

The Measurement of Business Capital, Income and Performance

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Table of Contents

I. The Measurement of Capital: Traditional User Cost Approaches

- 1. Introduction**
- 2. Inflation and the Measurement of Economic Activity**
- 3. The Fundamental Problem of Accounting and the Equations Relating Stocks and Flows of Capital**
- 4. Relationships between Depreciation, Asset Prices and User Costs**
- 5. The Empirical Determination of Interest Rates and Asset Inflation Rates**
- 6. The Empirical Determination of Depreciation Rates**
- 7. Time Series versus Cross Sectional Depreciation**
- 8. Aggregation over Vintages of a Capital Good**
- 9. The Production Function Framework**
 - 9.1 Introduction**
 - 9.2 The Austrian Production Function**
 - 9.3 The Fisher-Hicks Intertemporal Production Function**
 - 9.4 The Traditional Production Function**
- 10. The Treatment of Business Income Taxes**

Appendix A: Alternative Models of Depreciation

- A1. The One Hoss Shay Model of Efficiency and Depreciation**
- A2. The Straight Line Depreciation Model**
- A3. The Declining Balance or Geometric Depreciation Model**
- A4. The Linear Efficiency Decline Model**
- A5. The Linearly Increasing Maintenance Expenditures Model**

II. Capital and Accounting Theory: The Early History

- 1. Introduction**
- 2. Accounting Theory and Interest as a Cost of Production**
- 3. Accounting Theory and Depreciation**

- 3.1 Introduction**
- 3.2 The Appraisal Approach**
- 3.3 Sinking Fund Approaches**
- 3.4 Intertemporal Cost Allocation Approaches**
- 4. The Basic Forms of Productive Activity**
- 5. Accounting Theory and the Treatment of Capital Gains**

III. Accounting Theory and Alternative Methods for Asset Valuation

- 1. Introduction**
- 2. Historical Cost Valuation**
- 3. Purchasing Power Adjusted Historical Cost**
- 4. Net Realizable Values or Exit Values**
- 5. Replacement Costs or Entry Values**
- 6. Future Discounted Cash Flows**
- 7. Specific Price Level Adjusted Historical Cost**
- 8. Prepaid Expense “Assets” and their Allocation**

IV. Constructing a Capital Stock for R&D Investments

- 1. Introduction**
- 2. The Basic Cost Matching Methodology**
- 3. A Simple Example**
- 4. A Summary of the Information Needed to Implement the Capitalization Procedure**
- 5. Discussion of Some Difficult Issues**

V. Constructing a Capital Stock for Inventories and the Measurement of Inventory Change

- 1. Introduction**
- 2. The SNA Treatment of Inventory Change**
- 3. A Suggested Alternative Treatment of Inventory Change**
- 4. Conclusion**
- Appendix: A Theoretical Treatment of Inventory Change**

VI. The Aggregation of Capital over Vintages in a Model of Embodied Technical Progress

- 1. Introduction**
- 2. A Vintage Machines Model of Production with No Technological Progress**
- 3. The Relationship between User Costs and Asset Prices**
- 4. Cross Sectional versus Real Time Series Depreciation**
- 5. Leontief Technologies**
- 6. Cobb-Douglas Technologies**
- 7. Increasing Maintenance Requirements and the Asset Retirement Decision**

8. Capital Augmenting Technical Change
9. More General Augmentation Models
10. The Aggregation of Capital Services when New Models Appear
11. Conclusion

VII. The Measurement of Income

1. Introduction
2. Measuring National Product: Gross versus Net
3. Measuring Income: Hicks versus Samuelson
4. The Theory of the Output Index
5. Maintaining Capital Again: the Physical versus Real Financial Perspectives
6. Measuring Business Income: the End of the Period Perspective
7. Approximations to the Income Concept

VIII. The Measurement of Performance: Productivity versus the Real Rate of Return

1. Introduction
2. Productivity Measurement in the Case of One Input and One Output
3. The Determinants of Economic Growth: Primary Input Growth and Other Factors
4. The Determinants of Economic Growth: Productivity Growth
5. Increasing Returns to Scale
6. Other Factors that Might Explain Growth
7. A Summary of the Factors Explaining Productivity Growth
8. The Role of Government in Facilitating Growth.
9. The Index Number Approach to the Measurement of Productivity
10. The Estimation of Technical Progress and Returns to Scale
11. Can the Use of Instrumental Variables Lead to Better Estimates of Returns to Scale?

