# Comparative World Data

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## A Statistical Handbook for Social Science

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With the Collaboration of Volker Bornschier

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# PREFACE

About ten years ago, *V. Bornschier* and *P. Heintz* from the Sociological Institute of the University of Zurich (Switzerland) edited *Compendium of Data for World-System Analysis.*[1] Although the publication was sold only as a mimeographed brochure and was distributed informally, the demand for this data collection passed far beyond the original expectations of its editors. As a result of this success the decision was made to prepare a second edition of this handbook. Originally this new edition was conceived as a slightly enlarged update of the first one. However, as time went on the new edition became more and more a handbook in its own right, with a new title, many new variables, and a completely different presentation of the data:

- Unlike the first handbook, the present edition can be used as an *encyclopedia of the international system:* Alphabetically organized by country names, it offers statistical profiles for 128 countries with country-specific information about society, politics, and economics.
- Unlike the first compendium, this handbook contains information about the complex network of the *international exchange relations* that are based, among others, on the flows of capital, ideas, people, and commodities.
- As a new feature of this edition, the aforementioned country profiles are organized in such a way that simple hypotheses about correlations between variables, group-specific growth rates, etc. can be *tested without computers.* Cross references to countries with similar properties and percentile rankings allow the reader to do exploratory data analyses with paper and pencil.
- Since the first compendium appeared on the market the personal computer has become a commonly used instrument on the desk of many social scientists. Hence we no longer distribute our data on the big and voluminous tape reels for mainframe computers. Instead, the user of this book has the option to purchase the data of this book on *PC diskettes.* In this way, more sophisticated statistical investigations that go beyond the level of the aforementioned exploratory data analyses can easily be done on a PC system.

The realization of our editorial plans would not have been possible without a generous grant from *SNF,* the national science foundation of Switzerland. The grant allowed us to employ three people who contributed substantially to the production of this book. *Urs Germann* and *Maria Stettler* helped to compile the figures for this book, and *Sandro Cortali* wrote the computer programs for the production of the graphics and the country profiles. Their attentive and reliable work is acknowledged with great appreciation. In addition, we would like to thank those institutions that granted us permission to use their data in this book for modest fees or at no cost. We especially recognize the generosity of the following seventeen institutions:

- Freedom House (New York)
- International Labour Office (ILO) (Geneva)
- International Monetary Fund (IMF) (Washington, D.C.)
- International Progress Organization (IPO) (Vienna)
- Organisation for Economic Co-operation and Development (OECD) (Paris)
- Pinter Publishers (London)
- Stockholm International Peace Research Institute (SIPRI) (Solna, Sweden)
- UNESCO (Paris)
- United Nations Centre on Transnational Corporations (UNCTC) (New York)

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[1] V. Bornschier and P. Heintz, eds., *Compendium of Data for World-System Analysis. A Sourcebook of Data Based on the Study of MNCs, Economic Policy and National Development.* Reworked and enlarged by Thanh-Huyen Ballmer-Cao and Jürg Scheidegger. Sociological Institute of the University of Zürich. Zürich, 1979.

- United Nations Conference on Trade and Development (UNCTAD) (Geneva)
- United Nations Publications Board (New York)
- United States Arms Control and Disarmament Agency (Washington, D.C.)
- University Center at Binghamton (State University of New York) (Binghamton, N.Y.)
- Wissenschaftszentrum Berlin (Berlin)
- World Bank (Washington, D.C.)
- World Health Organization (WHO) (Geneva)
- World Intellectual Property Organization (WIPO) (Geneva)

And last, but not least, we would like to express our gratitude to the *staffs* of the *Johns Hopkins University Press* in Baltimore and the *Campus Verlag* in Frankfort. They have helped us to review the text and to organize this first edition of the handbook.

