Measuring social security performance

Performance indicators for social security schemes

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1. Introduction

1.1 Necessity of measuring performance of social security

Since the first broad system of social insurance was created by the Government of Germany under Chancellor Bismarck between 1883 and 1889, a century has passed and the number of countries with social security programme has been steadily expanding. The impact of social security, to the welfare of people and to the general economy, has increased in line with the increase this increase. However, when having a glance at the overall performance of social security in many of these countries, it has been disappointing, especially essential aspects such as the extent of social security coverage.

Although it would be difficult to list up all the various and complex reasons of disappointing performance of social security, there are some obvious reasons. Some are external: many schemes are struggling to cope with new obligations in a new political and economic environment and make efforts to adjust themselves to the situations. These are classified as design issues of social security. Some are internal and so-called 'governance[1]' problems: many schemes lack fundamental information, for example, how many are covered compared to how many should be covered according to the legislation or the relative level of the present contribution rate compared to the pay-as-you-go cost rate (the contribution rate which is necessary to balance annual expenditure and income). As a consequence, policy makers and administrators of social security schemes cannot and do not take necessary measures to remedy shortcomings of the schemes and this inevitably leads to the lack of confidence of people in social security and may cause failure of social security.

In particular, governance problems persist because of[2]:
at the strategic or macro-policy level,

- no mechanism for monitoring the overall performance of the social security schemes;
- insufficient quantitative analysis to provide sound basis for decision making; and

at the operational level,

- failure to establish key indicators relating to objectives in order to monitor performance.

Whether problems arise from conceptual and design issues or governance issues, they cannot be solved without clear understanding of the issue. Remedial actions can be taken only after

[1]Governance in this document does not only refer to the management of social security in a narrow sense but also to a more broad sense of all the elements how objectives of social security are efficiently and effectively met.

[2]Please see Bailey C. 'An operational framework for pension reform'.

diagnostics are clearly specified. In order to improve planning and governance of social security, it is the very first step to have correct information and analyse from various points of view how the schemes are performing. Even though it usually takes much time and energy to clarify situations and to discuss problems not based on ideology but based on facts, this step is fundamentals for logical and democratic decision-making among democratically-elected stakeholders, which is the only successful and sustainable for a long term operation of social security. Performance indicators serve as a catalyst for enhancing democratic and decision-making process through greater transparency of the system.

From the point of view of sustainability of social security, necessary information should be standardised so that information is useful for understanding the situation of the scheme and should be collected regularly so that historical analysis can be carried out. However, it is not easy to choose and prepare information of essential aspects of social security without wide and deep knowledge and experience of social security in both domestic and international contexts. Furthermore, in the context of scarce resources, particularly in developing countries, core data should be carefully selected so that they should effectively give essential information[3].

Although the basic concept of having indicators has been discussed in some papers, no standard set has been produced[4]. Difficult as it is to standardize indicators in different social and economic content, a set of standard quantitative indicators should be developed as a handy tool of assessment of the scheme, which might lay common factual basis in decision-making process by all social partners, i.e. various stakeholders of social security schemes, i.e. managers and supervisory bodies of the schemes as well as contributors and beneficiaries of the scheme.

1.2 Users of performance indicators

Those who have an interest in the social schemes and are involved in the planning and governance of the schemes - the stakeholders - are governments, social security institutions (both public and private), the social partners - employers and workers - and contributors and beneficiaries who may or may not be workers.

Social security schemes are well-adapted to various needs of different stakeholders when there is a wide consensus among various stakeholders. As transparency of information is one of the

[3]It is often seen that necessary information is lacking in a thick statistical yearbook partly because they are not related with other statistics or partly because they become obsolete in the changing environments.

[4]For example, see Tamburi G. and Mouton P. 'Social security indicators'.

most important conditions for establishing a consensus among stakeholders, performance indicators should be developed and serve for different stakeholders according to their different needs.

However, it should be well noted that there are conflicting requirements of indicators owing to variety of stakeholders, notably simplicity vs. comprehensiveness of indicators: professional stakeholders, who have extensive knowledge and experience on social security (e.g. social security policy analysts who carry out detailed researches on social security and managers of social security schemes who deal with day-to-day managements) do not hesitate to and are rather willing to have many indicators of different hierarchies and categories in order to have better ideas of how the scheme is performing from different points of view, while non-professional stakeholders with less knowledge and experiences of social security (e.g. high-ranking officials in government, board members of social security institutions, representative of employees, workers, and contributors and beneficiaries to the schemes) might like to rely on several, simple indicators. There are other conflicting needs or requirements for indicators, which is discussed in the next section in more details.

This paper should be considered as a starting point for enhancing performance of social security schemes by establishing a set of indicators. A real implementation of these indicators in a specific country, i.e. modifying indicators proposed in this document in line with the specific scheme, collecting necessary statistics, calculating indicators based on statistics, analysing and reporting them to stakeholders, and finally discussing problems on these indicators, is a much longer way to go. However, it should be stressed that going through this process itself is an import process of enhancing governance of the scheme: for instance, those who plan the whole set of indicators are forced to think what indicators are necessary for analysing performance of social security schemes; statisticians realize what statistics are necessary but lacking; those who discuss problems based on indicators think in a organized way what should be remedied with respect to the scheme.

2. Scheme-based performance indicators

2.1 The indicator concept

2.1.1 Scope of the indicators

Since indicators should serve as a governance tool for social security schemes, they should be constructed in a way that they measure, in principle, every quantifiable aspect of multidimensional phenomena of social security in an organized way. Although perfect standardization of various social security schemes all over the world is impossible owing to individual features of each scheme, the scope of indicators is set as wide as possible. Many indicators should be valid regardless of different characteristics of social security schemes, such as types of schemes, financing methods (e.g. tax-financed vs. contribution financed, the pay-as-you-go system vs. funded system) or types of benefits (pensions, short-term benefits etc.). Furthermore, indicators should measure performance of social security in the context of the country in general (e.g. coverage of all social security schemes, not the coverage of a specific scheme) as well as specific performance of the scheme.

Since indicators should give a clear picture of all aspects of social security and should be used in decision-making process as well as in improvement of day-to-day businesses of social security schemes, the range of indicators is not only limited to indicators in a 'narrow' sense, i.e. those measuring day-to-day administrative efficiency (e.g. speed of contribution collection and benefit payments), but also covers such areas as the effect of scheme design (e.g. maximum and minimum ceilings on contribution-base salary) or a financial status of the scheme (the pay-as-you-go cost rate).

In addition, indicators do not only measure efficiency of schemes (e.g. The scheme is more efficient in benefit payments if the time-lag between the claim and the payment is smaller.) but also describe a state of the scheme which has nothing to do with the notion of efficiency (e.g. The pay-as-you-go cost rate itself does not tell whether the scheme is managed well or badly.)

As each country or scheme has its characteristics, some indicators might need modifications in line with the specific context surrounding the scheme.

2.1.2 Necessary characteristics of indicators

There are some characteristics which indicators should satisfy. It is essential that indicators should be selected to satisfy as much necessary characteristics mentioned below as possible. Some of the characteristics overlap characteristics required for statistics or financial reports such as accounting reports[5] and some are more pertinent to indicators (e.g. conciseness).

It should be well noted that some of the below-mentioned features sometimes conflict with each other. For example, comprehensiveness cannot always go with the notion of quantifiability, since not every aspect of social security is quantifiable. Some compromise among characteristics should be made in order to construct a set of performance indicators. However, the following characteristics can be born in mind when a set of indicators is constructed or revised according to different environments and changing needs of social security.

