invested in building infrastructure (e.g., roads, bridges, public buildings and training programs) is treated as an expense of the period in which it is spent. The result is overstating the cost of current period operations without recognizing that the assets being produced can provide service in subsequent periods or even to future generations. Conversely, when the government assumes an obligation or liability (e.g., retirement or unemployment benefits or medical coverage), only the amount of money disbursed in the current period is recorded as expenditure, thus understating the cost implications of making the commitment. Similarly, the proceeds of issuing government debt are recorded as current period revenues, without corresponding recognition of future interest and principal payment obligations.

Critics claim that this kind of accounting practice not only produces misleading information and impedes accurate assessment of the government's financial condition (both short-term and long-term), but it also hampers efforts at improving fiscal management (Eisner, 1991; Eisner and Pieper, 1984; Foltin, 2000; Kullberg, 1987). Perhaps even worse, cash-based systems can create opportunities and incentives for dysfunctional fiscal actions, such as using borrowing to balance the budget (since debt proceeds are counted as revenues), assuming increased future liabilities (e.g., retirement benefits) in exchange for reduced current period payments, and reducing long-term investments (Copley et al., 1997).

While these arguments for the accrual-based approach certainly have conceptual appeal, some factors may affect the costs and benefits of switching to accrual-based accounting (Mol & DeKruif, 2003). For example, Webb (2003) criticizes the insensibility of accrual budgeting to current year appropriations accumulated for future use. This may be why a number of countries have given only partial support to accrual-based systems (e.g., Italy and Spain), while others (e.g., Germany and France) have openly expressed skepticism about the approach.⁵ The experience of the United States further shows that even when a country has chosen to adopt accrual-based governmental accounting, there still can be resistance to its implementation.⁶ In 1990, the U.S. Government Accounting Standards Board (GASB) issued a standard requiring the operating statements of governmental funds to move substantially towards an accrual basis starting with the 1994 fiscal year (GASB, 1990). Then in June 1999, the GASB further issued Statement No. 34 which required accrual accounting for all government activities, and stipulated that all capital assets are generally to be depreciated (Chase & Triggs, 2001; Kravchuk, & Voorhees, 2001; Walker, 2005). Opposition to this standard was so strong that the GASB had to phase in its implementation.⁷

In the case of China, its governmental accounting system has long been held as being inadequate for meeting the demands and challenges of effective fiscal management. For example, a report of the World Bank contained this statement:

When the settlement of payments and wages lags behind the delivery of goods and services to government, this has the same monetary effects as credit to government. Arrears are a regular feature in China....However, arrears go largely unnoticed in the Chinese budget accounts, which are cash-based....In practice, what this means is that China's system of budgetary management fails to take full account of the government's expenditure obligations and therefore masks the true size of the budget deficit. (1995, pp. 37-38)

A later report by the same body (World Bank, 1999, p. 50) repeated the observation that "deficits for China are actually larger than official statistics," but for an added reason: "because official figures fail to include liabilities associated with, for example, the non-performing

loans owned by state-owned commercial banks." The report went on to caution:

China's long-term fiscal sustainability is threatened by the contingent liabilities of the banking sector, the fiscal obligations arising from reform of state-owned enterprises and the social security system, and the unbalanced nature of fiscal relations between the central government and local governments. (World Bank, 1999, p. 50)

China's policy makers are not unaware of the shortcomings of the current governmental accounting system. Jiwei Lou, First Vice Minister of the MOF, reports that the MOF has embarked on a major project to take stock of "the state's capital assets, loans receivable as well as liabilities," in the hopes that "such detailed knowledge about the resource base will enable a stronger foundation for the preparation of refined budget estimates" (Lou, 2000, p.7). Yet, except for a passing acknowledgement of the need to consider alternatives to cash-based accounting, recent initiatives to reform the Chinese governmental accounting system have bypassed this issue.

Gaining a complete understanding of the costs and benefits of cash- vs. accrual-based approaches in any country requires considering how its government accounting system operates within the country's political system, institutions and economic circumstances (Chan, Jones & Lüder, 1996). An undertaking of such scope is beyond our means in this study. Instead, our more modest aim is to provide some preliminary findings on the likely value of such an analysis in the case of China. Specifically, we surveyed Chinese governmental staff and officials actively engaged in the preparation and use of the current governmental accounting reports, and sought their views on the usefulness and limitations of cash- vs. accrual-based approaches, the desirability of change, potential obstacles to change, and the most workable timetable for effecting change.