IX. Benchmarking and the Nonparametric Approach to Performance Measurement

1. Introduction
2. An Introduction to the Nonparametric Measurement of Efficiency
3. Efficiency Tests Using Only Quantity Data
4. Efficiency Tests Using Price and Quantity Data
5. Relationships between the Efficiency Measures
6. An Empirical Comparison of Alternative Efficiency Measures for Canada

Introduction to the Tutorial

The main purpose of this tutorial is to answer the following question: how should capital input be measured in the context of evaluating business performance over a number of accounting periods?

The fundamental problem associated with measuring the contribution of a capital input to the period by period economic performance of a business unit is the durability of capital: a capital input is purchased in an initial accounting period but its contribution to the production of outputs persists over several subsequent periods. Thus the initial purchase cost of the capital input cannot be entirely allocated to the period of purchase but it is difficult to know precisely how the initial cost should be allocated over subsequent periods. This problem of determining the period by period contributions to production and the associated costs is perhaps the fundamental problem in accounting theory. The difficulties associated with this fundamental allocation problem are greatly magnified if the price level is not stable. In the tutorial, we will not assume stability of prices. Once the initial purchase cost of a durable capital input has been allocated across accounting periods, period costs can be subtracted from period revenues and accounting period income or profits can be calculated. Thus the measurement of capital goes hand in hand with the measurement of business income: different measures for the period by period cost of capital will give rise to different income measures. A production theory framework will be used to answer the above questions.

The model of production that we will use for the most part is a one period model of production. It can be described as follows:

“We must look at the production process during a period of time, with a beginning and an end. It starts, at the commencement of the Period, with an Initial Capital Stock; to this there is applied a Flow Input of labour, and from it there emerges a Flow Output called Consumption; then there is a Closing Stock of Capital left over at the end. If Inputs are the things that are put in, the Outputs are the things that are got out, and the production of the Period is considered in isolation, then the Initial Capital Stock is an Input. A Stock Input to the Flow Input of labour; and further (what is less well recognized in the tradition, but is equally clear when we are strict with translation), the Closing Capital Stock is an Output, a Stock Output to match the Flow Output of Consumption Goods. Both input and output have stock and flow components; capital appears both as input and as output” John R. Hicks (1961; 23).

“The business firm can be viewed as a receptacle into which factors of production, or inputs, flow and out of which outputs flow...The total of the inputs with which the firm can work within the time period specified includes those inherited from the previous period and those acquired during the current period. The total of the outputs of the business firm in the same period includes the amounts of outputs currently sold and the amounts of inputs which are bequeathed to the firm in its succeeding period of activity.” Edgar O. Edwards and Philip W. Bell (1961; 71-72).

Hicks and Edwards and Bell obviously had the same model of production in mind: in each accounting period, the business unit combines the capital stocks and goods in process that it has inherited from the previous period with “flow” inputs purchased in the current period (such as labour, materials, services and additional durable inputs) to produce current period “flow” outputs as well as end of the period depreciated capital stock components which are regarded as outputs from the perspective of the current period (but will be regarded as inputs from the perspective of the next period). The model

could be viewed as an Austrian model of production in honour of the Austrian economist Böhm-Bawerk (1891) who viewed production as an activity which used raw materials and labour to further process partly finished goods into finally demanded goods. We will explore this model of production in more detail in section 9 of Chapter I below.

The reader will be able to gain an idea of the materials covered in the remainder of these lectures by looking at the above Table of Contents.

Much of the material in this tutorial has appeared in my published work and unpublished University of British Columbia Discussion Papers. However, the material in chapters II, III and VII is substantially new and is appearing here for the first time.

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