Comprehensiveness

As mentioned in 2.1.1, the scope of indicators should be as wide as possible and the dimensions of them should be established so that they measure all essential aspects of social security. The standard indicators are constructed, in principle, so that they can be applied to any country and any scheme and cover all essential dimensions, such as coverage, benefit and contribution level,

[5]See 'Principles of Health Accounting for International Data Collections, Working Party on Social policy Ad Hoc Meting of Experts in Health Care (OECD, 1997)' for summary of criteria of National Health Accounts (NHAs).

administrative efficiency and the financial status.

However, this paper mainly targets at national formal sector schemes. Different approaches should be taken for informal sector schemes, e.g. community based schemes, where statistics are in their nature difficult to get. Besides, the indicators for health insurance are not considered in this paper because it cannot be standardized of the specific nature of benefit packages (i.e. benefits in kind).

Consistency

It is important that indicators are consistent over time (i.e. internal consistency of itself), especially for those which have much to do with historical development of the scheme, such as the demographic ratio (the number of beneficiaries divided by the number of insured persons). Besides consistency over time, since some indicators are closely related with one another and studied in relation to other indicators (e.g. the pay-as-you-go cost rate is in principle the product of the demographic ratio and the replacement rate.), interrelated consistency should be secured by the definition of each indicator and by using consistent statistics in calculating related indicators.

International comparability

Although poor consistency of underlying statistics and different social and economical situations of each country do not allow naive cross-country comparison of indicators, studying indicators in the international context sometimes helps to understand the situation in the country.

For example, the pay-as-you-go cost rate in any country will inevitably increase in the long run by aging so long as the benefit level is kept and it can be understood by looking at the increasing demographic ratio. Hence, stakeholders of the scheme with young demographic structure can roughly guess some future prospects by comparing these indicators with those of the schemes with more aged demographic structure (e.g. schemes of the OECD countries).

It might be possible that some indicators of other countries can be used as yardsticks to compare with indicators of one's own country. Of course, much attention should be paid in interpreting indicators in the international context, e.g. comparing indicators of one's own country with other countries. Otherwise, international comparison often leads to wrong or skewed conclusions. For instance, even indicators on efficiency (e.g. handling time of contributions or benefits), which are comparably easy to understand, are heavily influenced by social and economic development factors (e.g. the level of understanding of the scheme or general education level of insured persons, beneficiaries and the staff, equipment of the scheme, most notably, electronic data base of insured persons and beneficiaries). Therefore, it is sometimes meaningless to compare a scheme that has just started operations in a developing country to a developed country scheme with a long history. Adding to this, underlying statistics of each country for calculation of indicators is often inconsistent with each other. In this case, it is more practical and useful to coordinate underlying statistics and start comparison to other countries under similar social and economic conditions.

Relevance

It is sometimes seen that voluminous statistical yearbooks and accounts have been filled with obsolete data and that they cannot be utilized efficiently due to missing links to other data due to lack of hierarchy in the data structure. In other words, some of the data, especially absolute figures, may not 'speak' themselves.

For example, although the absolute number of contributors to a social security scheme is basic and indispensable information, it is not sufficient to have an idea of the coverage of social security schemes. The situation of coverage is more clearly understood when it is related with number of employees (including self-employed persons) in general or the number of those who should be covered according to the legislation: the former gives the idea of the coverage rate in a wider sense (i.e. the coverage rate compared to the maximum potential number of coverage, probably beyond the scope of the legislation) and the latter gives an idea of the coverage in a narrow sense (i.e. the coverage rate compared to the legal potential number of coverage without changing the present legislation on coverage). Another example is the number of old-age pensioners. To understand the financial aspect of the scheme, it is necessary to compare the number of these pensioners with the number of contributors, which gives the demographic ratio.

In short, indicators are supposed to give concise and summarised information which contributes to better understanding of the situation of social security.

Quantifiability

It goes without saying that indicators should be expressed in numbers. Since not every aspect of social security is quantifiable, it should be well noted that indicators are not the almighty; they have limitations in themselves. Adding to this theoretical limitation of indicators, data deficiencies, sometimes caused by lack of financial resources for underlying data collections, lead to non-theoretical but real difficulties in the aspect of 'quantifiability' since much of the underlying data are often unavailable. Bearing these difficulties in mind, the ground design of indicators at the planning stage should be made with as wide scope as possible, to ensure the above-mentioned comprehensiveness and the incessant effort should be made to improve underlying statistics. Good data are foundation of establishing performance indicators, but this is not a one-way process: performance indicators may also encourage improving underlying statistics as a by-product.

Adding to the above-mentioned characteristics, feasibility is an important feature that should be taken into consideration when indicators are applied in a real world. In this paper, the first step is to define the set as wide as possible and some core indicators are selected afterwards, taking into account the criticalness and also the feasibility.

2.1.3 Dimensions of social security

In order to plan a set of social security indicators, it is dispensable first to clearly understand

the objective of social security and to find out and analyse key elements of social security in an organized way. As social security is a multidimensional and complex system, determining a set of indicators itself is one way of interpretation of this complex object.

According to the ILO publication titled 'Introduction to Social Security', the definition of social security is:

'the protection which society provides for its members, through a series of public measures, against the economic and social distresses that otherwise would be caused by the stoppage or substantial reduction of earnings resulting from sickness, maternity employment injury, unemployment, invalidity, old age and death: the provision of medical care, and the provision of subsidies for families with children.'

The question is to define crucial aspects of social security for achieving the objectives. Social security functions well, provided:

(1) the legal framework is well established in line with sound social security principles (e.g. wide coverage, appropriate benefit level);
(2) the governance or management of the scheme is performed efficiently in line with the legal framework (e.g. efficient contribution collection, benefit disbursement, contained administration cost); and
(3) sound financing of the scheme guarantees its sustained operation (e.g. affordable level in the national economy, appropriate contribution level, efficient investment).

Therefore, although it is impossible to classify completely all aspects of social security into these three categories because of overlapping nature of these categories, the indicators are firstly classified into these three broad categories for analysis of functional aspects of social security, i.e. legal indicators, governance indicators and financial indicators. As some of the nature of these three categories overlap each other and interact with each other (e.g. the benefit level and the administration cost has also some implications on financing.), it should be well noted this classification into three categories are not definitive and rough. Still, this classification gives rough but global picture of how social security is functioning. Indicators are developed in these three umbrella categories.

The word ‘performance’ may lead to misunderstanding that every indicator can be used like scores in examinations: i.e. one can simply judge the performance of the scheme by looking the number of the indicator. Some allow this kind of interpretation; a social security scheme performs better as the coverage rate is high. However, the demographic ratio, one of the important indicators to tell the status of aging of the scheme, tells nothing about the scheme is performing well or badly: it shows the status of aging objectively. The same applies to funding ratio: it cannot be said in general the high funding ratio is better or worse. Many financial indicators (e.g. the demographic ratio, the pay-as-you-go cost rate) fall in this type: they provide key information of where the scheme stands and are important because they provide information to understand the situation of the scheme in a clear and organized way. In addition, it is necessary to pay attention in interpretation of even those

indicators which may seem easy to understand. For instance, the replacement rate tends to be interpreted 'The higher, the better'. It goes without saying that a minimum level should be attained (cf. ILO convention No. 102). However, overly generous benefits which are incompatible of net income of working generations may lead to inter-generational conflicts and also have negative repercussions on financing of the scheme. One should be too careful in interpreting what each indicator means and what kind of relations indicators have with each other.

