Properly Treating Activities of Nonautonomous Pension Schemes for Government Employees

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Abstract

Proper treatment of nonautonomous pension activities for government employees is needed for fiscal analysis. Failure to properly classify these data implies continued failure of fiscal data to reveal difficulties where populations are aging. Treating all transactions of these government pension schemes as revenue or expense is misleading. The pension payments from employees, in accord with the *Government Finance Statistics Manual 2001* (*GFSM 2001*) methodology, should be treated as government borrowing and not revenue. Similarly, pension benefits paid by these schemes should be treated as debt repayments rather than expense. Outstanding pension obligations should be recognized as debt. Also, fiscal data compiled under the 1986 GFS methodology, unlike the *GFSM 2001* methodology, particularly distorts the fiscal picture in periods of pension reform.

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Contents

I. INTRODUCTION

Economic events of government pension schemes need a proper statistical treatment so that they can be appropriately interpreted in fiscal analysis. Specifically, government transactions of pension schemes for government employees, where reporting is available on an accrual basis, should be treated in a fundamentally different way from cash-reported transactions of retirement schemes.[2] Many countries with government pension schemes currently report, within the framework of *A Manual on Government Finance Statistics*, 1986 (*GFSM 1986*), government deficits, in line with cash-based reporting, that mislead many observers about the sustainability of fiscal policies, and about the value of engaging in pension reform.

The methodology of the *Government Finance Statistics Manual 2001* (*GFSM 2001*) provides a better framework for fiscal analysis than that of *GFSM 1986*, is more comprehensive, and is more aligned with economic and financial convention, largely because it is based on accrual accounting.[3] Major elements of the *GFSM 2001* methodology are that it is based on accrual accounting and it calls for the compilation of complete balance sheet data where all changes in balance sheet items are integrated with, and precisely reflect, recorded economic events.[4] The *GFSM 1986* methodology, based on cash transactions, is severely limited in its ability to provide a transparent presentation of economic events and, in view of its cash basis, calls for treating transactions of all government pension schemes as revenue or expenditure, and not financing items.

This paper addresses, with selected examples, economic events of nonautonomous pension schemes for government employees, as autonomous pension schemes are defined as financial corporations and the focus of this paper is on government.[5] These schemes concern unfunded

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[2] Many observers refer to the cash-based pension schemes as pay-as-you-go (PAYG) pension schemes implying that payment is constrained by receipts, but views on PAYG definitions differ. One point here is simply that cash-based reporting systems alone do not permit the adequate reporting of transactions (or debt) of nonautonomous pension schemes for government employees in a transparent manner.

[3] The Statistics Department, in cooperation with the Fiscal Affairs Department, replaced the *GFSM 1986* with the *GFSM 2001*. The compilation of fiscal data according to the *GFSM 2001* methodology is scheduled to be implemented in most countries in stages over many years.

[4] Economic events comprise transactions and other flows such as revaluations. Economic events (or economic flows), in accordance with the *System of National Accounts 1993* (*SNA 1993*, page 72), "reflect the creation, transformation, exchange, transfer or extinction of economic value." See Kopits (1998).

[5] Aside from pension schemes for government employees, governments also may be financially responsible for public corporation pension schemes (such as that taken over from French Telecom). See paragraph 4.98 in *SNA 1993* for a discussion of corporate units.

as well as funded schemes, defined as those holding financial reserves, regardless of the extent to which resources are adequate to match the liabilities.[6]

Section II outlines analytical needs for statistical methodology in addressing government pension systems. Because of methodology's critical role, section III outlines essential elements of the *GFSM 1986* and *GFSM 2001* methodologies and the criteria for treating events in schemes for government employees differently than those of pension schemes where classifications are made in accord with the GFSM 1986. Section IV describes, through nine illustrative economic events, how accrual accounting, including the provision to compile interest accruing on pension liabilities, permits a fundamentally better way to examine government pension schemes through a proper classification of economic events. It also addresses the particular need to use the *GFSM 2001* methodology for those schemes in the transition to autonomous pension schemes and draws policy implications permitted under the richer methodology. Section V has closing remarks.

II. Analytical Needs For Statistical Methodology

Two major criteria for assessing government activities, including those of retirement systems, are sustainability and financing.[7] The key element for assessing fiscal sustainability is the measurement of changes in net worth of government. The financing of these systems should be reflected in data affecting net financial worth. These two elements are the focus of the *GFSM 2001* methodology.

There is wide agreement on the methodological treatment of economic events for pension schemes under cash-only accounting, namely, (1) government payments to beneficiaries are treated as expense ("expenditure" in the 1986 methodology); (2) the government receipts from contributions, even if associated with specific pension benefits, are treated as revenue; and (3) no pension liabilities are recognized in the government balance sheet. This treatment for many retirement schemes seems proper, and this approach is the way they currently maintain their financial records.[8] But government employee pension schemes with accrual

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[6] The reserves (in funded schemes), in conformity with paragraph 8.63 of *SNA 1993*, must be segregated from other reserves even though such funds do not constitute separate institutional units from employers.

[7] See Tanzi (1993), pages 13-20; and Blejer (1993).