# CONTENTS

# CHAPTER 1

# AN OVERVIEW

# ON THE OBJECTIVES OF THE COMPENDIUM

During the last fifteen years there has been a growing awareness of the interdependence of the world. Many processes that first affected only a few countries have turned out to be relevant for many others. The spread of Islamic militancy and the growing indebtedness of the third world are only two of the more prominent examples of this kind. This interdependence suggests the existence of a *world system* that we conceive of as a very extended and complex *field of various types of interactions.*[1] This field is shaped not only by the policies of national governments. On the contrary, there are many *other* actors who heavily influence the dynamics of this system: Multinational corporations that affect the internal income distribution of their host countries are just one example of the importance of nongovernmental actors. Other examples are the International Monetary Fund, labor unions, and guerrilla movements.

One of the *key objectives* of this data compendium is the *description* of this global field of interactions. However, this field is so complex that a complete realization of this goal is unrealistic. Hence we have tried to *reduce* this *complexity* in several ways:

*First,* all information in this compendium refers to *national societies.* In spite of this simplification we do *not* deny the importance of nongovernmental actors in the dynamics of the world system. Rather we assume that most of these actors are so closely tied to national societies that their behavior and their properties can be described in terms of the behavior and properties of nations. For example, we describe political strikes of students or workers by strike rates that are attributes of the nations of origin of these groups.

*Second,* our compendium refers to the *decade of the seventies* only. This simplification can be justified in two ways. On the one hand, the sixties are relatively well documented in an earlier version of this handbook which was edited in 1979 by V. Bornschier and P. Heintz.[2] On the other hand, during the time period covered by this compendium the world system underwent some remarkable changes, such as the exponential increase of the oil prices and the end of the monetary system with fixed exchange rates. Hence we have decided to confine our description to this interesting but insufficiently described decade of the seventies.

*Third,* our compendium contains only variables that are relevant for the following types of analyses:
a) The analysis of *international rank orders* that are based on the uneven participation of national societies in scarce goods such as wealth or military strength.
b) The analysis of *reactions* induced by the world system. Such reactions can be the response of a national government or of any other social actor that adapts its behavior to new risks or chances of the world system.
c) The analysis of *international exchange relations.* Such exchange relations can be initiated either by national governments or by other nationally tied actors such as entrepreneurs investing abroad or emigrating individuals.

*Fourth,* we have confined our description of the *international exchange relations* to the interactions with those *three partners* of a nation that are *most important* with regard to a given exchange relation. This way interaction matrices with thousands of elements can be compressed to a manageable size.

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[1] For an overview of the different concepts of *world system* see V. Bornschier, "Weltsystem," in D. Nohlen, ed., *Pipers Wörterbuch zur Politik,* vol. 5 (München, 1984), pp. 535 ff.

[2] For the corresponding bibliographical reference see *footnote 1* on p. vii.

A data compendium like the present one potentially performs a least three different functions. One of these functions is the *testing of hypotheses* by means of the usual statistical methods. A second one is the *provision of encyclopedic information* about countries. Finally a data collection should also be a *heuristic device for theory construction.* The performance with regard to these three functions differs from one data collection to another. Most of them are well suited for hypothesis testing. Moreover, data compendia that present their information in country profiles can easily be used as encyclopedias. However, with regard to their heuristic functions for theory construction most of the existing data collections are less satisfactory. Hence the second *key objective* of this compendium is the *promotion of exploratory data analysis* [3] as an instrument for theory construction. With regard to this objective the data are presented in such a way that empirical regularities can be discovered *without resort to computer resources.* More precisely, this compendium is designed in such a way that paper, pencil, and a simple pocket calculator are sufficient to get preliminary answers to the following kinds of questions:

a) Which nations have similar properties as the one under consideration?
b) Is there a difference between the median values of the members and the nonmembers of a group of nations?
c) Did the members of a group experience an upward or a downward mobility?
d) Is there a significant correlation between two variables?
e) Are the structures of two exchange relations isomorphic or not?

The methodology to answer these questions is described in *chapter 2.* It is based on *percentile information* and *cross references* to nations with similar structural properties.