2.2 The social security performance indicator set

According to the above-mentioned three broad categories, key elements of each category are investigated and a set of indicators are developed. Each indicator developed with detailed explanations, including technical details (e.g. calculation method), is listed in the Annex. The underlying ideas are explained in this section.

2.2.1 Legal indicators

With regard to legal and fundamental system issues on social security, the ILO conventions and recommendations on social security (e.g. Convention No. 102 (Convention concerning minimum standards of social security) is used as a standard reference of key design features of social security (e.g. coverage, the replacement ratio, the indexation of benefits). The legal indicators are first classified into indicators concerning contributions and benefits. Coverage is the most important concept for contribution and the benefit level is the most important concept for benefits. Therefore, three indicators are selected as core indicators among all legal indicators, i.e.

- Legislative coverage rate for insured persons (L-1-1)
- Relative average replacement ratio of benefits in payment (L-4-1)and
- Effective rate of adjustment of benefits in payment (L-5)

2.2.1.1 Contribution indicators

With respect to indicators concerning contributions, coverage, not only in the number of persons but also in the wage, is the main feature to be assessed.

2.2.1.1.1 Coverage

Coverage is very important and low coverage is often emerges one of serious obstacles in social security. Besides, this is a very complex issue because the definition of the term 'coverage' is often ambiguous in many cases and differently used in each case. There are various and complicated causes of low coverage. It is often very difficult to obtain good statistics which enable an analysis of this matter. Therefore, it is intended in this study that the coverage is analyzed in several different hierarchies in an organized way so that each indicator of coverage corresponding to each different hierarchy explains different reasons for coverage problems.

First, the concept of coverage is roughly classified into two hierarchies, i.e. the legal (or

system) aspect and the governance (or administrative) aspect. As it is intended that the legal indicators examine the framework of the scheme, the 'legislative coverage' is measured here. It intends to measure the estimated 'legal target population', who should be covered under the present legislation compared with the labour force, who are ideally covered (See the indicator *(L-1-1) legislative coverage rate for insured persons*.). This indicator signifies how universally the legislation is structured and has little to do with actual coverage figures. The actual coverage compared with the legal target, which tells much about the management of the scheme in coverage, is treated in the governance indicators of coverage (See the indicators *(G-1-1) registration ratio among insurable persons* and *(G-2-1) effective contributory ratio among insurable persons*.). The legal coverage should be examined as the total number of insured persons of the same benefit branch (i.e. old-age pensions, unemployment benefits) divided by the total labour force, provided there are some different schemes in a country.

In addition, the coverage can be measured not only in terms of persons but also in terms of the number of employers (See the indicator *(L-1-2) legislative coverage rate for employers*.). It goes without saying that the coverage in terms of persons is much more important than that in terms of employers, and the coverage rate in terms of employers might give a skewed view of coverage without care because each employer is different in size. Nevertheless, the number in terms of employers provides some information, especially from the point of view of administration of employers, who are often direct counterparts in collecting contributions.

The catchment of insurable earnings (or contribution base) compared with total salary should be measured in terms of measuring how much percentages of income is targeted in a social security scheme. Therefore, the catchment ratio of salaries in the global economy or the upper and lower ceilings of insurable earnings, which are usually stipulated in the legislation, should be investigated in relation to the average individual salary calculated before setting ceilings (See the indicators *(L-2-1) relative level of limits on contributory earnings; indicator No.1*, *(L-2-2) relative level of limits on contributory earnings; indicator No.2* and *(L-2-3) catchment of wages*.).

In the category of the coverage concerning the legal indicators, the *legislative coverage rate for insured persons (L-1-1)* is selected as one of core indicators. Although it is very difficult to obtain the number of legally target population (almost always only obtained by estimate), this indicator tells the extent of the possible potential coverage of the labour force by achieving full coverage stipulated in the legislation.

2.2.1.1.2 Others

The average age of insured persons is treated to have an indication of the demography of the scheme (See the indicator *(L-3) age structure of insured persons*.).

2.2.1.2 Benefit indicators

The main indicators concerning benefits are those which clarify the level of benefits, compared to the level of wages of working generations.

2.2.1.2.1 Benefit level

The present benefit level, or more specifically, the average replacement ratio in the case of cash benefits such as pensions should be examined in relation to the average insurable earnings or wages, according to each type of benefit (e.g. sickness, unemployment, old-age, employment injury, family, maternity, invalidity, survivors) (See the indicator *(L-4-1) relative average replacement ratio of benefits in payment*.). Although this indicator is influenced by some non-legal factors (e.g. history of the scheme, the past contributing period of individual insured persons) and also has something to do with financing, this is classified as a legal indicator because this indicator reflects, most of all, the scheme design in the long run.

Both the average replacement ratio of all beneficiaries of the same benefit type (e.g. old-age pensioners) and the average replacement ratio of newly awarded benefits should be investigated in order to assess not only the total average but also to judge the level of newly awarded benefits, since the mixed average of all benefits in the long history of the scheme sometimes does not tell much about effectiveness of benefits awarded recently (See the indicator *(L-4-2) relative average replacement ratio of benefits for newly awarded benefits*.). The average contributing period for old-age benefits is also investigated as one of the determining factors of the level of benefits (See the indicator *(L-4-3) average contribution period*.).

Besides the present level of the benefit, it is important to see how the real value of benefits is maintained in the past by indexation, especially of long-term benefits such as pensions, because deteriorations in real terms of economy, e.g. real purchasing powers, are often problems for many schemes of social security. Therefore, indicators concerning indexation are also established (See the indicator *(L-5) effective rate of adjustment of benefits in payment*.).

2.2.1.2.2 Others

The average age of pensioners is treated to have an indication of the demography of the scheme (See the indicator *(L-6) age structure of beneficiaries*.).

It is also intended to measure the implicit coverage for beneficiaries. This is of course difficult in formulating a concept (e.g. who could be the target beneficiary?) and in calculating (What statistics are available?). In addition, in-depth analysis for further investigation of cause is almost impossible (There are several reasons why some persons cannot get benefits: they might not be legally covered, they might not satisfy qualifying conditions, and it is almost impossible to count the number of those who are not provided benefits for each specific reason). However, the number of beneficiaries can be compared with a 'broad' target, so that one can have a rough idea of the extent of satisfaction of potential needs by social security. For example, this target efficiency of unemployment benefit is obtained by comparing the number of those provided with unemployment benefits to the number of unemployed persons (See the indicator *(L-7) target efficiency of unemployment benefits.*).

2.2.2 Governance indicators

In order to plan a set of indicators of the management of management of social security schemes, or more broadly speaking, of governance, the first step is to find out key elements of the administration of the scheme. The management objectives are to register as extensively as possible employers and employees who should be covered according to the legislation, to collect required contributions from them and to provide benefits without mistakes and on time. The record-keeping is critical to back up these operations[6]. The cost for administration should be minimized so long as the necessary scheme activities are properly carried out.

Necessary tasks are classified into registration, contribution collection and benefit payments. In addition to these three categories, indicators concerning the administrative cost are also provided.

