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6   Purchasing Power Parities for Medical Care and Health Expenses: An Informal Report

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This paper describes the methods and the classification that were used by Eurostat in March 1996 for calculating purchasing power parities (PPPs) in the framework of the Eurostat-OECP PPP Programme. It also presents the possible developments in methods and classification that could be foreseen at that time.

6.1   The Present PPP (Purchasing Power Parity) Classification for Goods and Services for Medical and Health Care

The present PPP classification for medical and health care goods and services used by Eurostat (see the appendix) has been developed following the same principles that govern the development of the PPP classification in the other sectors of the economy. This involves the definition of classes of products (PPP basic headings) (*a*) that are relatively homogeneous in terms of spatial price ratios so that the principle of representativity can be used (a sample of products is selected the price ratios of which represent the price ratios for all the products of that class) and (*b*) for which national accounts expenditure data can be supplied by all the participating countries. Because of the first principle (representativity), one could say that the PPP classification is a *homogeneous price ratio–oriented classification.* The development of such a classification is based on the fact that prices are economically linked to each other inside a certain economic area (e.g., a country), and this is the more true the more homogeneous the products are.

As a consequence, the variability of spatial price ratios is in general relatively small within a homogeneous class of products, enabling the use of the

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aforementioned principle of representativity. However, the state is heavily involved in the health care sector of the economy, at different levels and in different ways in different countries. Because of this intervention, "market prices" could be "disturbed" or may not exist at all for certain services (nonmarket services). This could endanger the basic principles on which the classification is built (the homogeneous price ratio–oriented classification).

Another problem is that, because of institutional differences between the countries and because of a lack of harmonization between countries concerning the national rules for recording this expenditure, expenditure for the same goods and services is classified under *household final consumption expenditure* in some countries, under *government final consumption expenditure* in other countries, and under both in yet other countries.[1] This is a major problem because the detailed levels of the two sectors of the classification (household and government expenditure), for which all the countries can supply data on values, are very different. In fact, there are *twenty* basic headings on the household consumption side and just *one* basic heading on the government consumption side used in the calculations. These basic headings are indicated by an asterisk in the appendix.

Since all these goods and services are actually consumed by individuals, in order to compare the total volume of *household actual individual final consumption,* government final consumption expenditure must be added to household final consumption expenditure. To sum household and government expenditure appropriately, one should have the same level of detail for the government part of the classification as for the household part (twenty basic headings). In this situation, after having summed the twenty values of household expenditure with the twenty corresponding values of government expenditure, one could use twenty specific parities (already available—see sec. 6.2) to deflate the twenty "sum values." But, as we saw above, a breakdown of government expenditure for medical and health care goods and services is not available for all countries. As a consequence, this operation can be carried out only *at the global level* (i.e., group 133 in the appendix is added to group 115).

This means that the government expenditure values (group 133) are deflated using the global PPP for medical care and health expenses calculated for the household consumption sector (group 115) as if the internal structures of household consumption and government consumption were similar (in fact they are not). This is probably an important source of error in the results, one that could be corrected if all the countries provided the necessary information. This is why Eurostat started trying to collect from all countries government expenditure data for the four major aggregates plus a residual class (see the basic headings carrying a dagger in the appendix), in order to reduce the imbalance between the two sectors of the classification.

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1. For the sake of simplicity, I do not consider in this paper the final consumption expenditure of nonprofit institutions serving households.

Finally, because of the differences between the countries in the definition of the national health service and of the social security system, the expenditure for certain services may be classified under *medical care and health expenses* (group 133) in some countries and under *social security and welfare expenses* (group 134) in others.

6.2   The Present System for Calculating PPP

6.2.1   Household Final Consumption Expenditure

For *group 1151* (medical and pharmaceutical products), market prices (global prices) are collected. *Global price* is defined as the price that the consumer would have paid in the case of the absence of any social security subsidy. In other words, the prices to be collected are the sum of the consumer contribution and the social security system contribution.[2]

For *subgroup 11511* (pharmaceutical products), the number of products in the survey list is large (more than seven hundred). There are two main reasons for this: (1) The national markets are very different (products popular in certain countries are not available in other countries), and all the countries should have their own characteristic products on the list in order to respect the principle of the equicharacteristicity of the basket.[3] (2) The market prices are disturbed by the intervention of state subsidies. As a consequence, price ratios are less homogeneous than in other sectors of the economy. The result is that one needs a bigger sample of products to obtain sound PPP estimates (i.e., it is more difficult to apply the principle of representativity). In fact, Eurostat could introduce up to fourteen basic headings (therapeutic classes) if the corresponding values were available for all countries. Three classes (analgesics, anticoagulants, and products for ophthalmology) in particular seem to exhibit "price-level behavior" in the various countries that is very different from that of the rest of the group.

For *subgroup 11512* (other medical products), and for *group 1152* (therapeutic appliances and equipment), market prices (global prices) are collected. The situation is similar to that described for group 11511. However, since the size (and weight) of these groups is smaller, the number of products in the survey list is also smaller (about twenty and fifty, respectively).