To realize the aforementioned objectives we have collected data for 128 nations, 51 variables, and 1 to 3 timepoints/ timeintervals. These data are presented in two principal chapters. One of them is a collection of alphabetically ordered *country profiles* (chapter 4). The other one consists of *variable descriptions* with detailed summary statistics (chapter 3). In the following two sections the content of these two chapters is described in full detail.

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[3] By *exploratory data analysis* we mean a preliminary probing of data. Hence we follow the spirit of J. Tukey, *Exploratory Data Analysis* (Reading, Mass., 1977). However, we do *not* follow the techniques outlined in this book.

# THE CONTENTS OF THE COUNTRY PROFILES

Above all, the key objectives of this compendium are realized by means of the country profiles in *chapter 4*. For every nation that was politically independent sometime between 1960 and 1980 and that simultaneously had at least 1 million inhabitants there is a country profile with all the relevant information about the country considered. The country profiles are *ordered alphabetically by country*. A complete list of the countries profiled is provided in the *appendix*.

All country profiles have the same layout, which is illustrated by the following facsimile:

①   ②

**AUSTRIA  (AURIA)**   ③ ⑤   ⑧ ⑨   ⑥ ⑦   ⑫ ⑬ ⑭

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| V1 | INCOME PER CAPITA | 1970 | D9 | P81 | 6673 | $/CAP | JAPAN | NEWZ | F147 |
| | | 1975 | D9 | P82 | 7996 | $/CAP | UNKI | LIBYA | F147 |
| | | 1980 | D9 | P81 | 9473 | $/CAP | JAPAN | AULIA | F147 |
| V2 | TELEPHONES P. TSD. POPULATION | 1970 | D9 | P87 | 193 | 1/TSD CAP | ITALY | JAPAN | ---- |
| | | 1975 | D9 | P85 | 281 | 1/TSD CAP | FRANC | BELGI | ---- |
| | | 1980 | D9 | P84 | 401 | 1/TSD CAP | BELGI | NORWY | ---- |
| V3 | INFANT MORTALITY RATE | 1980 | D2 | P18 | 14.3 | 1/TSD | NEWZ | ITALY | ---- |
| V4 | PHYSICIANS P. MIL. POPULATION | ------ | ---- | ---- | ----- | ----- | ------- | ------- | ---- |
| V5 | ADULT LITERACY | ------ | ---- | ---- | ----- | ----- | ------- | ------- | ---- |

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| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| V50 | PROVENANCE OF FOREIGN FIRMS | 1980 | R1 | GFR | 44.4 | % | ------- | YUGO | ---- |
| | | 1980 | R2 | USA | 16.5 | % | AULIA | DENMA | ---- |
| | | 1980 | R3 | SWITZ | 11.9 | % | COSTA | GFR | ---- |
| V51 | FILM SUPPLIERS | 1980 | R1 | USA | 107 | | AULIA | BOLI | F120 |
| | | 1980 | R2 | ITALY | 50 | | ARGE | BOLI | F120 |
| | | 1980 | R3 | GFR | 46 | | ------- | BRAZI | F120 |

④

⑪ ⑩

The information contained in this layout is defined as follows:

*1: Full name of the country* to which the profile refers.

*2: Short name of country (1).*

*3: Full name of the variable* to which the following data lines refer.

*4: Short name of variable (3).*

*5: Timepoint or timeinterval.*

*6: Value.*

*7: Units* of value (6).

*8: Decile* to which value (6) belongs. The deciles are denoted as D1, D2, D3, ... , D10, where D1 contains the lowest values (6) and D10 the highest ones. If several countries have identical values (6) a *common mean* decile is assigned to all these countries. Generally, for different timepoints/timeintervals (5) there are different systems of decile boundaries. However, two values (6) have been classified by the *same* system of deciles if they refer to timepoints/timeintervals that differ by not more than *2 years* from the *same* timepoint/timeinterval 1970, 1975, 1980, 1970-1974, 1975-1979, or 1970-1979.