The core governance indicators are selected as follows:

- Registration ratio among insurable persons (G-1-1)
- Effective contributory ratio among insurable persons (G-2-1)
- Percentage of contributions in arrears during the year (G-4-1-1)
- Speed of collection of contributions during the year (G-4-2-1)
- Average claim-handling time for newly awarded benefits (G-7) and
- Relative level of administrative cost (G-10)

2.2.2.1 Registration

In order to measure the effectiveness of the vaguely defined term ‘coverage’, aspects of registration and contribution collection are separated. Registration of employers and employees is the first thing to be carried out in order to define the target of contribution collections. It is the first thing for a scheme to identify those who should be covered according to the legislation and to

[6]See ‘Overview of Social Security and Taxation Systems Interactions’ (1996, S. Ross) in Symposium on Interactions of Social Security and Taxation Systems.

register as many of those employers and employees as possible. In parallel with the legal coverage mentioned before, the registration of both employers and employees are treated here. The percentage of registered persons compared with the legal target is used as an indicator of registration (see the indicators *(G-1-1) registration ratio among insurable persons* and *(G-1-2) registration ratio among liable employers*.)[7].

2.2.2.2 Contribution collection

The percentage of actually contributing persons, compared with the number of insured persons or with the legal target population, can be used as an indicator which measures actual contributions compared with potentials (See the indicator *(G-2-1) effective contributory ratio among insurable persons*.). This indicator is usually considered as a 'coverage' rate and it is one of the most important indicators with respect to coverage. The same type of indicator for the number of employers is also established (See the indicator *(G-2-2) effective contributory ratio among liable employers*.).

In order to see more detailed operations of contribution collection from the point of view of punctuality and efficiency, several indicators are established. Some indicators concern about the volume of contributions in arrears (See the indicators *(G-4-1-1) percentage of contributions in arrears during the year* and *(G-4-1-2) relative level of accumulated contributions in arrears*.) and some concern the speed of contribution collection (See the indicators *(G-4-2-1) speed of collection of contributions during the year* and *(G-4-2-2) speed of collection of contributions in arrears*.).

In addition to the indicators which show the state of contribution collections, indicators on inspections and record keeping are added so as to judge key backup activities of contribution collection (See *(G-3-1) percentage of employers inspected, (G-3-2) percentage of successful inspections* and *(G-5) record keeping ratio on contribution collection*.).

2.2.2.3 Benefit payment

It is important that administration of benefit disbursement is efficient so as to guarantee benefit payment on time, which as a result leads to enhancing reliability of social security. In order to have an idea of whether benefit are paid on time without errors, outstanding benefits, claim handling time and error rate for benefit payments should be investigated (See the indicators *(G-6) percentage of outstanding benefits, (G-7) average claim-handling time for newly awarded benefits, and (G-8) error rate on benefit payments.*).

[7]It should be well noted that the number of registered persons might be unreliable due to improper record maintenance (e.g. not eliminating those dead or those who has become pensioners) and that this indicator might give an illusion that the registration has no problem, which is contrary to reality.

2.2.2.4 Administrative expenditure

As administration of social security consists of, roughly speaking, contribution collection and benefit payment, it is adequate to relate administrative cost to the amount of contributions (or insurable earnings) or the amount of benefits paid to beneficiaries. The administrative cost divided by total insurable earnings (i.e. the pay-as-you-go cost rate for the administration) gives an indication of the magnitude of the administrative cost related to the contribution rate (See the indicator *(G-10) relative level of administrative cost*.). It can be said that this indicator has also an aspect of a financial indicator. In order to understand better the structure of administrative expenditure, the percentage of personnel cost, which is often the most relevant in the administrative expenditure, is also developed (See the indicator *(G-11) ratio of personnel cost to administrative cost*.). In addition, so as to see how much effect the demographic factor and the average salary factor have in the personnel cost, by taking into account the fact that the personnel cost is decomposed into the number of the staff multiplied by the average salary of the staff, staffing level and relative level of staff salary are investigated (See the indicators *(G-12) staffing level relative to insured persons and beneficiaries* and *(G-13) relative staff salary level*.).

2.2.3 Financial indicators

Financing of social security is interpreted in several dimensions. After the financial flow of social security is interpreted in the global economy, the actuarial aspect (i.e. contribution rate and pay-as-you-go cost rate) are analyzed and the investment of aspects of social security are treated. The core financial indicators are:

- GDP ratio of expenditure and income (F-1)
- Pay-as-you-go contribution rate (with and without government subsidies) (F-3)
- Funding ratio (F-5)
- Dependency ratio (F-6)
- Average annual rate of return on investment (F-7)
- Liquidity of assets (F-8) and
- Percentage of public assets (F-9).

2.2.3.1 Finance in global economy

Financing of social security is interpreted in several dimensions. First of all, the finance of social security is interpreted in a global context of economy. More specifically, fundamental financial flow of social security (e.g. total income and expenditure) is analyzed in terms of Gross Domestic Product (i.e. GDP) to understand the volume and impact of social security in the national economy (See the indicator *(F-1) GDP ratio of expenditure and income.*).

2.2.3.2 Actuarial aspects

Intrinsic nature of financing social security is studied in more detail. An indicator is developed to see balance between income and expenditure of a social security scheme (See the

indicator *(F-2) liquidity ratio*.). The pay-as-you-go cost rate is a simple but good indicator to see the present level of actual cost in terms of total insurable earnings. The pay-as-you-go cost rate is investigated, not only by taking into account of the national subsidies actually provided to the scheme and but also by not counting on these subsidies in order to see the potential level of cost without the subsidies (See the indicator *(F-3) pay-as-you-go contribution rate (with and without government subsidies)*.). The pay-as-you-go cost rate is compared with the present contribution (See the indicator *(F-4) relative level of contribution rate.*) and further investigated by expressing as a product of the demographic ratio (demographic effect to the cost) and the replacement ratio (effect of benefit level to the cost) (See the indicators *(F-6) dependency ratio* and *(L-4-1) relative average replacement ratio of benefits in payment*[8].).

2.2.3.3 Investment

For social security schemes with reserves (e.g. schemes of the long-term benefit branch, such as pension schemes), indicators of funding and investment should be developed. In order to see the volume of reserves in relation to the volume of expenditures, the funding ratio, obtained by dividing the amount of reserves by total amount of expenditure, is a fundamental indicator (See the indicator *(F-5) funding ratio*.). Efficiency of investment is measured by looking at the average annual rate of return on investment (See the indicator *(F-7) average annual rate of return on investment*.). In addition to these fundamental indicators on reserves and investment, some indicators concerning the portfolio of investment, are also prepared. One shows the liquidity of assets, which is necessary when the scheme should use some of the reserves for paying benefits (See the indicator *(F-8) liquidity of assets.*).

2.3 Core indicators

Based on the above-mentioned discussions, the core indicators are selected as follows.

Legal indicators

(L-1-1) Legislative coverage rate for insured persons
(L-4-1) Relative average replacement ratio of benefits in payment
(L-5) Effective rate of adjustment of benefits in payment

Governance indicators

(G-1-1) Registration ratio among insurable persons
(G-2-1) Effective contributory ratio among insurable persons
(G-4-1-1) Percentage of contributions in arrears during the year
(G-4-2-1) Speed of collection of contributions during the year

[8]The replacement ratio is categorized as a legal indicator. However, this indicator is also considered as an essential financial indicator.