[8] The *SNA 1993* explains that social benefits comprise social insurance benefits and social assistance benefits. Social insurance schemes are those in which social contributions are paid to secure entitlement to social insurance benefits (paragraph 8.55). Social assistance benefits are transfers made by the government sector to households outside of any social insurance scheme (paragraph 8.75).

An example of a social assistance scheme is the government retirement system in Australia. Australians upon reaching retirement age automatically qualify, subject to certain income thresholds, for retirement benefits; no contributions by employees or employers are linked to these benefits; no associated liabilities are recognized. Accordingly, transactions of this system are treated like other

(continued…)

data can and should be conceptually different from those permitted where the reporting is only on a cash basis.[9]

III. Analytical Framework For Compiling GFS

For fiscal analysis, an appropriate analytical framework is needed. The statistical context that permits a proper analysis of fiscal data for all types of government activity is the *GFSM 2001* methodology.[10] It replaces the *GFSM 1986* methodology, which calls for compiling data only on cash transactions and outstanding debt. To address the critical roles that methodology and the reporting basis for transactions play in permitting adequately compiled data on pension systems, the *GFSM 1986* and *GFSM 2001* methodologies are described.

A. *GFSM 1986* Methodology

The *GFSM 1986* was developed in the context of Keynesian macro-economic thought and cash-based accounting systems.[11] Those views did not reflect the ongoing focus on microeconomic foundations, the need for more transparency in government operations, and the desire for more meaningful measures of fiscal activities. The limited data called for under the *GFSM 1986* methodology seriously constrain and possibly distort policy makers' views of options and their consequences. Many observers found in cash-based government accounts certain measures, mainly the fiscal deficit, that coarsely help monitor government actions affecting the economy in the short term.[12]

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social assistance systems, where the criterion for benefits is simply age. The cash only approach is also consistent with one interpretation of the *SNA 1993*, namely, that retirement payments are contingent as payments are only made to individuals in the event that they are still alive at retirement age. For retirement systems such as that in Australia, supplemental memoranda data on these fiscal commitments (not legal liabilities), given their large amounts, are quite important.

[9] See Mackenzie (1997), Canziani (1995), and Chand (1995).

[10] The *GFSM 2001* methodology is harmonized with the 1993 *SNA*, which calls for the complete integration of stock and flow data. Harmonization implies that differences in somewhat similar time series compiled under GFS and SNA methodologies are identified.

[11] While specific cash-based transactions that determine the deficit in the *GFSM 1986* methodology are defined and identified, many observers draw misleading inferences from deficit data about sustainability or solvency that this limited statistical system was not designed to address.

[12] For a discussion of diverse views on various measures of fiscal deficits, see volume edited by Blejer (1993). Also see Tanzi (1993, pages 13-20). If any consensus existed at that time, it was that *the* fiscal deficit did not exist while many alternative measures for various reasons were acknowledged to exist. See also Blejer (1988) and IMF (1995). Also, the historical focus was excessively on single periods rather than on several periods.

During recent decades, the context for fiscal analysis changed dramatically, and shortcomings in fiscal statistics became increasingly evident.[13] Inadequacies inherent in deficits compiled according to the *GFSM 1986* methodology became obvious as (1) GFS data do not include governments' accumulating arrears, assumptions and cancellations of debt, and valuation changes, and (2) other activities, such as sales of nonfinancial assets and receipts from privatization, had impacts on the deficit often thought to be misleading, and (3) other statistical methodologies (national accounts, balance of payments, and monetary and financial) have changed to the accrual basis for reporting and to valuing assets on a market basis. The focus has shifted away from misleading, and often differing, measures of cash deficits, because the objectives of transparency, good governance, and sustainability of government activities were brought to the fore.

The limited character of the *GFSM 1986* can be examined by comparing tables summarizing *GFSM 1986* (Table 1) and *GFSM 2001* methodologies (Tables 2 through5) and by reviewing nine illustrative economic events--tables and events are listed in Chart 1-- and by reviewing how these events are treated in Table 1. (These events as classified in accordance with the *GFSM 2001* are examined in detail in section IV.)

Table 1 is a summary presentation of major classification groupings in the *GFSM 1986* methodology and displays the limited character of this GFS methodology through its cash-based reporting of economic events. Only three of nine typical economic flows of government pension systems are reflected in the *GFSM 1986* methodology, and these three in this framework are often misinterpreted. Specifically, as shown in Table 1, only the first economic event (the contribution), the fourth event (the pension benefit payment), and the ninth event (the sale of pension liabilities) are reported under the 1986 methodology. With such limited data revealed by this methodology, many analysts misinterpret the impact of government pension activities on sustainability. Thus, a more complete framework for identifying economic events is required and was developed.[14]

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[13] See, for example, Buiter (1993).

[14] In the context of the *GFSM 1986* methodology and cash accounting, attempts to analyze government pension systems has been mainly through long-term projections of deficits that analysts can perceive fiscal difficulties. With the *GFSM 2001* methodology and accrual accounting, a comprehensive and valid review of fiscal activities can be based on actual records, including pension liability records, up to the present assuming credible actuarial data. (Where credible actuarial data exist, the valuation of pension liabilities are as accurate as the valuation of most other long-term liabilities.) Unlike long-term projections of fiscal data compiled according to the *GFSM 1986* methodology, the historical data compiled according to the *GFSM 2001* methodology do not depend on hypothetical growth rates, future employment levels, the future incurrences of liabilities, and the vagaries of basing projections on historical periods with differing end points. Changes in these assumptions by different analysts can lead to much different implications for fiscal policy. In any event, statistical methodology is used for compiling data based on existing facts and not projections, and existing facts in the *GFSM 2001* methodology include recognized pension liabilities to government employees.