For *group 1153* (services of physicians, nurses, and related practitioners outside hospitals), market prices (global prices) are collected. It may be very difficult to estimate global prices, especially when the direct payment is zero (i.e., when the whole cost is sustained by the social security system). Another prob-

2. Accordingly, the values should be classified partially under household final consumption expenditure and partially under government final consumption expenditure; the same parity (based on global prices) should be used to deflate both values.
    3. Compliance with the equicharacteristicity of the basket is essential to avoid distortions in the results, distortions that are due to the Gerschenkron effect.

lem for this group is the quality difference between the same kind of service in different countries.

For *group 1154* (hospital care and the like), the market prices approach has not given convincing results, first, because it is very difficult to estimate the global cost of a specific service in public hospitals and, second, because private clinics are of such limited significance that they may not yield representative figures. Furthermore, the national accounts values for hospitals are calculated using the "input costs" approach. For these reasons, the "input prices" approach is used to calculate PPP in this field.

The input costs approach is based on the assumption that services not sold at market prices have a value equal to the value of production, estimated on the basis of the costs incurred (a national accounts convention). These costs are mainly (1) intermediate consumption, (2) consumption of fixed capital (depreciation), and (3) compensation of employees. For intermediate consumption, specific surveys are not carried out, but the PPPs calculated for the corresponding household consumption items are used. For the consumption of fixed capital, specific surveys are not carried out, but the PPP calculated for gross fixed capital formation is used. For the compensation of employees (the most important in terms of weight), the remuneration costs for twelve types of job are collected and compared.

This method fails to take into consideration differences in productivity in nonmarket service production in the countries compared. Methods to estimate differences in productivity are currently being studied.

6.2.2 Government Final Consumption Expenditure

As already mentioned, the values of group 133 are deflated using the PPPs of group 115.

6.3 The Direct Approach?

It has been suggested that an alternative approach for medical and health care services (groups 1153 and 1154) would be to use "output indicators" (physical indicators) to arrive directly at a volume comparison (without calculating PPPs). There are, however, many practical problems with this approach.

Whereas it is possible to create a homogeneous price ratio–oriented classification, it is not feasible to create a homogeneous *quantity* ratio–oriented classification. This is because the quantities consumed of a given set of products vary considerably in time and in space and their behavior does not have the same economic rationale as does that of prices (quantities depend on national consumers' habits). This implies that the representativity principle used to select a sample of products cannot be applied in this case. So it can be argued that the only way to use this approach would be to create a very detailed classification of all the different services provided and collect both values (expenditure) and quantities for each of them.

Therefore, if the direct approach is to be used, two major problems must be solved: (1) the problem of creating a common and very detailed classification (at "product level") in a sector where many problems of product comparability between the countries exist; and (2) the practical problem of collecting both quantities and expenditure for all the services offered in the different countries. Is this possible?

6.4   A Summary of Actions for Possible Future Improvements

Regarding problems with classification and expenditure, a possible goal would be to reduce the imbalance between the detailed levels of the two sectors of the classification (household and government expenditure) and to agree on the boundaries between "medical care and health expenses" and "social security and welfare services." Regarding problems with the services of physicians, nurses, and related practitioners outside hospitals, a possible goal would be to improve the definitions of the services for which prices are collected in order to reduce the distorting effects on results that are due to the quality differences between different countries for the same kind of service. Regarding the compensation of employees providing hospital and similar care, a possible goal would be to improve the definitions of the standard types of jobs for which remuneration costs are collected and compared and to continue to study new methods of estimating differences in productivity between countries. Finally, regarding the direct approach, a possible goal would be to investigate whether such an approach is in fact feasible.

Appendix
Eurostat PPP Classification for Medical Care and Health Expenses

Table 6A.1   Codes and Descriptions

Code	Description
1	Gross domestic product
11	Household final consumption expenditure
115	Medical care and health expenses
1151	Medical and pharmaceutical products
11511	Pharmaceutical products
115111.1	Pharmaceutical products*
11512	Other medical products
115121.1	Other medical products*

(continued)

Table 6A.1 (continued)

Code	Description
1152	Therapeutic appliances and equipment
11521	Eyeglasses
115211.1	Eyeglasses*
11522	Orthopedic appliances and other therapeutic appliances and equipment
115221.1	Orthopedic appliances and other therapeutic appliances and equipment*
1153	Services of physicians, nurses, and related practitioners
115311.1	Services of general practitioners*
115321.1	Services of specialists*
115331.1	Services of dentists*
115341.1	Services of nurses*
115351.1	Services of other medical practitioners outside hospitals*
115361.1	Medical analyses*
1154	Hospital care and the like
11541	Compensation of employees
115411.1	Physicians*
115411.2	Nurses and other medical staff*
115412.1	Nonmedical staff*
11542	Intermediate consumption
115421.1	Food and beverages*
115422.1	Pharmaceutical products*
115423.1	Therapeutic equipment*
115424.1	Other equipment*
115425.1	Water, energy products*
115426.1	Other goods and services*
11543	Depreciation
115431.1	Depreciation*
13	Government final consumption expenditure
133	Medical care and health expenses*
133111.1	Medical and pharmaceutical products[†]
133211.1	Therapeutic appliances and equipment[†]
133311.1	Services of physicians, nurses, and related practitioners[†]
133411.1	Hospital care and the like[†]
133511.1	Other public health services[†]
134	Other individual services
134111.1	Social security and welfare services

*Basic headings used for calculating PPP.

[†]Basic headings for which Eurostat is trying to collect expenditure data from all the countries.