(G-7) Average claim-handling time for newly awarded benefits
(G-10) Relative level of administrative cost

Financial indicators

(F-1) GDP ratio of expenditure and income
(F-3) Pay-as-you-go contribution rate (with and without government subsidies)
(F-5) Funding ratio
(F-6) Dependency ratio
(F-7) Average annual rate of return on investment
(F-8) Liquidity of assets
(F-9) Percentage of public assets

The core legal indicators show the most essential aspects of the social security system. The rate of potential maximum coverage by legislation among the economically active population is measured by (L-1-1). Two most important aspects of the level of benefits, i.e. the average replacement ratio and the indexation of benefits are grasped through (L-4-1) and (L-5).

With respect to the governance of the scheme, effectiveness of registration is measured by (G-1-1). Management on the contributory side (percentage of actually contributing persons, percentage of contributions in arrears and speed of contribution collection) are understood by (G-2-1), (G-4-1-1) and (G-4-1-2). Efficiency of benefit disbursement is assessed in (G-7). Performance of administration from the point of view of the cost is evaluated in (G-10).

The finance of the social security scheme, on the 'flow' side, is, first of all, globally comprehended in the national economy by (F-1). The overall cost level of contributory schemes is seized by (F-3) and the demographic part for the cost is analyzed by (G-7). On the 'stock' side, the level of reserves of the scheme is evaluated by (G-5). The portfolio of the assets should be constructed so as to satisfy the conditions of liquidity, safety and return, each of which sometimes conflicts with each other. These are examined in (F-7), (F-8) and (F-9).

These core indicators should be considered as the minimum and essential set to globally comprehend the social security system and thus they should be maintained in time series, periodically reported to policy-making bodies such as the congress and the steering committee as basic and concise information. It goes without saying that necessary statistics should be kept consistently.

3. Conclusions

Without having a set of basic indicators, there is a high risk of neglecting basic and essential information. For example, those working in a social security organization might not care about coverage so long as income of the scheme is sufficient to cover the present cost for benefits. However, from the point of view of enhancing welfare for nationals, coverage is one of the most important issues and indicators concerning coverage should be established.

Another example is the finance of the scheme, especially in the long term. Since the total cost of social security is financed from the national economy, the GDP ratio of the cost is fundamental information for decision makings of the national level. Furthermore, as the consensus of stake holders are necessary for social security reform and as it takes time to reach consensus mainly because beneficiaries should adjust the life plan supported by social security, it is fundamental to have an idea of long-term development of the cost, which is expressed clearly in the pay-as-you-go cost rate.

Hence, the core indicators were selected to satisfy minimum and definite requirements to know in a concrete and real term the situation of social security. They can be modified to the specific situation of the country, but the concept of each indicator should be maintained.

Data deficiencies are problematic in constructing indicators. Governance and data situation of the scheme are closely related with each other. On one hand, data deficiencies makes finding of diagnostics difficult and lead to negligence of reality and eventually to worse governance. On the other hand, bad governance leads to worse quality of data. This vicious circle prevents social security schemes from enhancing governance of the scheme. In spite of this challenge, efforts of establishing indicators should be initiated soonest before stakeholders of social security lose confidence in social security owing to lack of governance. The process of establishing data itself is considered as a process of governance. Understanding of the scheme becomes more profound only by going through this long and difficult process, accompanied with discussions of indicators and with feedbacks from discussions.

Data problems also occur because of insufficient cooperation among different organizations with different kind of data. Persons in charge of data in social security organizations do not sometimes have good ideas of data on national economy (e.g. labour statistics, GDP etc.) or shows little interest in such data. Nor can they relate data of social security to data on national economy. This holds true also for economists or statisticians working in organizations or institutes of economy. Indicators help those people get together for better understanding of both economy and social security.

Although it should be well noted that indicators have limitations in themselves (e.g. there are surely unquantifiable aspects in social security.), indicators could greatly contribute to decision-making and improving governance if they are maintained long in a time series and if they are prepared in many countries so that they could be internationally comparative.

Annex 1a Standard indicators (full set)

L-1-1 Legal coverage rate (of the scheme) for insured persons

The legal coverage rate is obtained by dividing the number of legally covered persons (i.e. those who should be covered under the present legislation) by the number of labour force in the age bracket of coverage stipulated in the legislation.

The rate shows what percentage of the labour force should in principle be covered according to the legislation.

The legally covered persons are those who should be covered by the scheme according to the legislation, the number of which may only be estimated. For example, if the scheme is targeting all employees between the age of 15 and 60, the national labour statistics on employment might be used for this estimation. Whatever the case may be, please indicate the exact definition of the legally covered persons, the method and the data used for estimation.

The rates should be calculated by gender (males/females) and by scheme if there is more than one. If there are several schemes which provide the same kind of benefits (e.g. several pension schemes) in a country, the table showing the consolidated number of the insurable persons is essential for understanding the legal coverage at the national level.

Example
Number of labour force between 20 and 60: 1,000,000 persons
Legally coverd persons (Public employees only): 200,000 persons
Legal coverage rate = 200,000 / 1,000,000 = 20%

L-1-2 Legal coverage rate (of the scheme) for employers

This is similar to (L-1-1) but measures the coverage in term of the number of employers. The labour statistics on the number of employers will be used to collect this information. 'Employers' would normally mean 'establishments' (excluding self-employed persons). It should be noted that the definition used in the records of the scheme and that used for labour statistics corresponds with each other.

Example
Number of employers: 100,000
Legally covered employers (Employers with more than 100 employees): 10,000
Legal coverage rate = 10,000 / 100,000 = 10%

L-2-1 Relative level of limits on insurable earnings; indicator No.1

These are obtained by dividing the maximum and/or minimum limits applicable to insurable earnings defined in the legislation by the average insurable earnings per month (or day or year) of full contributors. The average insurable earnings of a full contributor is defined by dividing the total amount of insurable earnings (or total contributions collected from insured persons divided by the contribution rate) by the total number of weeks of contribution payments times 52.

These rates show the adequateness of limits on contributory earnings compared to the average insurable earnings of full contributors.

Data should be collected by gender (males/females) and by social insurance scheme.

Example
Contribution collected: 100,000,000 Unit
Contribution rate: 10%
Total amount of insurable earnings = 1,000,000 / 10% = 1,000,000,000 Unit
Total number of weeks of contribution payments: 104,000,000 weeks
Number of full contributors: 104,000,000 / 52 = 2,000,000 persons
Average insurable earnings of a full contributor: 1,000,000,000 Unit / 2,000,000 = 500 Unit
Minimum ceiling: 50 Unit
Maximum ceiling: 4,000 Unit
Relative level of maximum limit = 4,000 / 500 = 800%
Relative level of minimum limit = 50 / 500 = 10%

L-2-2 Relative level of limits on insurable earnings; indicator No.2

This is another indicator to measures the adequateness of limits on insurable earnings through the estimation of the percentage of insured persons who have earnings below the minimum and above the maximum limit of insurable earnings.

Data should be collected by gender (males/females) and by social insurance scheme in a month when the wage pattern in normal (e.g. without bonus payments etc.).

Example
Total number of insured persons: 1,000,000 persons
Number of insured persons below the minimum limit: 50,000 persons
Number of insured persons above the maximum limit: 10,000 persons
Relative level of the minimum limit = 50,000 / 1,000,000 = 5%
Relative level of the maximum limit = 10,000 / 1,000,000 = 1%

L-2-3 Catchment ratio of insurable earnings in the total earnings

This is the ratio of the amount of insurable earnings (with maximum and minimum limits) over the amount of total earnings (including earnings above the maximum and the below the minimum). Although this is the most direct and hence important indicator among the three indicators for measuring the effect of the insurable ceilings, the data necessary for calculation might be difficult to collect.