*9: Percentile* to which value (6) belongs. The percentiles are denoted by P1, P2, P3, ... , P100, where P1 contains the lowest values (6) and P100 the highest ones. If several countries have identical values (6) a *common mean* percentile is assigned to all these countries. Generally, for different timepoints/timeintervals (5) there are different systems of percentiles. However, two values (6) have been classified by the *same* system of percentiles if they refer to timepoints/timeintervals (5) that differ by not more than *1 year* from the *same* timepoint/timeinterval 1970, 1975, 1980, 1970-1974, 1975-1979, or 1970-1979.

*10: Partners* of country (1) with regard to a variable (3) that describes an exchange relation.

*11: Rank* of a partner nation (10) with regard to a variable (3) that describes an exchange relation. The ranks are denoted by R1, R2, and R3, where R1 represents the highest and R3 the lowest rank.

*12: Predecessor nation* in an ordered chain of countries. The components and the structure of such a chain depend on the type of the variable (3). A chain of nations contains only countries with values (6) that refer to timepoints/timeintervals (5) that differ at most by 2 years from the *same* timepoint/timeinterval 1970, 1975, 1980, 1970-1974, 1975-1979, or 1970-1979. The ordering of the chains depends on the type of the variable (3):

a) For the variables V1 to V34 and V41 to V46, which have been measured on *ordinal, interval, or ratio scales,* the chains are normally ordered by *increasing values (6)* of the members of the chain. However, if the values of 2 or more countries are identical the ordering of the chain is based on the *short names (2)* of these countries. Hence, the first 3 nations of example (A) are ordered by their short names whereas the ordering of the last 3 countries is based on their values (6).

*Example A: Predecessors with regard to V26.*

| Country ordered by position in the chain | Predecessor | Value of V26 | Timepoint |
|---|---|---|---|
| ALGER | -------- | 0.00 | 1970 |
| IRAN | ALGER | 0.00 | 1970 |
| NIGRA | IRAN | 0.00 | 1970 |
| . | . | . | . |
| . | . | . | . |
| FRANC | NETH | 0.69 | 1970 |
| LIBYA | FRANC | 2.01 | 1970 |
| SAUDI | LIBYA | 5.59 | 1970 |

b) For the variables V35 to V40, which have been measured on *nominal scales*, the predecessor of nation (1) is that country that has the *same value (6)* as nation (1) and that precedes nation (1) with regard to the alphabetic order of the short names of the countries. Hence example (B) consists of *2 independent* chains of nations with 2 different values on a nominal scale. Each chain is ordered by the short names of its member countries.

*Example B: Predecessors with regard to V36.*

| Country ordered by position in the chain | Predecessor | Value of V36 | Timepoint |
|---|---|---|---|
| AFGHA | -------- | 0 | 1980 |
| ALBA | AFGHA | 0 | 1980 |
| ANGO | ALBA | 0 | 1980 |
| . | . | . | . |
| . | . | . | . |
| ZIMBA | ZAMBI | 0 | 1980 |
| ALGER | ------- | 1 | 1980 |
| ECUA | ALGER | 1 | 1980 |
| GABON | ECUA | 1 | 1980 |
| . | . | . | . |
| . | . | . | . |
| VENE | UNARE | 1 | 1980 |

c) For the variables V47 to V51, which describe *exchange relations,* the corresponding chains are organized in the following way: Nations that belong to the same chain *always* have the *same partner (10)* with regard to the exchange relation considered. Besides, these chains are ordered in such a way that nations for which the stated partner (10) has a higher rank (11) always precede those other nations for which the same partner (10) has a lower rank (11). If the stated partner (10) has for several nations the same rank (11) the nations are ordered by their alphabetic short names. From this definition it follows that for a variable like *film suppliers (V51)* there are several chains of nations. One of them consists of all the nations for which INDIA is an important film supplier (see example C). The first 4 nations of this chain are those for which INDIA occupies rank R1. Hence these nations are ordered by their alphabetic short name. For the following nations, ISRA, JORDA, KUWAI, ... , the film supplier INDIA occupies rank R2. This second group of nations is also ordered alphabetically. It is followed by a third group of alphabetically ordered nations for which INDIA always occupies rank R3.