Chart 1

ANALYTICAL FRAMEWORK, IDENTIFIED CIRCUMSTANCES, AND ECONOMIC EVENTS

I. ANALYTICAL FRAMEWORK

Table 1. Summary Statement under the *GFSM 1986* Methodology

Table 2. Integrated Presentation of Stocks and Flows under the *GFSM 2001* Methodology 1/

Table 3. Statement of Government Operations

Table 4. Statement of Other Economic Flows

Table 5. Balance Sheet

II. IDENTIFIED CIRCUMSTANCES

Accrual recording of economic events for a nonautonomous government pension system. Opening balance sheet comprises liquid deposits and pension liabilities of 100 each and no net worth.

III. ECONOMIC EVENTS (Entry values equal listing numbers.)

1. Contributions of 1 by employees for government pension system.
2. Directly associated with contributions are increased liabilities of 2 (reflecting present value of increase in the scheme's defined benefits). 2/
3. Interest of 3 accruing on government pension system holdings of T-bills.
4. Pension benefit payments of 4 (which reduce liabilities by 4).
5. Liability increase of 5 to reflect higher-than-expected inflation and cost of living adjustment (COLA).
6. Liability increase of 6 to reflect additionally expected longevity.
7. Liability reduction of 7 to reflect new law providing fewer benefits.
8. Liability increase of 8 due to accrued interest on pension liabilities. 3/
9. Payment of 9 to autonomous pension fund in exchange for its acceptance of liabilities of government pension scheme.

Note: These economic events represent only the pension-related events under identified circumstances, and illustrate typical activities of government regarding government employee pension schemes. This set of economic events is properly classified (according to GFSM 2001). The entry values for these events are shown explicitly after the descriptors in Table 1 and Tables 3-4. The total effects of events are directly recorded only in columns of Tables 1, 3, and 4. Tables 2 and 5 (with data on initial circumstances) have calculated data.

1/ This table is a summary of Tables 3, 4, and 5, each of which concerns the GFSM 2001 methodology.

2/ The excess of added liabilities (+ 2) over the contributions (+ 1), with increases in deposits, implies an expense transaction causing net worth to decrease (by 1).

3/ The typically large expense of accrued interest on government pension liabilities and the corresponding increase in the value of liabilities are of major importance.

Table 1. Summary Statement under the *GFSM 1986* Methodology

	Item	Stocks and Flows
	CASH TRANSACTIONS	
A	TOTAL REVENUE AND GRANTS	1
	REVENUE **(+ 1)**	1
	GRANTS	
B	EXPENDITURE AND LENDING MINUS REPAYMENTS	13
	EXPENDITURE **(+ 4 + 9)** 1/	13
	LENDING MINUS REPAYMENTS	
C	DEFICIT (-) OR SURPLUS (item A - item B)	-12
D	TOTAL NET BORROWING	
	NET DOMESTIC	
	NET FOREIGN	
E	USE OF CASH BALANCES 2/ **(- 1 + 4 + 9)**	12
	STOCKS (end of period)	
F	TOTAL DEBT 3/	0
	DOMESTIC	
	FOREIGN	

Note: (1) One accounting rule is that the algebraic sum of items C, D, and E equals zero. The sum of items D and E represent total financing. Debt data are for the end of period.

(2) The amounts of individual entries for the economic events outlined in Chart 1 are noted after the descriptors for individual lines, as shown above. The sum of these entries is shown in the right-hand column.

(3) Only three of the nine economic events are to be compiled according to the *GFSM 1986* methodology, which is reported on a cash basis, and these three reported entries are likely to be misinterpreted. More precisely, the employee contribution of 1 is shown as revenue rather than borrowing, the pension benefit payment of 4 is shown as expense rather than amortization, and the payment of 9 in exchange for equivalent pension liabilities is shown as an expenditure rather than an exchange of financial instruments. In brief, the effect of events on the deficit with the *GFSM 1986* methodology are substantially different than the effect on those events on changes in net worth (or on net lending/borrowing) under *GFSM 2001* methodology.

1/ Many compilers may be encouraged to avoid reporting expenditure of 9 for selling pension liabilities. But they could not justify this avoidance as the *GFSM 1986* does not call for reporting pension liabilities and thus they could not debit net borrowing as the counterpart of the cash credit.

2/ A positive use of cash balances under the *GFSM 1986* methodology, which means a reduction of cash balances, is shown by convention as a positive entry.

3/ As there were changes in cash balances but no net borrowing, outstanding debt would not change during the period. Outstanding debt (compiled under the *GFSM 1986* methodology), which does not include pension liabilities, would remain at zero.

B. *GFSM 2001* Methodology

In view of more and more obvious analytical needs and the *GFSM 1986* methodology's shortcomings, the *GFSM 2001* methodology is demonstrated, through descriptions and illustrative examples, as the better methodology for analyzing government pension schemes, mainly because it calls for accrual accounting and identifies government pension liabilities to households. This section, including Table 2 through Table 5, describes the *GFSM 2001* methodology.