METHODS

Overview

We used a survey to collect data from a large number of respondents from various levels and positions. Based on discussions with knowledgeable Chinese academics and government officials, we

defined preparers as the accountants who prepare the annual government budgets and annual government accounting reports at the Ministry of Finance or Departments of Finance in the provinces. Relating to users, although GASB Concepts Statement 2 (1994) has identified them to include the general public (citizens), management, legislators, auditors, and creditors (also see Wendland, 2003), the key users of governmental accounting/budget reports in China are those who conduct audits on government departments/agencies at various levels of government. In particular, staff members of the National Audit Office (NAO) at the central government and local levels have been charged with auditing the various levels of government departments/bodies since the 1990s, and have to read carefully the budgets and annual reports of these administrative units in performing their duties. Members of the National People's Congress and Provincial People's Congress also are a major user group, since they are responsible for reviewing and approving the government's annual budgets and accounting reports.

Participants and Survey Distribution

The survey was distributed under the sponsorship of the Chinese Ministry of Finance (MOF), the National Audit Office (NAO) and the Committee of National People's Congress (NPC). The participants were those officials who attended the MOF or NAO short-term training programs in Beijing. Questionnaires were distributed to them during the training. The MOF training program had 550 of its staff at the central, provincial, city and county levels. The NAO training program had 500 of its staff in central government and other levels. The NPC offices helped us to send the questionnaires to 50 congressmen. The packet delivered to each participant contained a cover letter with instructions, a guarantee of anonymity, the survey, and an envelope for anonymous return. It was clearly indicated in the cover letter that the participation in this study was voluntary. After completing the questionnaire, each participant mailed the questionnaire to the China-based member of the research team.

Instrument

The survey instrument was developed in Chinese and contained four main parts. The first part sought demographic information about the participants' current positions, work unit and years of experience.

The second part asked participants to evaluate the usefulness of the current cash-based reports. Based on the prior literature (e.g., Hughes and Points, 2004), official pronouncements (e.g., GAO, 2000; GASB, 1999, 2003; IFAC, 2000c), and consideration of China's current developments, we focused on the use of information in assessing the following aspects of governmental operations: (1) variances in budgeted and actual expenditures, (2) financial position, (3) operating results, and (4) operational efficiency and effectiveness. For each of these four aspects, participants were asked to rate the currently available, cash-based reports on (1) relevancy, (2) adequacy, (3) accuracy, and (4) reliability. Each rating was based on a 5-point scale, with -2 = "Not at all," -1 = "Usually not," 0 = "Neutral," +1 = "Usually is," and +2 = "Always."

As we had mentioned earlier, prior articles and GASB (1999, 2003) have suggested a number of specific shortcomings of cash-based reports. Taking into consideration specific conditions in China, we compiled a list of seven such potential shortcomings and asked participants to rate the severity of each, also on a 5-point scale (1 = "Not severe at all" and 5 = "Extremely severe"). Sample items are "The lack of reporting on the operating results of fixed assets in government budgets results in inefficient management of nation-owned assets" and "Capital expenditures are expensed, which may result in reluctance to make large/critical investments."

The third part of the survey was patterned after the second, and asked participants to evaluate the four attributes of accrual-based governmental accounting (e.g., relevancy, adequacy) relating to the four areas of use (e.g., assessing variances). The fourth and final part of the survey sought more holistic assessments regarding China's governmental accounting system. Participants were asked whether they thought that there was a need to change the system (yes/no) and if they answered "yes," to indicate the system to change to, as well as the most effective time frame and approach for making the change. Three specific approaches to change were listed for participants to choose from: (1) A top-down gradual progress; that is, first implement the reform in some central government departments, gradually spread reform to the whole central government, and then to local government departments. (2) A bottom-up gradual progress. First implement the reform in local government departments, gradually spread the reform to some central government

departments, and then to the whole central government. (3) A parallel progress. Reform is implemented in the central government and the local government at the same time. Space also was provided for participants to write in approaches that they preferred over the three listed.

