



# **Government Finance Statistics IMF Statistics Department**

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## **Data Sources, Preparation, and Derivation**

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# Contents of Lecture

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- **Data sources**
  - Transactions
  - Other economic flows
  - Stocks
- **Data preparation**
  - Derivation
  - Consolidation
  - Classification

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# Introduction

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- **Aspects apply to component units of each subsector of general government, i.e.,**
  - **Budgetary accounts**
  - **Extrabudgetary accounts**
  - **Social security funds**
  - **State government**
  - **Local government**
- **Can be extended to public corporations, if public sector statistics are compiled**

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# Data Sources for Transactions

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- **Main source for GFS compilation is administrative records**
  - **Surveys and other means only recommended when suitable administrative records are not available**
  - **Care must be exercised in choosing most appropriate administrative records**
    - **Coverage**
    - **Degree of detail available**
    - **Time it takes for records to become available**
    - **Frequency of release of records**
    - **Accuracy and reliability of information in records**
    - **Medium in which records can be made available**

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# Accounting System

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- **Double-entry accounting**
  - Ensures that internal balances within accounting and GFS systems are maintained throughout compilation process and in final statistics
- **Do sources cover all flows and stocks that are to be recorded?**
  - Cash based system
  - Accrual system
  - Mixture of cash and accrual system

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## **Basis for Recording (1/2)**

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- **GFS is on accrual basis, ideally**
- **If accrual records not available**
  - **Prefer due-for-payment basis above cash basis**
- **In practice, for many institutional units, no choice as exclusively cash-based records or predominantly accrual-based records available**

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## Basis for Recording (2/2)

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- **Should not exclude unit from statistics if only cash-based data, as cash can be used as proxy for accrual **BUT****
  - **Must be able to adjust data to accrual basis**
    - **if differences between cash and accrual are significant**
    - **If differences are clearly identified**
    - **Should seek information on these differences**

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# Available Data Detail

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- **GFS compiled determines level of details of accounting records needed**
- **More details better than less details, but need to strike a balance**
  - **Descriptions of stocks and flows in accounting records do not necessarily reflect GFS classification concepts**
    - **More aggregated data may thus lead to errors resulting from descriptors that mislead compilers**

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# Frequency of Accounting Records (1/2)

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- **Periodicity and timeliness of accounting records are thus important in choice of data sources**
  - **Monthly GFS → monthly records**
  - **Quarterly GFS → monthly or quarterly records**
  - **Annual GFS → monthly, quarterly, or annual records**
  - **Use monthly or quarterly records if annual records not available on timely basis**
    - **Review against annual records when they become available**

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# Frequency of Accounting Records (2/2)

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- **Accounting period covered by sources**
  - Ideally GFS should be compiled for calendar years, or parts thereof (months, quarters)
  - If accounting period is not same as calendar year
    - Use standard accounting period records rather than records for other periods

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# Accuracy and Reliability

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- **For GFS compilation, balance need to be struck between timeliness and accuracy of accounting records**
  - **Forecasts**
  - **Preliminary data**
  - **Final data**
  - **Audited data**

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# Revenue and Expense

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- **Choice of data source should be based on analysis of**
  - **Stages at which expenditure and revenue collection occur**
  - **The timing of available government records**
- **Government operations occur at variety of stages – statistics may exist for each**
  - **Important to know**
    - **What each stage represent**
    - **What implications for data reported at that stage are**

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# **Stages of Expense Process**

## **(1/4)**

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### **1. Budget proposal or estimates**

- Presented to legislative body (parliament, congress)**

### **2. Appropriations**

- Budget data approved by legislature**

### **3. Allocations/allotments**

- Authorize ministries to pay out specified funds within given time period within limits of appropriations**

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# Stages of Expense Process

(2/4)

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## 4. Commitments stage

- Commit or place orders to purchase goods and services
- Enter into agreements for future delivery of goods and services

## 5. Deliveries

- Goods and services are delivered

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# Stages of Expense Process

(3/4)

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## **6. Payment orders**

- Issued by receiving ministry or central office certifying that payment is due and should now be made

## **7. Checks or warrants**

- Issued by Treasury or ministries' own payment officers

## **8. Checks are paid or transfers are made to supplier bank accounts**

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# Stages of Revenue Collection Process

## (1/3)

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- **More complex, stages vary according to type of revenue collections**
- **Corporate income tax**
  1. **Income is earned, taxpayer accrues liability to pay tax on future date**
  2. **Taxpayer assesses and declares estimated amount of tax due**
    - **May include provisional assessment stage too**
  3. **Assessed tax becomes due for payment**

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# Stages of Revenue Collection Process

(2/3)

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4. Taxpayer pays the tax
5. Taxpayer files tax return and corrected assessment after close of taxable period
  - Takes account of any variation between provisional assessment in stage 2 and actual income earned
6. Government issues it's assessment of the tax liability
7. Government and taxpayer come to an agreed assessment
8. Taxpayer pays any amount remaining due or receives a refund or tax credit