Table 2 shows the entire integrated analytical framework of the *GFSM 2001* methodology (albeit without more detailed classifications that can be found in supporting tables, Table 3 through Table 5).

Table 3, the statement of government operations or transactions, corresponds roughly with the transaction statement under the *GFSM 1986* methodology. Major differences are that the *GFSM 2001* methodology (1) calls for reporting transactions on an accrual rather than only on a cash basis; (2) includes lending minus repayments (including privatization receipts) in financing rather than "above the line" as a component of the deficit/surplus balance under the *GFSM 1986* methodology; (3) categorizes acquisitions of nonfinancial assets under net acquisitions of nonfinancial assets rather than as expenditure; (4) categorizes sales of nonfinancial assets under net acquisitions of nonfinancial assets rather than as revenue; and (5) focuses more appropriately on both the net operating balance (for sustainability) and net lending/borrowing (for financing).[15] According to the *GFSM 2001* methodology, revenue and expense, respectively, are defined as transactions increasing and decreasing net worth.

Table 4 addresses a major gap in the *GFSM 1986* methodology, namely, other flows. Valuation changes and other changes in volume comprise other flows and concern all assets (financial and nonfinancial) and liabilities.[16] Major revaluations of financial or nonfinancial assets can play a major role in affecting the sustainability of fiscal policies, as is the case for transaction flows. Just as revenue and expense are considered the only elements in accounts that reflect how transactions affect net worth, other flows—revaluations and other changes in volume—are the only nontransaction accounts that affect net worth.

Table 5 shows at the beginning and end of the period the balance sheet items (each based on market values). Major elements of the presentation of the *GFSM 2001* methodology include:

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[15] Net lending/borrowing—aside from, importantly, its accrual basis, its inclusion below-the-line of transactions on net lending for policy purposes, and its treatment of capital revenue, capital expenditure, and transactions in kind—corresponds closely with deficit/surplus defined under the *GFSM 1986* methodology.

[16] The improvement in methodology (to the *GFSM 2001)* reflects well-based criticism by Buiter (1993) who observed that conventionally defined financial balances omitted major elements such as revaluations of publicly owned assets and liabilities.

Table 2. Integrated Presentation of Stocks and Flows under the *GFSM 2001* Methodology

	Item	Stocks	Flows		Stocks
		Opening Balance Sheet	Transactions	Other Economic Flows 1/	Closing Balance Sheet
1	**REVENUE (transactions increasing net worth)**		3		
11	Taxes				
12	Social contributions				
13	Grants				
14	Other revenue		3		
2	**EXPENSE (transactions reducing net worth)**		9		
21	Compensation of employees		1		
22	Use of goods and services				
23	Consumption of fixed capital				
24	Interest		8		
25	Subsidies				
26	Grants				
27	Social benefits				
28	Other expense				
[3-6]	***NET WORTH AND ITS CHANGES 2/***	0	-6	-4	-10
	NONFINANCIAL ASSETS				
	Fixed assets				
	Inventories				
	Valuables				
	Nonproduced assets				
	NET FINANCIAL WORTH AND ITS CHANGES 3/	0	-6	-4	-10
	FINANCIAL ASSETS	100	-9		91
	Domestic	100	-9		91
	Foreign				
	Monetary gold and SDRs				
	LIABILITIES	100	-3	4	101
	Domestic	100	-3	4	101
	Foreign				
	Memorandum Items 4/				

Note: One accounting rule is that entries for opening balance sheet items plus entries for transactions and other flows equal the entries in the closing balance sheet. The accounting rule for each column is that the sum of entries for net worth and liabilities equals the entries for total assets. Entries for revenue and expense (temporary accounts in net worth) complete the core of the integrated statement (as enclosed by bold lines), and the algebraic difference between revenue and expense equals net operating balance. The numbering of items in this integrated table is more detailed in the supporting tables on stocks and flows. Major balancing items, concerning net worth and net financial worth, are shown in italics. Table 2 through Table 5 represent the *GFSM 2001* methodology, while Table 1 represents the *GFSM 1986* methodology.

1/ Other economic flows comprise valuation changes and other non-transaction economic flows. See Table 4.

2/ The changes in net worth due to transactions (code 3 -- revenue less expense) is defined as the net operating balance. For this presentation, changes in net worth due to other flows comprise the revaluations and other changes in volume (code 4) accounts in net worth, and the stock of net worth is identified by code 6.

3/ Stock entries for this item are not in the balance sheet, but are calculated from entries on the balance sheet. Entries for flows regarding this item are calculated from groupings of transactions or other economic flows.

4/ For expositional purposes, these items are not listed here. See Table 5.