Data should be collected by gender (males/females) and by social insurance scheme.

Example
Total amount of insurable earnings: 75,000,000 Units
Total amount of earnings (before setting ceilings): 100,000,000 Units
Catchment ratio = 75,000,000 Units / 100,000,000 Units = 75%

L-3 Average age of insured persons

The data on the average age of total insured persons and of those newly joining the scheme should be collected by gender (males/females) and by social insurance scheme. The insured persons in a given year are determined as those who contributed at least once (month/week/day) in a year.

The average age of the insured persons shows the aging of the demographic structure. Therefore, the long-term trend is important to see this indicator. The more important indicator is the average age for those newly joining the scheme, which leads to shorter contribution period in the younger ages.

Example
Average age for insured persons: 42 years old
Average age for those newly joining the scheme: 23 years old

L-4-1 Relative average replacement ratio of benefits in payment

The average replacement ratio of benefits in payment is obtained by dividing the average annual individual benefit in payment by the average annual individual insurable earnings per month (or day or year) of a full contributor.

The rates should be calculated for each category of benefits (e.g. old-age, invalidity, survivors, unemployment, sickness, employment injury, etc.) by gender (males/females) and by social insurance scheme. Figures for survivors should be possibly be broken down into widows, orphans and parents.

This indicator is a benchmark for judging the level of benefits. As invalidity and survivors pensions include various different forms of benefits (first endowment at younger/older age, different benefit rates for different invalidity, survivors' categories), it might be difficult to judge the level for those benefits. This indicator mainly concerns about old-age benefits.

Example
Average benefits: 60 units
Average insurable earnings for a full contributor: 100 units
Relative average replacement ratio = 60 /100 = 60%

L-4-2 Relative average replacement ratio of benefits for newly awarded benefits

This indicator corresponds to L-4-1 but the average annual individual benefit only refers to newly awarded benefits during the year. This is normally higher than the replacement ratio obtained in L-4-1 because of deterioration in benefits in payments due to partial indexation of benefits or because of longer credit periods for newly awarded pensioners.

This is another important indicator for the level of benefits.

The rates should be calculated for each category of benefits (e.g. old-age, invalidity, survivors, unemployment, sickness, employment injury, etc.) by gender (males/females) and by social insurance scheme.

Example
Average benefits for newly awarded benefits: 70 units
Average insurable earnings for a full contributor: 100 units
Relative average replacement ratio = 70 /100 = 70%

L-4-3 Average past (contribution/service) period

The data on the average number of accumulated years of (contribution/service) credit per benefit in payment and per newly awarded benefit during the year should be collected separately.

For old-age pensions, the length of period is closely related to the replacement ratio and therefore one important factor to explain the replacement ratio.

As the data should be collected for each category of benefits (e.g. old-age, invalidity, survivors, unemployment, sickness, employment injury, etc.) by gender (males/females) and by social insurance scheme, it should be noted that data for old age are the most essential.

Example (for old-age benefits)
Average past contribution period per beneficiary: 20 years
Average past service period per beneficiary (sickness leave could be counted.): 22 years
Average past contribution period per newly awarded beneficiary (longer than that for present beneficiary): 24 years
Average past service period per beneficiary (sickness leave could be counted, longer than that for present beneficiary): 27 years

L-5 Effective rate of adjustment of benefits in payments

The effective rate of adjustment of benefits in payments is calculated as the difference between the annual rate of increase in wages or in consumer prices and the average percentage of adjustment in the value of benefits in payment.

This indicates whether the benefits maintain their value against inflation or improvement of wages of working generations.

The consumer price index should refer to the expenditure pattern of beneficiaries, if possible. The same refers to the wages of insured persons, if the amount of wage increase depends on the level of wages.

If the adjustment of benefits is carried out by adding a flat amount to each benefit, the indexation would be calculated as the percentage increase of the benefit before and after adjustment.

The rates should be calculated for each category of benefits (e.g. old-age, invalidity, survivors, unemployment, sickness, employment injury, etc.) by social insurance scheme, if indexation varies for different benefits and/or different schemes.

Example
Average percentage of adjustment in pensions: 5%
CPI increase: 3%
Wage increase: 7%
Effective rate of adjustment against inflation = 5% - 3% = 2%
Effective rate of adjustment against wage = 5% - 7% = - 2%

L-6 Average age and life expectancy of beneficiaries

Data should be collected on the average age of all beneficiaries. Also, that of the newly awarded beneficiaries should be provided. The average life expectancy at the average age of newly awarded beneficiaries should be provided from past and present life tables. The normal retirement age is as specified in the legislation (i.e. age at which a person who meets requirements for the number of years of contribution is entitled to a full pension).

This indicator shows the demographic structure of beneficiaries. The age structure of new beneficiaries suggests the pensionable age in practice. In addition, life expectancy of newly awarded old-age pensioners indicates also financial effects due to longevity.

The data should be collected for each category of benefits (e.g. old-age, invalidity, survivors, unemployment, sickness, employment injury, etc.) by gender (males/females) and by social insurance scheme. Data for old-age benefits are particular important. The data on the normal retirement age should be collected only for old-age benefits.

Example
Average age of old-age beneficiaries: 67 years old
Average age of newly awarded old-age pensioners: 58 years old
Average life expectancy at the average age of newly awarded old-age pensioners (at the age 58): 19 years
Normal retirement age: 60 years old

L-7 Target efficiency of unemployment benefits

The target efficiency of unemployment benefits is calculated as the number of beneficiaries of unemployment benefits to the estimated number of demands for benefits, i.e. number of unemployed persons. This indicates what percentage of demands for unemployment benefits are satisfied by social security.

This ratio should be computed by gender (males/females) and by social insurance scheme. If there are several schemes for the same kind of benefits, the consolidated tables should serve to aggregate the information at the national level.

Example
Number of unemployed persons: 100,000
Number of beneficiaries of unemployment benefits: 30,000
Target efficiency = 30,000 / 100,000 = 30%

G-1-1 Registration rate of the legally covered persons

The indicator is the number of registered insured persons divided by the number of legally covered persons. This indicator serves to show the effectiveness of the registration process under the social insurance scheme. Please refer to the indicator (L-1-1) for the data corresponding to the legally covered persons.

This ratio should be computed by gender (males/females) and by social insurance scheme. If there are several schemes for the same kind of benefits, the consolidated tables should serve to aggregate the information at the national level.

Example
Number of registered insured persons: 5,000,000
Number of legally covered persons 10,000,000
Registration rate of the legally covered persons: 5,000,000 / 10,000,000 = 50%

G-1-2 Registration rate of liable employers

This corresponds to (G-1-1). The number of the legally covered employers can usually be estimated based on labour or industrial statistics providing information on the number of employers that should be covered by social security legislation.

The data should be collected separately by social insurance scheme. If there are several schemes for the same kind of benefits, the consolidated tables should serve to aggregate the information at the national level.