Participants were also asked to assess the severity of six potential impediments to changing from a cash-based towards an accrual-based system. Two of these potential impediments related to human factors: (1) resistance to reforms because of the decrease in the possibility for manipulations, and (2) increased difficulties in communication and coordination. The remaining four items pertained to technical issues: (1) workload will be increased due to recording capitalized expenditures/ fixed assets; (2) accrual-based accounting/budgeting could be difficult to understand; (3) professional judgment is necessary, which may increase training costs; and (4) more estimates are needed, which may result in lower reliability of information. The 5-point response scale was anchored by 1 = "Not severe at all" and 5 = "Extremely severe."

Since the objective was to seek informed opinions about cash- vs. accrual-based governmental accounting/budgeting, the instrument also contained four "test" questions for ascertaining whether the participant understood how the two approaches treated revenues, expenses, assets and liabilities.⁸ Our plan was to only include those respondents who answered all of the test questions correctly.

RESULTS

Sample Characteristics

Even though participation was anonymous, the sponsorship was effective. Out of 1,100 surveys mailed, 993 completed returned were received for a 90.27% response rate. Of these, only the 604 respondents who answered all four test questions correctly were retained for analysis. Two hundred and fifty-five of these respondents were MOF staff (i.e., preparers), and the remaining 349 were users, of whom 343 were staff of the NAO and six were congressmen. Tables 2 and 3 provide descriptive information on the participants. The preparers were from several different levels of MOF departments, though most worked at the provincial and city levels (35.7% and 45.9%, respectively). The users were associated with a variety of

agencies, with most coming from the government audit departments (95.7%).⁹

TABLE 2
Demographic Characteristics of the Preparers in the Sample

	Frequency	Percent
Ministry of Finance (MOF) Department Level		
Central office	7	2.7
Provincial department	91	35.7
City department	117	45.9
County department	40	15.7
Total	255	100.0
Years of Related Work Experience		
Up to 3 years	79	31.6
4-6 years	24	9.6
More than 6 years	147	58.8
Total	250	100.0

TABLE 3
Demographic Characteristics of the Users in the Sample

	Frequency	Percent
Department Where the Users Work		
Committee of National People's Congress	6	1.7
Audit	334	95.7
Finance	3	0.9
Economic management	1	0.3
Statistics	3	0.9
Economic analysis and forecast	2	0.5
Total	349	100.0
Years of Related Work Experience		
Up to 3 years	80	23.0
3-6 years	51	14.7
6-10 years	70	20.1
More than 10 year	147	42.2
Total	348	100.0

Evaluation of the Perception of the Current Cash-based System

Table 4 presents the participants' evaluations of the information provided by the current system. Recall that the scale ranged from -2 to 2, with zero representing a neutral assessment. Overall, while the averages of preparers' and users' evaluations are positive, they are only marginally favorable (0.293 and 0.365, respectively) and five of the average ratings are negative. The preparers and users do not have significantly different assessments of the quality of information

TABLE 4
Preparers' and Users' Evaluation of Selected Attributes of Current Cash-based Governmental Accounting Information

Information Attribute	Preparers	Users	Tests of difference	
			T statistics	Z statistics from Mann-Whitney U test
Specific Use: Assessment of variances in budgeted and actual expenditures				
Relevancy	0.794	0.741	-0.47	0.76
Adequacy	0.575	0.580	0.10	0.34
Accuracy	0.508	0.457	-0.49	0.38
Reliability	0.079	0.074	-0.01	0.02
Specific Use: Assessment of financial position				
Relevancy	0.754	0.665	-1.05	-0.76
Adequacy	0.508	0.438	-0.79	-0.31
Accuracy	0.403	0.319	-1.00	-0.57
Reliability	0.024	-0.076	-1.05	-0.89
Specific Use: Assessment of operating results				
Relevancy	0.359	0.683	3.35*	3.73*
Adequacy	0.225	0.506	2.93*	3.12*
Accuracy	0.253	0.348	1.03	0.86
Reliability	-0.086	-0.092	-0.10	-0.17
Specific Use: Assessment of operational efficiency and effectiveness				
Relevancy	0.088	0.569	3.83*	4.17*
Adequacy	0.016	0.363	2.76*	3.17**
Accuracy	-0.040	0.284	2.65*	2.78*
Reliability	0.292	-0.147	-3.17*	-3.10*
Grand mean	0.293	0.365		

Notes: Data are based on a 5-point scale ranging from -2 (low) to +2 (high).