*Example C: Predecessors with regard to V51.*

| Country ordered by position in the chain | Predecessor | Rank of partner | Partner with regard to V51 | Timepoint |
|---|---|---|---|---|
| MOROC | -------- | R1 | INDIA | 1982 |
| RWAN | MOROC | R1 | INDIA | 1980 |
| SOMA | RWAN | R1 | INDIA | 1982 |
| TANZA | SOMA | R1 | INDIA | 1980 |
| ISRA | TANZA | R2 | INDIA | 1980 |
| JORDA | ISRA | R2 | INDIA | 1980 |
| KUWAI | JORDA | R2 | INDIA | 1980 |
| . | . | . | . | . |
| . | . | . | . | . |
| . | . | . | . | . |
| YENO | TRITO | R2 | INDIA | 1980 |
| ALGER | YENO | R3 | INDIA | 1980 |
| . | . | . | . | . |
| . | . | . | . | . |
| . | . | . | . | . |
| SUDAN | SRILA | R3 | INDIA | 1979 |

*13: Successor nation* in the chain defined before. Hence the composition and the ordering of the chain are the same as for the *predecessor nation.*

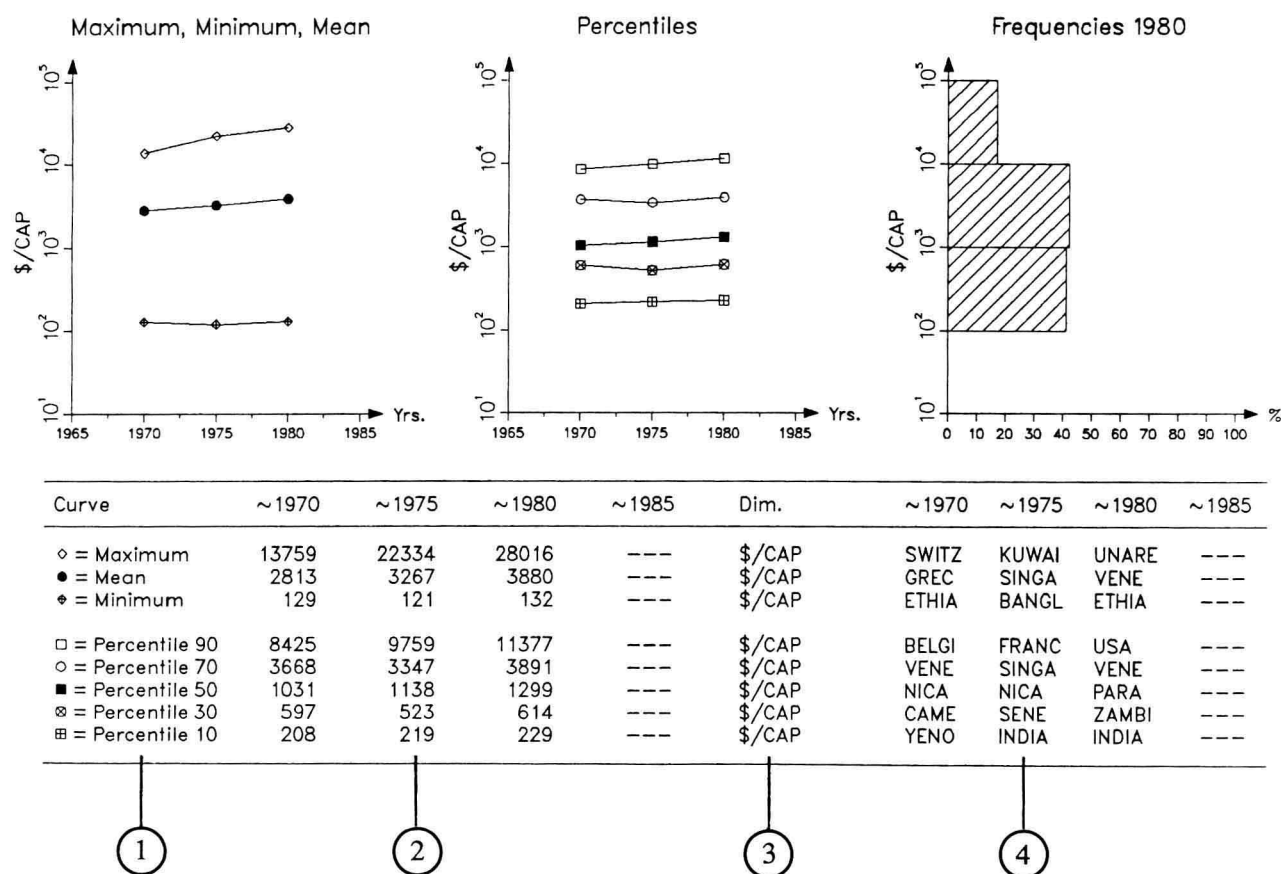*14: Reference* to a *footnote* in the first part of the *appendix.*