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# Stages of Revenue Collection Process

(3/3)

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9. **Assessment is reopened by government on basis of new information, or by taxpayer**
    - E.g., losses in later years that can be carried back and subtract from tax due for previous taxable periods
  10. **Altered tax assessment may lead to taxpayer to pay additional taxes or receive a refund or tax credit**
- **Shorter series of stages usually for collection of other types of taxes**
    - **Sales tax**

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# Other Economic Flows

(1/3)

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- **Changes in volume of assets and liabilities**
  - **Source of data for these types of changes should be in two consecutive balance sheets**
    - **Notes to balance sheets should explain most significant changes in assets and liabilities during period**
  - **Normally result from readily identifiable economic events**

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# Other Economic Flows

## (2/3)

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- **Holding gains**
  - **Source of data for holding gains should be in two consecutive balance sheets**
    - **Notes to balance sheets should explain most significant changes in assets and liabilities during period**
  - **BUT: holding gains not result of readily identifiable economic events**
    - **Sometimes in notes of balance sheet, sometimes from information in accounts that identify specific reason for price changes**

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# Other Economic Flows

(3/3)

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- **In most cases, holding gains will be implicit in changes to market value of assets and liabilities on balance sheet**
- **Thus, derived as residual**
  - **Important to assess whether derived holding gains are consistent with general price movements**

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# Stocks

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- **Positions in, or holdings of, assets and liabilities at a specific point in time**
  - Shown in balance sheet
- **Connect with flows**
  - $\text{Stocks}_t + \text{Flows} = \text{Stocks}_{t+1}$
- **Basic objective of accrual accounting is to measure economic activity during the period in which the activity took place**

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# Organization of Accrual Accounts

## (1/2)

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- **Accounting records:**
  - **Statement of transactions / operating statement**
    - Income or revenue part
    - Expenses
  - **Balance sheet**
    - One side assets
    - Other side liabilities
    - Two sides balance (net worth)
  - **Statement of cash flows**
    - Records how cash was used during accounting period
- **To compile GFSM 2001:**
  - **Statement of Government Operations**
  - **Statement of Other Economic Flows**
  - **Balance Sheet**
  - **Statement of Sources and Uses of Cash**

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# Organization of Accrual Accounts

## (2/2)

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- **Three statements are supplemented by additional (supplementary or more detailed) information**
  - **Called “notes to the accounts”**
    - **E.g., provides details on gross transactions rather than net results summarized in statements**
    - **E.g., information on holding gains or other changes in volume of assets**

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# Using Other Data Sources

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- **Administrative data sources that permit development of bridge tables linking institutional unit's accounts with GFS classification systems not always possible**
  - Need to find other sources
- **Use of other data sources may produce inconsistencies between total financing and net lending/borrowing balancing item**
  - Valuation, coverage, methodological differences

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# Data Preparation and Derivation

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- **After selection of appropriate data sources, compilation of GFS begins**
  - **Should be done in structured way**
- **Main processes are**
  - **Derivation**
  - **Consolidation**
  - **Classification**

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# Derivation

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- **Involves adjustment of information from data source to reflect concepts used in GFS system**
- **Derivation table**
  - **Facilitate structured and accurate adjustment of figures in the data sources**
  - **Provide means for users and compilers to link data sources to GFS (“check list”)**

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# Typical Derivation Adjustments

## (1/2)

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- **Conversion from cash or other basis to accrual basis**
  - To include noncash flows and adjustment of the time of recording of flows
  - Other **timing adjustments**, e.g., to accommodate for complementary period
- **Coverage adjustments**
  - To ensure correct sectorization of agency to specific level of government

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# Typical Derivation Adjustments

## (2/2)

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- **Classification** changes
  - E.g., reclassify loan proceeds from revenue to financing
- Adjustments to reflect correct degree of **netting**
- Adjustments for **internal** flows and stock holdings
- **Valuation** adjustments
  - If not market value
- **Consolidation** adjustments

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# Derivation Table

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- **Purpose is to ensure systematic adjustments to source data that**
  - **Preserves the internal balances**
  - **Provides a record that compilers can use as guide for compiling statistics in subsequent periods (consistency)**

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# Some Other Data Preparation Issues

## (1/3)

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- **Data frequency**
  - At least annual data, preferably calendar years
  - Fiscal years if calendar year not possible
  - Reconciliation of monthly and quarterly data with annual data
- **Valuation of stocks and flows**
  - GFS uses market prices
    - Not always easy/possible to determine

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# Some Other Data Preparation Issues

## (2/3)

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- **Compilation of forecasts**
  - Encouraged to compile GFS forward estimates or forecasts
  - Data limitations (detail, coverage)
- **Estimation of implicit taxes and subsidies**
- **Accrual measurement of taxes**
  - Attributed to period in which events giving rise to tax liability occurred
  - Assessments generally identifies with accounting period in which events occurred

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# Some Other Data Preparation Issues

(3/3)

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- **Treatment of taxes collected as agent**
  - See “Revenue” lecture