* = significant at 5% level

** = significant at 1% level

available for evaluating budget variances and financial position. However, the preparers rated significantly less favorably the information's relevancy and adequacy for assessing the government's operating results. They also rated significantly less favorably the relevancy, adequacy and accuracy of the current system's information for assessing the government's operational efficiency and effectiveness. The only item with a significantly less favorable rating from users is for the information's reliability for assessing efficiency and effectiveness (-0.147 vs. 0.292). Overall, the ratings of both users and preparers indicate serious reservations about the current cash-based accounting reports.

Table 5 reports the participants' assessment of the cash-based system's potential shortcomings. Recall that these assessments were based on a 5-point scale, with 1= "Not severe at all" and 5="Extremely severe." Out of the seven potential shortcomings, the participants report being most concerned with the impacts of unrecorded depreciation (3.315 and 2.904 for the preparers and users, respectively) and unrecorded contingent liabilities (2.772 and 3.000 for the preparers and users, respectively) on the government units' financial position, with the preparers' average rating being significantly higher in the former case. The users are significantly more concerned that the lack of matching between revenues and costs makes it difficult to evaluate the decisions that generate them (mean severity ratings of 1.955 and 2.285 for preparers and users, respectively). Two other shortcomings are rated as being somewhat severe: that operating results of state enterprises are not recorded, which hinders the management and usage of state assets (2.754 and 2.833 for the preparers and users, respectively), and the lack of reporting on the operating results of fixed assets (2.772 and 2.592 for the preparers and users, respectively). Finally, both preparers and users express are relatively less concerned that expensing capital expenditures may induce a reluctance to make large/critical investments (1.912 and 2.030 for the preparers and users, respectively).

Evaluation of the Perception of Accrual-based System

Table 6 presents the participants' comparative evaluations of information provided under cash-based vs. accrual-based accounting. We only solicited the preparers' evaluations based on the premise

TABLE 5
Preparers' and Users' Assessment of Potential Shortcomings of
Current Cash-based Governmental Accounting Information

Potential Shortcoming	Participants		Test of difference in means/medians	
	Preparers	Users	T statistics	Z statistics from Mann-Whitney U test
Accounting for long-term assets				
Lack of report on the operating results of fixed assets in government budgets results in inefficient management of nation-owned assets.	2.772	2.592	-1.35	1.45
Depreciation is not recorded, making it impossible to evaluate an asset's real value from the cost, and therefore, the reported financial position could be misleading.	3.315	2.904	-3.27*	-3.25*
Capital expenditures are expensed which may result in unwillingness for large/critical investments.	1.912	2.030	0.91	0.80
Accounting for liabilities				
Misclassification of short-term expenditures (e.g. pension, etc) as long-term hidden liabilities could underestimate current liabilities, which makes the government performance appear better than it really is.	2.061	2.054	-0.06	-0.02
Collaterals offered by the government for state enterprises are not reported, which underestimates the liabilities.	2.772	3.000	1.70	1.52
Accounting for costs and revenues				
Revenues are not fully matched with expenses, making it difficult to evaluate the decisions that generate them.	1.955	2.285	2.57*	2.89*
Accounting for investing activities				
Operating results of state enterprises are not recorded, which hinders the management and usage of state assets.	2.754	2.833	0.59	0.56

Notes: Data are based on a 5-point scale ranging from -2 (low) to +2 (high).

* = significant at 1% level.

that they would be more knowledgeable about the real situations in their government units, such that they would have a basis for judging which of the two approaches can better reflect the realities being reported on. In contrast, users tend to be physically distant from the units that they are evaluating. As such, their perception of the underlying realities would likely be shaped by the cash-based reports, and they would have less information to independently judge whether accrual-based reports would better capture the underlying realities.

Both the t-statistics and z-statistics in Table 6 indicate that the preparers consider accrual-based information to be much more useful than information from the cash-based system. Each of the 16 comparisons between these two systems (4 uses times 4 information attributes) is higher for the accrual-based system at the one percent significance level. In particular, the participants view the accrual-based system as being especially superior for assessing the government's operating results and operational efficiency and effectiveness.