## THE CONTENTS OF THE VARIABLE DESCRIPTIONS

In order to give the reader additional information about the variables in the country profiles, we supply in *chapter 3* detailed descriptions for all 51 variables used in this compendium. Each of these variable descriptions contains the following information:

a) Two *short names* of the variable considered.

b) The *definition* of the variable.

c) The *computational procedure* used for the variable considered. This information is omitted whenever the computational procedure is identical to the theoretical definition (b).

d) The *scaling* of the variable, which informs the user about the type and the units of the scale used for the measurement of the variable considered.

e) The *quality of data,* which informs the user among other things about their crossnational and diachronic comparability.

f) The *availability of data* measured by the approximate number of observations referring to a certain timepoint/timeinterval.

g) The *sources* used for the data collection.

h) A *statistical overview* containing summary statistics. These summary statistics are generally based on information that differs by not more than 2 years from the timepoints/timeintervals 1970, 1975, 1980, 1970-1974, 1975-1979, or 1970-1979. The scope and the presentation of these summary statistics depend on the variable to which they refer.

For the variables V1 to V34 and V41 to V46, which have been measured on *ordinal, interval,* or *ratio scales,* the statistical overviews are presented in the following way:

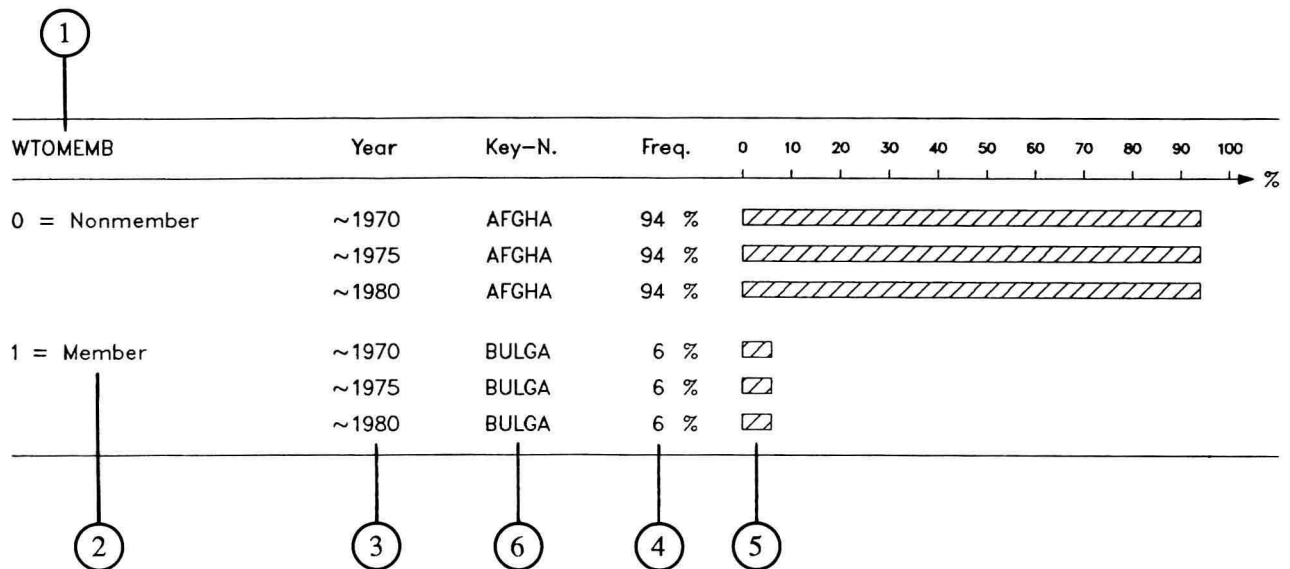| Curve | ~1970 | ~1975 | ~1980 | ~1985 | Dim. | ~1970 | ~1975 | ~1980 | ~1985 |
|---|---|---|---|---|---|---|---|---|---|
| ◊ = Maximum | 13759 | 22334 | 28016 | --- | $/CAP | SWITZ | KUWAI | UNARE | --- |
| ● = Mean | 2813 | 3267 | 3880 | --- | $/CAP | GREC | SINGA | VENE | --- |
| ✦ = Minimum | 129 | 121 | 132 | --- | $/CAP | ETHIA | BANGL | ETHIA | --- |
| □ = Percentile 90 | 8425 | 9759 | 11377 | --- | $/CAP | BELGI | FRANC | USA | --- |
| ○ = Percentile 70 | 3668 | 3347 | 3891 | --- | $/CAP | VENE | SINGA | VENE | --- |
| ■ = Percentile 50 | 1031 | 1138 | 1299 | --- | $/CAP | NICA | NICA | PARA | --- |
| ⊗ = Percentile 30 | 597 | 523 | 614 | --- | $/CAP | CAME | SENE | ZAMBI | --- |