Table 3. Statement of Government Operations		
	Item	**Transactions**
1	**REVENUE (transactions increasing net worth)**	3
11	Taxes	
12	Social contributions 1/	
13	Grants	
14	Other revenue **(+ 3)**	3
2	**EXPENSE (transactions reducing net worth)**	9
21	Compensation of employees 2/ **(+ 1)**	1
22	Use of goods and services	
23	Consumption of fixed capital	
24	Interest **(+ 8)**	8
25	Subsidies	
26	Grants	
27	Social benefits	
28	Other expense	
3	***NET OPERATING BALANCE, OR NET WORTH CHANGES DUE TO TRANSACTIONS (item 1 - item 2) 3/***	-6
31	**NET ACQUISITION OF NONFINANCIAL ASSETS**	
311	Fixed assets	
312	Inventories	
313	Valuables	
314	Nonproduced assets	
	NET LENDING/BORROWING (line 3 - line 31) 4/	-6
32	**NET ACQUISITION OF FINANCIAL ASSETS**	-9
321	Domestic 5/ **(+ 1 + 3 - 4 - 9)**	-9
322	Foreign	
323	Monetary gold and SDRs	
33	**NET INCURRENCE OF LIABILITIES**	-3
331	Domestic	-3
	Of which: pension liabilities 6/ **(+ 2 - 4 + 8 - 9)**	-3
332	Foreign	

Note: The assumption is that reporting is on an accrual basis. The entry amounts for individual economic events in an exercise can be shown after descriptors. The sum of these entries can be recorded in the right-hand column. For expositional purposes, details of financial assets and liabilities are not shown in Tables 3 and 4, and no memorandum items are identified in this table.

1/ Contributions would be treated as revenue if scheme, like social assistance systems, were on a PAYG basis.

2/ The entry of 1 reflects the extent to which the cash payment by employees do not match the overall liability increase of the defined benefit pension scheme. The extra funds needed would be classified as compensation.

3/ Gross operating balance equals net operating balance plus consumption of fixed capital.

4/ Net lending/borrowing (or item 32 minus item 33), a supplementary line, is equivalent, with the opposite sign, to net financing.

5/ The entry of 1 reflects cash payments by employees.

6/ Transactions under this descriptor reflect the net acquisition of pension liabilities, a major element of insurance technical reserves. Liabilities reflect defined benefits according to employment contract. Only credible data based on actuarial records would be acceptable. Where credible actuarial data are available, transaction data on government pension systems would largely concern financing.

Table 4. Statement of Other Economic Flows		
	Item	**Other Economic Flows 1/**
4	***NET WORTH CHANGES DUE TO OTHER ECONOMIC FLOWS (item 41 + item 42 - item 43) 2/ (- 5 - 6 +7)***	-4
	CHANGES IN NONFINANCIAL ASSETS DUE TO	
41	**OTHER ECONOMIC FLOWS**	
411	Fixed assets	
412	Inventories	
413	Valuables	
414	Nonproduced assets	
	CHANGES IN NET FINANCIAL WORTH DUE TO OTHER ECONOMIC FLOWS (item 4 - item 41) 3/	-4
	CHANGES IN FINANCIAL ASSETS DUE TO	
42	**OTHER ECONOMIC FLOWS**	
421	Domestic	
422	Foreign	
423	Monetary gold and SDRs	
43	**CHANGES IN LIABILITIES DUE TO OTHER ECONOMIC FLOWS**	4
431	Domestic	4
	Of which: pension liabilities **(+ 5 + 6 - 7)**	4
432	Foreign	

Note: Codes in this table, for expositional purposes, conform to those for holdings gains in Appendix 4 of the *GFSM 2001* . For expositional purposes, this table combines both holdings gains and other changes in volume, which are covered in two separate tables in the *GFSM 2001* . Codes for other changes in volume in that appendix begin with "5", and otherwise conform with these code numbers.

The amount of entries for individual economic events (see Chart 1) is shown after descriptors. The algebraic sum of these entries can be recorded in the right-hand column.

1/ Other economic flows comprise holding gains and other changes in volume.

2/ The item is defined as the changes in the government's net worth due to other economic flows, and the sum of these flows is also equal to the sum of related flows in assets less the sum of related flows in liabilities.

3/ The entry for this item, an important supplemental item, can also be calculated as item 42 less item 43.

Table 5. Balance Sheet			
	Item	Opening Balance	Closing Balance
6	**NET WORTH (item 61 + item 62 - item 63)**	**0**	**-10**
61	**NONFINANCIAL ASSETS**		
611	Fixed assets		
612	Inventories		
613	Valuables		
614	Nonproduced assets		
	NET FINANCIAL WORTH (item 6 - item 61) 1/	0	-10
62	**FINANCIAL ASSETS**	100	91
621	Domestic	100	91
6212	Currency and deposits		
6213	Securities other than shares		
6214	Loans		
6215	Shares and other equity (public corporations only)		
6216	Insurance technical reserves (covers government employee pensions) 2/	100	91
6217	Financial derivatives		
6218	Other accounts receivable		
622	Foreign		
6222	Currency and deposits		
6223	Securities other than shares		
6224	Loans		
6225	Shares and other equity (public corporations only)		
6226	Insurance technical reserves (covers government employee pensions)		
6227	Financial derivatives		
6228	Other accounts receivable		
623	Monetary gold and SDRs		
63	**LIABILITIES**	100	101
631	Domestic	100	101
6312	Currency and deposits		
6313	Securities other than shares		
6314	Loans		
6315	Shares and other equity		
6316	Insurance technical reserves (covers government employee pensions)	100	101
6317	Financial derivatives		
6318	Other accounts payable		
632	Foreign		
6322	Currency and deposits		
6323	Securities other than shares		
6324	Loans		
6325	Shares and other equity		
6326	Insurance technical reserves (covers government employee pensions)		
6327	Financial derivatives		
6328	Other accounts payable		
	Memoranda items		
	Net financial worth	0	-10
	Debt (at market value)	100	101
	Debt (at nominal value)		
	Arrears		
	Obligations for social security benefits		
	Contingent liabilities		
	International reserves and foreign currency liquidity		
	Uncapitalized military weapons and weapon-delivery systems		

Note: The codes of this table conform with codes (which begin with "6") in the GFSM 2001. All balance sheet items are included in items 6, 61, 62, and 63. The sum of items 6 and 63 equal the sum of items 61 and 62.