TABLE 6
Preparers' Evaluations of Specific Use of Selected Cash-based vs. Accrual-based Accounting Information Attributes

Information attribute	Cash Basis ^a	Accrual Basis	Tests of difference in means/medians	
			T statistics from paired- t test	Z statistics from Mann-Whitney U test
Specific Use: Assessment of variances in budgeted and actual expenditures				
Relevancy	0.794	0.992	-2.40 *	-2.21*
Adequacy	0.575	0.909	-4.72**	-4.57**
Accuracy	0.508	0.837	-4.20**	-4.04**
Reliability	0.079	0.329	-2.90**	-2.90**
Specific Use: Assessment of financial position				
Relevancy	0.754	1.081	-4.33**	-4.11**
Adequacy	0.508	1.044	-7.40**	-6.60**
Accuracy	0.403	0.871	-6.04**	-5.59**
Reliability	0.024	0.319	-3.46**	-3.23**

TABLE 6 (Continued)

Information attribute	Cash Basis ^a	Accrual Basis	Tests of difference in means/medians	
			T statistics from paired- t test	Z statistics from Mann-Whitney U test
Specific Use: Assessment of operating results				
Relevancy	0.359	1.061	-8.96**	-7.75**
Adequacy	0.225	1.000	-9.93**	-8.31**
Accuracy	0.253	0.918	-8.09**	-7.24**
Reliability	-0.086	0.384	-5.35**	-5.14**
Specific Use: Assessment of operational efficiency and effectiveness				
Relevancy	0.088	1.020	-11.75**	-9.51**
Adequacy	0.016	0.948	-11.96**	-9.59**
Accuracy	-0.040	0.884	-11.48**	-9.35**
Reliability	0.292	0.392	-7.13**	-6.69**
Grand mean		0.293	0.812	

Notes: Data are based on a 5-point scale ranging from -2 (low) to +2 (high).

* = significant at 5% level.

** = significant at 1% level.

^a Since the current Chinese government accounting system is cash-based, the numbers in this column are the same as those in the "Preparers" column in Table 4.

Table 7 reports the participants' perceptions regarding the severity of the six listed implementation barriers. Both preparers and users are most concerned about the foreseeable increased workload in recording capitalized expenditures/fixed assets (2.731 and 2.878 for the preparers and users, respectively). They also consider the increased difficulties in communication and coordination to be a possibly severe issue (mean ratings of 2.329 and 2.556 for preparers and users). Beyond that, the preparers are significantly more apprehensive than the users about the professional judgment required by accrual-based accounting (2.009 for preparers vs. 1.779 for users), while the users are significantly more concerned than the preparers that (1) the decreased opportunities for the government to manipulate budgetary information will cause resistance to the reform (2.417 for users vs. 1.863 for preparers); and (2) information reliability may be decreased due to more estimates being needed by the accrual-based method (1.752 for users vs. 1.284 for preparers).

TABLE 7
Perceived Severity of Possible Impediments to Changing from Cash-based to Accrual-based Governmental Accounting#

Possible impediment	Participants		Test of difference in means/medians	
	Preparers	Users	T statistics	Z statistics from Mann-Whitney U test
Human Factors				
Resist reforms because of the decrease in the possibility for manipulations.	1.863	2.417	4.36***	4.40***
Increase difficulties in communication and coordination.	2.329	2.556	1.79	1.94
Technical Factors				
Increasing workload in recording capitalized expenditures/fixed assets.	2.731	2.878	1.14	1.29
Difficulties in understanding the accrual-based information	2.247	2.068	-1.49	-1.48
More professional judgment is necessary which may increase training costs	2.009	1.779	-2.01*	-2.33*
More estimates are needed which may result in lower reliability of information.	1.284	1.752	3.29**	3.25**

Notes: Data are based on a 5-point scale ranging from -2 (low) to +2 (high).

* = significant at 5% level.