| ⊞ = Percentile 10 | 208 | 219 | 229 | --- | $/CAP | YENO | INDIA | INDIA | --- |

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*Legend to the preceding sample graphic:*

*1: Statistical measure.*

*2: Value* of the statistical measure (1).

*3: Units* attached to the value (2).

*4: Key Nation* = Nation that occupies the position *closest* to value (2) on the variable under consideration. If several countries have the same position on this variable the *key nation* is the first nation in the alphabetic order of the short names of these countries.[4]

In some cases the preceding graphic contains no *diagram*. However, the definitions of the elements of the corresponding *table* remain the same.

For the variables V35 to V40, which have been measured on *nominal scales*, the following standard layout is used for the statistical overviews:

| WTOMEMB | Year | Key-N. | Freq. | | | | | | | | | | | | % |
|---------|------|--------|-------|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | 0 | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 100 | |
| 0 = Nonmember | ~1970 | AFGHA | 94 % | | | | | | | | | | | | |
| | ~1975 | AFGHA | 94 % | | | | | | | | | | | | |
| | ~1980 | AFGHA | 94 % | | | | | | | | | | | | |
| 1 = Member | ~1970 | BULGA | 6 % | | | | | | | | | | | | |
| | ~1975 | BULGA | 6 % | | | | | | | | | | | | |
| | ~1980 | BULGA | 6 % | | | | | | | | | | | | |

*Legend to the preceding sample graphic:*

*1: Variable* to which the graphic refers.

*2: Value* of variable (1) to which the following lines refer.

*3:* Approximate *year* to which the line refers.

*4: Percentage of all countries with value (2).*

*5: Visualization of percentage (4).*

*6: Key Nation* = First nation in the alphabetic order of the countries with value (2) on variable (1). Hence the *key nation* is the first nation in the corresponding chain of countries shown in the *country profiles.*

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[4] The percentiles in the *statistical overviews* are based on a *different sample* than the percentiles shown in the *country profiles* (see pp. 6 and 9). In certain cases this results in minor differences between the percentile information of the statistical overviews and the corresponding information shown in the country profiles of the *key nations.*