1/ This balancing item, not observed in the balance sheet, is derived from balance sheet items (e.g., item 62 less item 63).
See same item among memorandum items, where it is identified in the new *GFS Manual* .

2/ Includes financial assets held by government nonautonomous pension plans for government employees.

the balance sheet item called net worth, a supplemental balance called net financial worth, and the identified effect of transactions and other flows on these two balances. All changes in balance sheet entries during the period reflect precisely the effect of transactions and other economic events. Also shown in this table are important memoranda items of government.

C. Criteria for Treating Events Differently in Government Pension Systems

Transactions of all government pension schemes, like those of all social assistance programs, historically have been treated in government accounting records as revenue or expenditure. This approach has been consistent with a cash reporting basis and with views of certain observers, including selected policy makers, who during periods of aging populations wish to include the substantial cash "contributions" in revenue and the typically lower level of "benefits" in expenditure and wish to ignore implied subsidies and accrued interest costs so that smaller deficits are reported.[17]

But the *GFSM 2001* methodology is based on accrual accounting and government pension schemes for government employees are special. The criteria for treating activities of government pension schemes for government employees under the *GFSM 2001* methodology differently than those under the cash-only basis of reporting with the *GFSM 1986* methodology is that the government has an employee contract with these workers.[18]

Statistical needs for properly treating data on nonautonomous pension systems for government employees, in accord with the *GFSM 2001*, are (1) reporting economic events of government on an accrual basis including the accruing interest on outstanding pension liabilities and (2) recognizing pension liabilities on the basis of credible actuarial data.

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[17] The significance of the aging problem for fiscal data is obvious. See Eskesen (2002).

[18] Pension schemes "are determined by mutual agreement between individual employers and their employees, the benefits being linked to contributions" according to the *SNA 1993* (paragraph 4.111).

Accounting and statistical conventions exist for recognizing pension liabilities of all public pension systems that are not social assistance schemes. The International Accounting Standards Committee calls for recognizing liabilities when "an outflow of resources embodying economic benefits will result from the settlement of a present obligation and the amount at which the settlement will take place can be measured reliably." (See International Accounting Standards Committee (July 1998, paragraph 91).

Some observers erroneously assume that the recognition of pension liabilities under accrual accounting necessarily implies the accumulation of matching assets. Such matching exists at a point in time for a defined-benefit pension system only in the rare circumstance that it is fully and exactly funded (defined-contribution pension systems are by definition fully funded).

IV. Treatment Of Selected Economic Events For Nonautonomous Government Employee Pension System

To assist in understanding properly treated fiscal data, typical economic events for a particular pension system are classified and reviewed. Specifically, the treatment of selected economic events of a nonautonomous government pension system is examined in the context of two methodologies. The *GFSM 2001* methodology with its accrual accounting permits an objective analysis of pension schemes, including those in transition from defined benefit schemes to defined contribution schemes.

The analytical framework and selected events are summarized in Chart 1. A description of how events listed in Chart 1 should be treated and presented with the *GFSM 1986* methodology (Table 1) and with the *GFSM 2001* methodology (Tables 2-5) is provided in this section.

For expositional purposes, the amount of each transaction entry (the number of the event) is also shown next to the descriptors in Table 3 and entries for other flows are shown next to the descriptors in Table 4. Economic events recorded in Tables 3-4 precisely determine the changes in balance sheets in Table 5. (As the accounting unit with these events is identified as a nonautonomous fund for government employees, fiscal reporting will cover these government activities.)

A. Interpretation of Properly Compiled Fiscal Data

The first economic event, reported in Table 3, is a transaction of an ongoing pension ("contribution") borrowing (valued at 1) associated with part (valued at 1) of the present value of associated defined benefits. The counterpart of borrowing is an increase in cash holdings. The cash receipt is recorded as being from individual workers.[19]

Given the larger present value of the associated (defined benefit) pension benefit (of 2), the second and related event (recorded in Table 3) is the imputed government expense for compensation (of 1) that is needed to pay for the other part of the present value of the expected pension benefits. Thus, these first two events, reflecting an increase in the present value of future pension benefits, are shown as borrowing (of 2), matched by both an associated increase of cash holdings (of 1) and a government expense (of 1). In brief, these events in these circumstances can be viewed as a forced borrowing scheme of government where there is an imputed compensation payment by government to employees as well as the employee direct payment (of 1). The effect of these transactions on net worth (net operating balance) is identical to that on net lending/borrowing; each decline (by 1). Importantly, the

[19] If the contributions were from the government as an employer, there would be a separately reported (imputed) entry (in addition to that identified in the next paragraph) under compensation, which is classified as government expense. The counterpart imputed entry would be as government borrowing from employees.

avoidance of recording the additional compensation amount (of 1) to account for the unfunded part of the defined-benefit obligation in historic *GFSM 1986* reporting reflects distorted and nontransparent fiscal reporting, a misleading deficit, and the lack of transparency.