** = significant at 1% level.

Overall Attitudes towards Change

Since all of the means in Table 7 are under three (on a one to five scale), it seems that the participants do not see the impediments as being so severe as to preclude changing to an accrual-based approach. This inference is supported by the participants' overall evaluations of the need for change. Table 8 shows that 229 (89.8%) preparers and 308 (89.3%) users support a shift away from strictly cash-based governmental accounting towards the accrual-based approach. However, rather than supporting moving to a pure accrual-based system, most participants favor a modified form that is in between the two extremes.

TABLE 8
Participants' Overall Assessment of the Need to Reform the Current Governmental Accounting System

	Frequency	Percent
Preparers		
Need reform	229	89.8
Do not need reform	26	10.2
Total	255	100.0
Users*		
Need reform	308	89.3
Do not need reform	37	10.7
Total	345	100.0

Notes: * = Not all respondents are included because some did not answer these questions.

Table 9 indicates that 97 (42.2%) preparers and 122 (39.7%) users favor the modified cash basis, while 98 (42.6%) preparers and 111 (36.2%) users choose the modified accrual basis as the desired target.¹⁰ As for the reform process, the top-down gradual progress approach is favored by the largest number of participants, though there also is substantial support for a parallel approach which involves simultaneous implementation at the central and local government levels. Finally, the majority of participants consider it best to spread the reform process over a 3-5 year span, rather than adopting either a more drastic or drawn out approach.

TABLE 9
Participants' Views on the Desired Direction, Approach and Time Table for Reforming the Governmental Accounting System

Participants' Views on:	Preparers*		Users*	
	Frequency	Percent	Frequency	Percent
Desired Direction				
Cash Basis (No change)	7	3	13	4.2
Modified Cash Basis	97	42.2	122	39.7
Modified Accrual Basis	98	42.6	111	36.2
Accrual Basis	28	12.2	61	19.9

TABLE 9 (Continued)

Participants' Views on:	Preparers*		Users*	
	Frequency	Percent	Frequency	Percent
Approach^a				
Approach 1	103	45	154	50.3
Approach 2	28	12.2	56	18.3
Approach 3	76	33.2	81	26.5
Approach 4	22	9.6	15	4.9
Time Table				
1 year	8	3.5	9	3.0
3 years	130	56.5	151	50.2
5 years	75	32.6	98	32.5
10 years	14	6.1	22	7.3
Not Sure	3	1.3	21	7.0

Notes:

* = Not all respondents are included because some did not answer these questions.

a: Approach 1: Gradual progress - top-down. First implement the reform in some central government departments, gradually spread reform to the whole central government, and then to local government departments.

Approach 2: Gradual progress - bottom-up. First implement the reform in local government departments, gradually spread reform to some central government departments, and then to the whole central government.

Approach 3: Parallel progress. Reform is implemented in the central government and the local government at the same time.

Approach 4: A variety of other (unspecified) approaches.

DISCUSSION AND CONCLUSION

The Chinese government is facing ever-increasing demands for service at the same time that its share of the country's GDP is steadily shrinking and annual deficits are increasing. The country's governmental accounting system also has been criticized as being inadequate for guiding efficient and effective management and for assessing performance. This combination of developments motivated us to investigate the desirability and feasibility of a change from cash-based to accrual-based governmental accounting, as the latter has received considerable support as a tool for improving efficiency and effectiveness in the public sector.

Our large-scale survey of preparers and users of China's governmental accounting reports revealed that both preparers and users harbor serious concerns about the usefulness of reports produced under the current system, with preparers being even less positive than users about the current reports' ability to guide operational efficiency and effectiveness. And when asked to compare the cash- vs. accrual-based approaches to governmental accounting, the preparers overwhelmingly selected the latter as being the superior approach. Consistent with the preceding results, both users and preparers reported strong support for a change towards an accrual-based system. This is despite their explicit recognition that such a change will face numerous obstacles and challenges.

