



Geneva, 7 November 2001

Publication Notice

**No. 318-01**

## Trends in Economics and Finance

Volume I: Cost, Tariff and Interconnection Rate Calculation  
Methodology – Application to Case Studies



via ITU Website

This publication is aimed in particular at network operators and regulatory authorities in developing countries who do not have very detailed data at their disposal on their costs or on the development of prices in their market. The first part describes a model for the calculation of telephone service costs, tariffs and interconnection rates. The second part shows how the application of this model in different situations (case studies) allows for the identification of national political demands concerning universal service obligations.

---

|                             |  |               |
|-----------------------------|--|---------------|
| <b>Date of publication:</b> | English and French:                    | November 2001 |
|                             | Spanish:                               | Forthcoming   |
| <b>Language:</b>            | English, French and Spanish            |               |
| <b>Paper format:</b>        | About 110 pages – A4 (21 × 29.7 cm)    |               |
| <b>Electronic format:</b>   | Word for Windows™ – Adobe Acrobat™ PDF |               |
| <b>Article number:</b>      | English:                               | 20539         |
|                             | French:                                | 20540         |
|                             | Spanish:                               | 20541         |
| <b>ISBN number:</b>         | English:                               | 92-61-09501-1 |
|                             | French:                                | 92-61-09502-X |
|                             | Spanish:                               | 92-61-09503-8 |

---

**Price in Swiss francs:**

**Catalogue Price: CHF 50.–**  
Member States and Sector Members: –15%  
Least Developed Countries: –80%

*Electronic Bookshop: CHF 50.– (No discount)*

# **Trends in Economics and Finance**

## **Volume I: Cost, Tariff and Interconnection Rate Calculation Methodology – Application to Case Studies**

### **PART I – Cost, Tariff and Interconnection Rate Calculation Methodology**

- 1 Objective
- 2 Basic concepts
  - 2.1 The concept of cost
  - 2.2 Base costs
  - 2.3 Guiding principles
- 3 Services considered
  - 3.1 Telephone services
  - 3.2 Network components
  - 3.3 Non-telephone services
- 4 Structure of the telecommunication network
  - 4.1 Organization of the network
  - 4.2 Delimitation of the network
- 5 Considerations regarding available costs
  - 5.1 Analytical cost accounting
  - 5.2 General accounting
- 6 Traffic data
  - 6.1 Traffic data required
  - 6.2 Estimation methods
- 7 Cost attribution of components
  - 7.1 Geographical correction
  - 7.2 Direct costs
  - 7.3 Indirect costs
  - 7.4 Common costs
  - 7.5 Special costs
  - 7.6 Spare capacity and inefficiency costs
- 8 Cost of services
  - 8.1 Telephone services cost
  - 8.2 Interconnection costs
  - 8.3 Network components cost
  - 8.4 Reference (benchmark) costs
- 9 Profit tax
- 10 Universal service obligations
  - 10.1 Definition
  - 10.2 Contributions to universal service
  - 10.3 Access deficit
- 11 Cost-orientated tariffs
  - 11.1 Attribution of profit tax
  - 11.2 Attribution of universal service obligations
- 12 Cost-based tariffs
  - 12.1 Tariff rebalancing
  - 12.2 Considerations with respect to elasticity
- 13 Consideration of exogenous costs

## **PART II – Application to Case Studies**

- 14 Correlation studies
  - 14.1 Objectives
  - 14.2 Classifications
  - 14.3 Analysis based on GDP
  - 14.4 Analysis by class of fixed-line teledensity
  - 14.5 Consumption ratio
  - 14.6 Relationship of teledensity to GDP per capita
- 15 Universal service obligations in developing countries
  - 15.1 Demarcation of the field
  - 15.2 Factors involved in decision-making
  - 15.3 General situation in developing countries
- 16 Case studies
  - 16.1 Context and scope of the studies
  - 16.2 Results of individual cases: costs and tariff
- 17 Necessity of tariff rebalancing and its limits
  - 17.1 Tariff rebalancing machinery
  - 17.2 Limiting factors
  - 17.3 The typical cases once again
- 18 Tariff aspects of the formulation of national universal service policies
  - 18.1 Universal service obligations and efficiency
  - 18.2 Approaches to “availability”
  - 18.3 Approaches to “accessibility”
  - 18.4 Approaches to “affordability”



# GENERAL CONDITIONS OF SALE

## ■ Prices

The prices quoted in Publication Notices, as well as in the ITU Catalogue of Publications and in the Lists of ITU-T and ITU-R Recommendations (distributed free of charge and visible on the ITU website at the following address: [www.itu.int/publications](http://www.itu.int/publications)) are in Swiss francs (CHF), and are subject to change without notice.

Discounts of 15% are granted to Member States and Sector Members participating in the work of ITU. A discount of 80% of the catalogue price on all ITU publications is granted to Administrations of the Least Developed Countries (LDCs), as well as to libraries of educational institutions (for online subscriptions and CD-ROM publications only). Please note that the minimum price for a publication bought from the Electronic Bookshop is twenty Swiss francs (CHF 20.–) and that there is no discount via this service.