The third economic event, reported in Table 3, is the accrued interest transaction (of 3) calculated on the government pension scheme holdings of T-bills. One entry for this event is treated as nontax revenue, and the counter entry is treated as an increase in financial holdings.

The fourth economic event, reported in Table 3, is the payment of pension benefits (of 4). Because this payment decreases the expected liability to pensioners (who are aging), it is treated as an amortization payment, offset by a reduction in cash balances. There is no impact on net worth or on net lending/borrowing.

The fifth economic event, for an increase in liabilities (of 5) due to a cost-of-living allowance (COLA), is not a transaction but is an other economic event and thus is recorded in Table 4. This event has the same negative impact on net worth or on net financial worth as an expense of the same amount. The double entries are properly reported under net worth and changes in liabilities due to other flows.

The sixth economic event, reported as a revaluation in Table 4, is the liability increase (of 6) due to added longevity expected by independent actuaries. The direction of this impact on net worth and net financial worth is the same as that for the cost-of-living increase.

The seventh economic event, reported as an other change in volume in Table 4, is the reduction (of 7) in liabilities due to a change in the law specifying pension benefits. (The government may have raised the minimum age for pension recipients.) This event has the same positive impact on net worth or on net financial worth of government as revenue of the same amount. Entries are reported under net worth and changes in liabilities.

The eighth economic event is the increase in liabilities due to the imputed interest on pension liabilities. The proper treatment of entries for this economic event, which is a transaction (recorded in Table 3), is an interest expense and an increase in pension liabilities. Crucially, the absence of reporting this transaction in cash-based reporting contributes greatly to the disconnection between encouraging data on current cash deficits and discouraging but more realistic understandings of the fiscal problems due to aging populations.

The ninth economic event identified in Chart 1 is the payment to a financial corporation for assuming selected government pension liabilities. With pension liabilities recorded at the market value on the government balance sheet, this exchange transaction is seen properly as having no impact on the net worth of government. With the inadequate reporting capability under cash-based recording and the *GFSM 1986* methodology, governments are constrained typically to classify these payments as expenditure, which sharply increases the amount of the deficit. Thus, such sales associated with pension reforms are not often acceptable by policy makers.

Each of the nine economic events reported in Tables 3-4 has direct effects on the balance sheet (Table 5). Entries in the closing balance sheet equal the sum of identified entries for (1) the opening balance sheet, (2) transactions (Table 3), and (3) other flows (Table 4).

Without these classifications of the *GFSM 2001* methodology and a fully integrated perspective, it is difficult to transparently report or to understand economic events for these government pension systems. As noted, only three of the nine typical economic flows for a government pension system are captured under the 1986 GFS methodology. Moreover, the presentation under this methodology of these events is likely to be misleading (see Table 1). In contrast, the *GFSM 2001* methodology records all nine events and their transparent implications for net worth and financing.

B. Cash- and Accrual-based Nonautonomous Pension Schemes

Cash-based and accrual-based nonautonomous pension schemes, as illustrated in Chart 2, also can be compared in another manner. If a government pension scheme for its employees has only cash-based data, the treatment of contribution and benefit transactions (as revenue and expenditure, respectively, with the *GFSM 1986* methodology, and as revenue and expense with the *GFSM 2001* methodology) is misleading. But where a nonautonomous government pension system for government employees has properly classified accrual data, the transaction data should be treated like those mandated for corporations with employee pension schemes. As illustrated, entries for pension schemes for government employees with the *GFSM 2001* methodology (under heading III. B. in Chart 2) are the same as those for financial corporations (under heading I.). In contrast, the *GFSM 1986* (and the *GFSM 2001*) methodology calls for treating entries for cash-based schemes (under heading III.A.) in the same misleading manner (under heading II).

C. Prospective Transition or Reform to Autonomous Pension Schemes

To transparently assess a prospective transition or reform from a government nonautonomous pension system to an autonomous pension system (including defined contribution systems), the pension liabilities of the government pension system first need to be reported.[20] One difficulty for a government regarding its retirement scheme in a transition period from reporting on a cash-only basis to the complete *GFSM 2001* basis is its typical wish to avoid recognizing, on its books, its employee pension liabilities and the associated impact on net worth. Some policy makers reject a transition to an autonomous pension system simply due to the erroneous attribution of large cost (or jump in reported debt) to the transition rather than simply to the balance sheet recognition of existing and acknowledged pension liabilities.

[20] One major point is that "a reform that establishes individual accounts [for example] must increase the public sector deficit as conventionally measured [in accordance with the *GFSM 1986*], ... because the public sector continues to meet its [pension] obligations ... while losing some... of its revenue..." (see MacKenzie, 2001, page 3). See also MacKenzie (2002).