Example
Number of registered employers: 40,000
Number of legally covered employers: 100,000
Registration rate of the legally covered employers: 40,000 / 100,000 = 40%

G-2-1 Effective contributory rate of insured persons

This indicator shows the effectiveness of the actual contribution collection process of the scheme. The percentage is calculated by dividing either the number of insured persons actually contributing at least once a year (i.e. active insured persons) or the adjusted number of insured persons (full contributors) by the number of the legally covered persons (excluding persons who do not need to pay contributions such as unemployed persons if they are legally insured and do not pay contributions under the scheme.). For the definition of the insurable persons, please see (L-1-1). The adjusted number of insured persons is obtained by dividing either the total contributing months by 12 or the number of total contributing weeks by 52.

The difference between G-1-1 and G-1-2 shows the rate of insured persons only registered but not really paying contributions.

This rate should be computed by gender (males/females) and by social insurance scheme. If there are several schemes for the same kind of benefits, the consolidated tables should serve to aggregate the information at the national level.

Example
Number of insured persons actually contributing at least once a year (active insured persons): 3,000,000
Number of total contributing months: 24,000,000
Number of adjusted contributors (full contributors): 24,000,000 / 12 = 2,000,000
Number of legally covered persons: 10,000,000
Effective contributory rate of insured persons (1): 3,000,000 / 10, 000,000 = 30%
Effective contributory rate of insured persons (2): 2,000,000 / 10, 000,000 = 20%

G-2-2 Effective contributory rate of legally covered employers

The definition of this indicator is similar to (G-2-1) except for the fact that this measures the effective contributory ratio of not insured persons but of employers.

Example
Number of employers actually contributing at least once a year (active insured employers): 30,000
Number of total contributing months: 240,000
Number of adjusted contributing employers (full contributing employers): 240,000 / 12 = 20,000
Number of legally covered employers: 100,000
Effective contributory rate of employers (1): 30,000 / 100,000 = 30%
Effective contributory rate of employers (2): 20,000 / 100,000 = 20%

G-3-1 Proportion of employers inspected

This shows the frequency of inspection of employers by the scheme. The percentage is obtained by dividing the number of the employers inspected by the number of the legally covered employers.

The data should be collected separately by social insurance scheme.

Example
Number of legally covered employers: 100,000
Number of employers inspected: 2,000
Proportion of employers inspected: 2,000 / 100,000 = 2%

G-3-2 Ratio of successful inspections

The ratio is computed by dividing the number of successful inspections by the number of employees inspected. The successful cases are defined as those which result in all necessary information being obtained to establish whether liability is being met or not.

The data should be collected separately by social insurance scheme.

Example
Number of employees inspected: 2,000
Number of successful inspections: 1,000
Ratio of successful inspections: 1,000 / 2,000 = 50%

G-4-1-1 Proportion of contributions in arrears during the year

This shows effectiveness of contribution collection. The percentage is calculated by dividing the amount of contributions in arrears newly accumulated during the year by the amount of contributions due during the year. It should be noted that the arrears carried from the previous year (i.e. the accumulated amount in arrears) are not counted here.

The amount which has become impossible to collect (e.g. by the bankruptcy of the company) should be written off.

The data should be collected separately by social insurance scheme.

Example
Total amount of contributions in arrears newly accumulated during the year: 20,000,000 unit
Total amount of contributions due during the year: 100,000,000 unit
Percentage of contributions in arrears during the year: 20,000,000 / 100,000,000 = 20%

G-4-1-2 Relative level of accumulated contributions in arrears

This indicator intends to measure historical efficiency and effectiveness of contribution collection by comparing the accumulated contributions in arrears with the contributions due during the year. The percentage is calculated by dividing the accumulated amount of contributions in arrears by the amount of contributions due during the year. It is desirable that the amount of the past should be adjusted to the present level (e.g. by the rate of the return on investment) and summed up.

The amount which has become impossible to collect (e.g. by the bankruptcy of the company) should be written off.

The data should be collected separately by social insurance scheme.

Example
Contributions in arrears three or more years ago: Non existent
Contributions in arrears two years ago (the value at that time): 2,000,000 unit
Contributions in arrears one year ago (the value at that time): 3,000,000 unit
Contributions in arrears of the present year: 4,000,000 unit
Nominal interest rate of two years before: 10%
Nominal interest rate of one year before: 5%
Adjusted amount of contributions in arrear of two years before to the value of present:
2,000,000 * (1+0.1) * (1+0.05) = 2,310,000
Adjusted amount of contributions in arrear of one year before to the value of present:
3,000,000 * (1+0.05) = 3,150,000
Amount of contributions in arrear of the present year: 4,000,000
Accumulated contributions in arrears: 2,310,000 + 3,150,000 + 4,000,000 = 9,460,000
Contributions of the present year: 20,000,000 unit
Relative level of accumulated contributions in arrears: 9,460,000 / 20,000,000 = 47.3%

G-4-2-1 Speed of collection of contributions due during the year

This is to measure the efficiency of contribution collection of the scheme. Average days per case spent in collection of contributions due during the year should be measured. The percentage of outstanding cases should be also calculated. The data should be collected separately by social insurance scheme.

G-4-2-2 Speed of collection of contributions in arrears

The collection of the total accumulated amount of contributions in arrears is classified in three ways: by administrative action, by the court, and the remainder (uncollected). The data on average days per case spent in collection (during the year) should be also supplied. The data should be collected separately by social insurance scheme.

G-5-1 Record keeping ratio on contribution collection

The total annual returns of reports to the organization or the institution are classified into incomplete returns, complete returns which have been posted to the record, and complete returns which have not been posted to the record. The ratio is calculated by dividing the complete returns, which have already been posted to the record, by the number of total returns during the year. The data should be collected separately by social insurance scheme.

G-6 Percentage of outstanding benefits

This indicator shows how much percentage of newly awarded benefits are actually paid during the year. The percentage is obtained by dividing the number of outstanding cases by the amount of benefits due (i.e. the total cases due during the year, i.e. outstanding cases plus already paid cases).

The data should be collected for each category of benefits (e.g. old-age, invalidity, survivors, unemployment, sickness, employment injury, etc.) and separately by social insurance scheme.

G-7 Processing time lag for newly awarded benefits

This indicator is used to measure the delivery efficiency in terms of the average lapse of days between the receipt of the claim and the first payment for the benefits awarded and paid during the year. The average time of days are processed separately in two phases; between the receipt of the claim and the

decision of the amount, and between the decision of the amount and the first payment. This indicator might be obtained only by conducting an independent survey.

The data should be collected for each category of benefits (e.g. old-age, invalidity, survivors, unemployment, sickness, employment injury, etc.) and separately by social insurance scheme.

G-8 Error rate on benefit payments

This indicator is obtained by dividing the number of errors in payment by the number of total payments made during the year and shows the technical capacities in payment by the organization. This data should be collected for each category of benefits (e.g. old-age, invalidity, survivors, unemployment, sickness, employment injury, etc.) and separately by social insurance scheme.

G-9 Rate of public enquiries and complaints

The indicator is obtained by dividing the number of public enquiries and/or complaints by the total number of insured persons and beneficiaries.

The data should be collected separately by social insurance scheme.

G-10 Relative level of administrative cost

The level of administrative cost is computed by dividing the total amount of administrative expenditure by the total amount of insurable earnings or by dividing by the total amount of benefit expenditure.

The data should be collected separately by social insurance scheme.

G-11 Ratio of personnel cost to administrative cost

Personnel cost as a percentage of the total administrative expenditure is computed, the details of which are listed in the table.

The data should be collected separately by social insurance scheme.