All additional information concerning CD-ROMs, online Recommendations and the ITU Electronic Bookshop can be found in the Catalogue of Publications and its associated Lists of ITU-R and ITU-T Recommendations.

## ■ Methods of payment

All publications ordered from ITU must be paid for in advance. Payments can be made:

- a) by credit card: American Express, Eurocard/Mastercard, Visa;
- b) by bank transfer to the UBS SA, Geneva, Account ITU Geneva, No. 240-C8765565.0;
- c) by cheque made payable to ITU;
- d) by international postal order;
- e) to the ITU postal cheque account: ITU Geneva, No. 12-50-3 (from within Switzerland);
- f) or by UNESCO coupon.

Payments normally should be made in Swiss francs (CHF). Payments may also be made in other currencies, freely convertible into CHF, provided that, when converted by the bank, the price of the service in CHF is covered. ITU does not accept Letters of Credit.

*For faster order processing, we invite you to either pre-pay by credit card or take advantage of a new service by opening an ITU deposit account.*

## ■ Forms of dispatch

The catalogue price includes the cost of dispatch by second-class mail or the means of carriage most advantageous to ITU. Dispatch can be requested in other forms: i.e. air mail (express and registered), EMS, Federal Express, TNT or diplomatic pouch. If one of these alternative methods is chosen, the dispatch cost will be added to the quote. Customs duties and other taxes or dues levied on imported goods are not borne by ITU. ITU accepts **no responsibility** for delay, loss or damage in shipment. Any discrepancy or claim must be communicated to ITU within one year of dispatch of the publication(s).

## ■ Return of publications

Where a publication found to be faulty is returned to ITU, the latter's responsibility shall be limited to replacement of the publication and payment of the costs arising from such replacement. Any publication returned to ITU as unwanted must reach it within two (2) months from the date of its dispatch to the customer, subject to ITU's prior agreement. A minimum charge of fifty Swiss francs (CHF 50.–) will normally be invoiced to the customer by ITU for return of the publication to stock.

In the case of electronic publications (CD-ROM and online), these general conditions shall apply, subject to the specific derogation provisions contained in the Licence Agreements. The placing of an order implies full acceptance of these general conditions of sale.

None of the provisions of these general conditions of sale shall be interpreted as constituting a derogation or renunciation of the privileges, immunities and facilities enjoyed by ITU in accordance with the international agreement applicable to it, in particular the Headquarters Agreement concluded with the Swiss Federal Council on 22 July 1971, as well as the Swiss law or any other relevant national legislation.

**Please note that orders cannot be taken over the telephone.  
They should be sent by telefax or electronic mail.**

# Trends in Economics and Finance

## Volume I: Cost, Tariff and Interconnection Rate Calculation Methodology – Application to Case Studies

Order form

**Customer's billing address (please PRINT or type)**

|                                    |                        |                 |
|------------------------------------|------------------------|-----------------|
| Name of the Company or Institution |                        |                 |
| Division / Department              | Name of Contact Person |                 |
| Street / Post Office Box           |                        |                 |
| City, State                        | ZIP / Post Code        |                 |
| Country                            |                        |                 |
| Phone number                       | Telefax number         | Electronic mail |

**Preferred form of shipment**

|   |   |
|---|---|
| <input type="checkbox"/> Surface mail (free of charge)  | <input type="checkbox"/> Surface registered |
| <input type="checkbox"/> Airmail                        | <input type="checkbox"/> Airmail registered |
| <input type="checkbox"/> EMS _____ (Acc. #)             | <input type="checkbox"/> TNT _____ (Acc. #) |
| <input type="checkbox"/> Federal Express _____ (Acc. #) |   |

**Customer's shipping address (if different from above)**

|                                    |         |
|------------------------------------|---------|
| Name of the Company or Institution |         |
| Division / Department              |         |
| Street / Post Office Box           |         |
| City, State, ZIP / Post Code       | Country |

**Method of payment**

|   |  |
|---|--|
| <input type="checkbox"/> Cheque or money order of _____ Swiss francs enclosed       | <input type="checkbox"/> Bank transfer of _____ Swiss francs to UBS SA, Geneva   |
| <input type="checkbox"/> Please charge _____ Swiss francs to my credit card account | <input type="checkbox"/> American Express <input type="checkbox"/> Eurocard / Mastercard <input type="checkbox"/> Visa |

Card number     Expiry date     Card-holder \_\_\_\_\_

**Please send me**

| Article number | Publication title | Lang. code | Unit price | Quantity | Total CHF |
|----------------|-------------------|------------|------------|----------|-----------|
|                |                   |            |            |          |           |
|                |                   |            |            |          |           |
|                |                   |            |            |          |           |
|                |                   |            |            |          |           |
|                |                   |            |            |          |           |
|                |                   |            |            |          |           |

**I confirm this order**

|                               |                            |
|-------------------------------|----------------------------|
| _____<br>Your order reference | _____<br>Name of signatory |
| _____<br>Date                 | _____<br>Signature         |

Please sign and return the completed Order form to:

ITU  
Sales and Marketing Division  
Place des Nations  
CH-1211 Geneva 20 – Switzerland

Telefax: +41 22 730 51 94  
E-mail: sales@itu.int