Of even greater importance is the need to recognize that all systems involve a multitude of participants, and that the effects of any system depend on the interplay of numerous factors and relationships. In addition to governmental officials and staff members involved in governmental accounting/budgeting, there likely are other groups (e.g., international financial agencies and government decision makers) with an interest in the attributes of the Chinese governmental accounting system, and the impacts of a change to an accrual-based approach on these other groups also need to be assessed. The literature on contingency theory (e.g., Fisher, 1995; Dent 1990) provides a useful structure for identifying various interested parties, factors and interrelationships in a system. With particular reference to the public sector, Godfrey, Devlin, and Merrouch (1996), as well as Jaruga and Nowak (1996), have integrated prior research (e.g., Lüder, 1992) to develop contingency models which identify structural and "stimuli" variables that influence the expectations and behaviors of both the preparers and users of government financial information. These models suggest, for example, that the demand for change may arise from such variables as societal structure (e.g., social institutions and competition), political structure (e.g., external political coalitions) and administrative structure (e.g., organizational structure and competition), while implementation barriers may include such factors as systems of values, content of accountability, the legal system, and the shape of jurisdiction. Perhaps it is because the preparers recognized the importance of these other factors that they gave accrual-based governmental accounting an overall rating of 0.812 (Table 6); while this is much higher than the grand mean of 0.293 for

cash-based accounting, it still is substantially below the 2.0 maximum.

While the findings of this study are useful for informing deliberations about ways to improve China's governmental accounting system, they are insufficient for definitive conclusions about the desirability of change or for guiding the change process. One limitation of this study is its exclusive reliance on a survey. To guard against potential biases in people's responses to a survey (e.g., self-serving and social desirability biases, errors of perception and recollection), it is important to validate their responses by examining, for example, if decisions or evaluations actually would differ under cash- vs. accrual-based systems. Establishing such causal relationships would require other research methods, such as a controlled experiment. More generally, use of multiple methods (e.g., surveys, experiments, archival analyses) can help to enhance the reliability and richness of the research findings (Birnberg et al., 1990). In addition, investigating more of the key factors suggested in prior studies (e.g., Jaruga & Nowak, 1996) in future research will improve estimates of the magnitudes of costs and benefits, direction and size of support for and resistance to change, and, ultimately, the desirability of the change and the most effective process.

NOTES

1. In the twenty years between 1978 and 1998, government revenues as a proportion of China's GDP have declined from 31.2 percent to 12.4 percent (Holzer & Zhang, 2004).
2. The Public Sector Committee of IFAC was transformed into International Public Sector Accounting Standards Board (IPSASB) in 1997. IPSASB indicates in its Strategy and Operational Plan 2007-2009 that IPSASB has committed to full International Financial Reporting Standards (IFRS) convergence and has promulgated 24 accrual basis IPSASs in recent years.
3. Following this approach, we use the terms Chinese governmental accounting and budgeting interchangeably.
4. Naik (2005) reports that by 2003, the following countries had required their governments to use accrual-based accounting for financial reporting: Australia, Finland, New Zealand, Sweden and the United States. Effective in 2005 and 2006, respectively,

Canada and the United Kingdom also mandate accrual-based governmental accounting systems. Netherlands will adopt accrual-based governmental accounting and budgeting in 2007. Cortes (2006) provides a complete summary of countries that are in different stages of adopting cash- or accrual-based governmental accounting.

5. Detailed reviews of these countries' experiences with, and views on cash- vs. accrual-based governmental accounting are provided by Caperchione and Mussari (2002) for Italy, Montesinos (2002) for Spain, Lüder (2002) for Germany, and Chevauchez (2002) for France.
6. Chan (2002) provides a detailed review and discussion of the evolution of governmental accounting practices in the U.S.
7. In Phase 1, U.S. government units with total revenues of \$100 million or more were required to implement GASB Statement No. 34 for fiscal years beginning after June 15, 2001. Phase 2 required government units with total revenues of \$10 million or more, but less than \$100 million, to implement the new standard for fiscal years beginning after June 15, 2002. Phase 3 required government units with total revenues of less than \$10 million to implement the new financial reporting model for fiscal years beginning after June 15, 2003.
8. As will be explained later, only preparers were asked to compare the cash- and accrual-based approaches. Only their version of the survey contained these test questions.
9. The results were not qualitatively different whether the six congressmen were included or excluded.
10. Naik (2005) provides brief definitions of modified cash and modified accrual accounting systems. Modified cash accounting uses mainly cash-based principles (i.e., reports cash transactions only) except that at the end of a period, adjustments are made to recognize some non-cash items such as accounts receivable and payable. Modified accrual accounting is basically accrual-based with one significant divergence: It expenses capital expenditures.

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