Chart 2

TREATMENT OF SELECTED TRANSACTIONS UNDER GOVERNMENT NONAUTONOMOUS DEFINED-BENEFIT PENSION SCHEME FOR GOVERNMENT EMPLOYEES 1/

Transactions	Entries for Selected Transactions	
I. FINANCIAL CORPORATION FOR PENSION SCHEME		
	Books of Financial Corporation	
1. Individual contribution to pension scheme	Debit cash	Credit pension liability
2. Government payment to fully fund scheme 2/ 3/	Debit cash	Credit pension liability
3. Payment of pension benefit to individual	Credit cash	Debit pension liability
II. CASH-BASED REPORTING FOR PENSION SCHEME		
	Books of Pension Fund 4/	
A. Under the *GFSM 1986* Methodology		
1. Individual contribution to government pension scheme	Debit cash	Credit revenue
2. No government payment is made to fully fund the scheme	--	--
3. Payment of pension benefit to individual	Credit cash	Debit expenditure
B. Under the *GFSM 2001* Methodology		
1. Individual contribution to government pension scheme	Debit cash	Credit revenue
2. No government payment is made to fully fund the scheme	--	--
3. Payment of pension benefit to individual	Credit cash	Debit expense
III. ACCRUAL-BASED REPORTING FOR PENSION SCHEME		
	Books of Pension Fund 4/	
A. Under *GFSM 1986* Methodology		
1. Individual contribution to government pension scheme	Debit cash	Credit revenue
2. No government cash payment is made to fully fund the scheme	--	--
3. Payment of pension benefit to individual	Credit cash	Debit expenditure
B. Under *GFSM 2001* Methodology		
1. Individual contribution to government pension system	Debit cash	Credit pension liability
2. Government payment to fully fund system 2/ 5/	Debit cash	Credit pension liability
3. Payment of pension benefit to individual	Credit cash	Debit pension liability

Note: The treatment of economic events for a financial corporation (which is an autonomous fund) established for a pension scheme are identical to that for a pension scheme for government employees under *GFSM 2001*. This similarity reflects (1) goals of treating economic events of government like events of other institutional entities and (2) transparency goals for government.

1/ For expositional purposes in this chart, transactions under an accrual accounting system for interest (which are typically substantial) on pension scheme liabilities are ignored.
2/ Payment is further identified as being from budgetary central government.
3/ A financial corporation would not accept a defined-benefit plan (and associated liabilities) unless the accepted liabilities were fully funded, with the value of assets at least matching that of liabilities.
4/ The pension fund is identified to illustrate the treatment of its transactions, including its transactions with with the budgetary central government. It is further identified as being nonautonomous government and not engaging in financial transactions in the market on its own account (thus it is not a financial corporation).
5/ This transaction, identified under accrual accounting, may alternatively involve the issuance of bonds from the budgetary central government to the pension fund. For the budgetary unit, the counterpart entry of cash decreases (or bond issuances) is treated as an expense.

D. Proper Interpretations for Fiscal Analysis

The statistical methodology for better understanding government pension schemes for government employees is the use of accrual accounting and the *GFSM 2001* methodology. The proper classification and interpretation of pension "contributions" received by these schemes is government borrowing, and the proper interpretation of pension "benefits" is debt repayments.[21]

V. Concluding Remarks

A major fiscal issue is the need to properly analyze government pension schemes for its employees, particularly in view of aging populations.[22] Data typically used for this analysis in a cash-based reporting system are ranges of projections of transactions based on uncertain assumptions. But with an accrual accounting system geared toward financial statements resembling income statements and balance sheets of commercial entities, current facts are satisfactory for fiscal analysis if the data are based on credible actuarial information in an appropriate analytical framework (i.e., in the *GFSM 2001*). One current issue is how long countries will take to migrate to the *GFSM 2001* methodology and thus to transparently report on these defined-benefit pension schemes.

This paper (1) briefly describes, with examples of typical economic events, the *GFSM 2001* methodology, which permits authorities to transparently present their data on pension schemes for government employees, (2) demonstrates the inadequacy of any statistical methodology based only on cash reporting, and (3) underscores the need to adopt the *GFSM 2001* methodology and accrual-based reporting to better understand the role of these schemes for fiscal policy, regardless of whether a particular pension scheme is likely to be reformed.

While the paper addresses pension schemes for government employees, the *GFSM 2001* methodology also calls for compiling and reporting, as memorandum items, data on social security schemes, for which improved reporting can also uncover major fiscal difficulties

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[21] Analysts should have cash flow data for certain types of fiscal analysis, and the *GFSM 2001* methodology calls for compiling selected cash-based data as well as accrual data. As with examining accrual data for pension systems, analysts need to identify links between contributions, benefits, and pension liabilities before assessing the impact on the economy of such pension system's operations or a transition to an autonomous pension scheme. A transparent identification is impossible with only cash data, which cannot recognize or include the large entries for the extent to which cash receipts do not fully fund the present value of increasing amounts of defined benefits of those working or of the interest accruing on pension liabilities during the period.

[22] "Population aging will be a defining feature of the economic landscape" in this century. See Faruqee (2002, page 3).

related to aging populations. Furthermore, a strong case regarding prospective improvements in GFS methodology can be made that all government pension obligations for social insurance schemes should be recognized as debt and that the associated activities should be treated in the same manner as those outlined herein for pension schemes for government employees.

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