G-12 Staffing level relative to insured persons and beneficiaries

The staffing level of the social insurance scheme is established by dividing the number of staff in the organization by the number of active insured persons (or the number of contribution weeks divided by 52) or by the number of beneficiaries or by the number of newly awarded beneficiaries.

The data should be collected separately by social insurance scheme.

G-13 Relative staff salary level

This indicator shows the relative average salary level of the staff working for the social insurance scheme compared with the average insurable earnings or with the national average wage to avoid the skew effect of the limits on the insurable earnings.

The average annual staff salary and the average annual insurable earnings are first calculated. The data on the national average wage should be collected from labour statistics, etc.

The salary level is obtained by dividing the average salary of the staff either by the average salary of the insured population or by the national average wage.

The data should be collected separately by social insurance scheme.

F-1 GDP ratio of expenditure and income

The data on expenditure and income of the scheme is contained in the financial/accounting reports. The accounting method (e.g. cash basis or accrual basis) should be clearly mentioned by the social insurance scheme. The income should be classified as specified in the table. The GDP ratio is calculated by dividing income and expenditure by GDP.

This is a basic figure to see the financial impact of social insurance schemes in the national economy.

This ratio should be computed separately by social insurance scheme. If there are several schemes, the consolidated tables at the national level are essential for the purpose of this indicator.

Example
Gross Domestic Product: 100,000,000 units
Total benefits: 10,000,000 units
GDP ratio of expenditure = 10,000,000 / 100,000,000 = 10%

F-2 Liquidity ratio

The liquidity ratio is defined as the quotient of total income (including or excluding the investment income) divided by total expenditure (including administrative expenditure).

This indicator shows the financial situation which changes according as the scheme matures. This rate is much bigger than 1 when the scheme commences and finally become 1 or less than 1 when the scheme matures. This suggests also hints for portfolio selections, paying attention to how much should be liquidated from the reserves to pay the benefits.

The data should be collected separately by social insurance scheme.

Example
Income with investment return: 500 million units
Income without investment return: 400 million units
Expenditure: 450 million units
Liquidity ratio with investment income:
500 / 450 = 111% (the scheme is running without deficits by using investment income.)
Liquidity ratio without investment income:
400 / 450 = 89% (the scheme will be in deficits without investment income.)

F-3 Pay-as-you-go cost rate (with and without government subsidies)

The pay-as-you-go cost rate with government subsidies is calculated by dividing the amount of the total expenditure minus government subsidies scheduled in the legislation by total insurable earnings. The pay-as-you-go contribution rate without government subsidies is obtained simply by dividing the total expenditure by total insurable earnings.

This rate shows that the scheme should levy this rate without investment income. The rate without government subsidies is calculated to simply show the level of burden that should be borne either by contributors or the government.

The data should be collected separately by social insurance scheme.

Example:
Total insurable earnings: 600 million units
Expenditure: 60 million units
Government subsidies: 20 million units
Pay-as-you-go cost rate with government subsidies: (60 - 20) / 600 = 6.7%
Pay-as-you-go cost rate without government subsidies: 60 / 600 = 10%

F-4 Relative level of the legal contribution rate

The relative level of the legal contribution rate compares the level of the actual (legally fixed) contribution rate of the scheme with the pay-as-you-go contribution rate with government subsidies.

This shows the discrepancy between the actual contribution rate and the pay-as-you-go cost rate.

The data should be collected separately by social insurance scheme.

Example
Legally fixed contribution rate: 10%
Pay-as-you-go contribution rate: 5%
Relative level = 10% / 5% = 200%

F-5 Funding ratio

The funding ratio is obtained by dividing the amount of reserves at the end of the previous year by the amount of total expenditure during the year (including the administrative expenditure).

This shows how many years the scheme would financially sustain without any income except for investment income and serves as a good indicator to show the funding level of the scheme.

The data should be collected separately by social insurance scheme.

Example
Amount of reserves at the end of previous year: 500 million units
Amount of total expenditure during the year: 100 million units
Funding ratio = 500 / 100 = 500% or 5 (years)

F-6 Demographic (dependency) ratio

The demographic maturity ratio shows the maturity of the scheme. It is calculated by dividing the total number of (full) beneficiaries by the total number of active insured person (i.e. insured persons who made at least one contribution during the year) or by the number of full contributors (i.e. total contributing month (weeks, days) divided by 12 (52, 365 respectively). The reason for calculating in several ways is to remove the effect of the compliance factor.

The data should be collected separately by social insurance scheme.

Example
Number of beneficiaries: 500,000
Number of insured persons: 2,000,000
Number of active insured persons: 1,500,000
Number of full contributors: 12,000,000
Demographic ratio No.1 = 500,000 /2,000,000 = 25%
Demographic ratio No.2 = 500,000 /1,500,000 = 33%

Demographic ratio No.3 = 500,000 /1,200,000 = 42%

F-7 Average annual effective rate of return on investment

First, the nominal rate of return on investment is calculated by using the formulae prescribed in the table, relying on the data of the amount of total assets at the beginning and at the end of the year and on the amount of total annual investment income. The effective rate of return on investment is calculated approximately in the following three ways:

(nominal rate of return on investment) - (annual average rate of indexation on benefits) or
(nominal rate of return on investment) - (annual average rate of increase in consumer prices) or
(nominal rate of return on investment) - (annual average rate of increase in wages)

This is an indicator to show that the rate of return is reasonable when compared with actual economic fluctuations.

The data should be collected separately by social insurance scheme.

Example
Nominal rate of return on investment: 10%
Average rate of indexation in benefits: 6%
Average rate of increase in CPI: 4%
Wage increase: 7%
Effective rate of return No.1 = 10% - 6% = 4%
Effective rate of return No.2 = 10% - 4% = 6%
Effective rate of return No.3 = 10% -7% = 3%

F-8 Liquidity of assets

The amount of short-term assets is defined as those which could be liquidated within one month whenever necessary. Liquidity of assets is calculated by dividing the short-term assets by the amount of total expenditure during the year.

This should reflect the level of contingency reserves available under the scheme.

The data should be collected separately by social insurance scheme.

F-9 Percentage of government assets

The amount invested in government / parastatal papers or investment vehicles, e.g. treasury bills, government stocks and government bonds, government or institutional facilities, as well as amount invested in parastatals is calculated and divided by the amount of total assets owned by the scheme.

This gives the percentage of assets in the governmental/parastatal sector. This gives another way of understanding the asset-mix of the portfolio.

The data should be collected separately by social insurance scheme.

Example
Treasury bills: 20%
Government stocks: 10%
Government bonds: 20%
Government facilities: 5%

Total percentage = 20% + 10% + 20% + 5% = 55%

Annex 1b Core indicators

Legal indicators

(L-1-1) Legislative coverage rate for insured persons
(L-4-1) Relative average replacement ratio of benefits in payment
(L-5) Effective rate of adjustment of benefits in payment

Governance indicators

(G-1-1) Registration ratio among insurable persons
(G-2-1) Effective contributory ratio among insurable persons
(G-4-1-1) Percentage of contributions in arrears during the year
(G-4-2-1) Speed of collection of contributions during the year
(G-7) Average claim-handling time for newly awarded benefits
(G-10) Relative level of administrative cost

Financial indicators

(F-1) GDP ratio of expenditure and income
(F-3) Pay-as-you-go contribution rate (with and without government subsidies)
(F-5) Funding ratio
(F-6) Dependency ratio
(F-7) Average annual rate of return on investment
(F-8) Liquidity of assets
(F-9) Percentage of public asset