LEGAL DESCRIPTION AND DATA FRAME FOR INDONESIA FINANCE HEALTH CARE PROJECTION (PT. ASKES, INDONESIA)

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ABSTRAK

Tujuan dari penelitian ini adalah untuk menganalisis kinerja dari Program Asuransi Kesehatan di Indonesia yang mengarah kepada efisiensi dan kesinambungan dari perencanaan program, apakah program tersebut telah memenuhi kebutuhan para anggotanya baik yang wajib maupun yang tidak wajib dari para pegawai negeri maupun non pegawai negeri. Mengingat begitu besarnya beban yang harus ditanggung oleh program dalam memenuhi kebutuhan jasa asuransi kesehatan, maka program tersebut harus menyesuaikan antara biaya-biaya yang dikeluarkan oleh program tersebut maupun pendapatan yang berasal dari kontribusi peserta program dan subsidi pemerintah. Dalam tulisan ini digunakan beberapa dokumentasi, literatur-literatur, wawancara, dan buku-buku manual.. Selain itu beberapa standard internasional seperti SNA 1993 (Social National Accounts 1993) dan Model Proyeksi Populasi dari United Nations dan ILO juga digunakan dalam penelitian ini. Hasilnya menunjukkan bahwa metode proyeksi yang digunakan selama 50 tahun kedepan mengindikasikan terjadi peningkatan pada jumlah anggota dan tertanggung yang pada akhirnya berpengaruh pada jumlah permintaan pada jasa asuransi kesehatan. Setelah tahun 1997 yaitu dengan adanya krisis ekonomi di Indonesia yang menyebabkan penurunan GDP, Indonesia telah mengubah cara-cara lama yaitu ekspansi program menjadi penekanan pada kualitas pelayanan, sehingga kesinambungan dan pengaruh biaya-biaya yang dikeluarkan telah menjadi suatu tantangan sekaligus menjadi suatu ancaman, yaitu mengenai kelanjutan dan kesinambungan bagi berjalannya program tersebut secara jangka panjang

Kata kunci: efisiensi, kesinambungan

Indonesia has social health insurance, since 1968. The health scheme was in the status of a certain body, known as BPDK (Badan Penyelenggara Dana Pemeliharaan Kesehatan) under the join control of the Ministry of Health and Ministry of Finance. In 1984: BPDK was converted into a state corporation named Perum Husada Bhakti, and in 1992: Perum Husada Bhakti became a state-owned limited liability company, named PT. (Persero) Asuransi Kesehatan Indonesia or PT. Askes.

The scheme provides a comprehensive health care including preventive, curative, and rehabilitation care, as well as secondary care and hospitalization. The Numbers of clients as December, 2001 are almost 15 millions consists of 14 millions compulsory members and 1 millions voluntary members. According to the legal description which Indonesia government regulation No. 69 Year 1991 are included:

1. Coverage, the scheme covered 12.5% (public servants including dependants) of total population
2. Eligibility persons, Askes managed the system for the government employees, the retires of government employees, the retirees of armed forces, the veterans, Indonesia Independence pioneers and their dependants
3. Benefit packages, the packages are including: primary care services, specialist physician, hospital inpatient care, drugs, dental prostheses, ambulatory, rehabilitation, and ancillary services.
4. Remuneration of providers, trough the Government (Ministry of Health), the service providers are paid for services provided to public employees by fee for service
5. Financed, the public employees pay compulsory contribution, which is responsible for collecting contribution from employees it called by Pay As You Go (PAYG) or assessment premium systems, it is a system of insurance financing under which total expenditure (benefit expenditure plus administrative expenditure) in a given period is met by income (contribution and other sources) from the same period. Pay As You Go financed insurance schemes do not accumulate reserves, except contingency reserves.
6. Contribution rate, the contribution rate is 2% of contributor's salary each month
7. Expenditure and revenue, the importance of research on financial performance shows that the program can be proposed for the future policy. The legal description point out the programs has systems in order to implement the projections.

Based on historical data, the scheme has major problem that is indicated by its performance. Therefore, the research objective would be assessed and analyzed program performance which uses 50 years projections. Based on background and condition, there are some problems that is able to affect on capability and sustainability. Here some problems:

1. How much the contribution rate, which suppose to be in program in order to cover the expenditure
2. How much the benefit expenditure that suppose to be in program
3. How much the PAYG rate that supposes to be in program in order to finance the program.

Health care systems are a prominent focus for political issues in most countries today. The fact pointed out that the availability of services is less than the population in delivering. Nearly all decisions of policy makers about national health systems must be based on the quantitative aspects of the options available, and the impact of any decisions taken. A quantitative description of the current health system through new policy initiatives is also critical to reform. Hence, the ability to quantitatively describe health systems as well as to create a range of what if scenarios based on new directions for those systems is increasingly important in all countries.

Therefore the main objective of health care delivery system is to maintain or improve the health status of the population. Beside that a social or national health care system would also aim to guarantee access to health care for the entire population, regardless of individual ability to pay. Many countries are success to increase and improve these services for their people because of their extent of access to care, but other side many countries are failed to delivery these. In the past two decades, the cost of health care systems has become an increasing concern for government in developed as well as developing countries. The experienced showed that rapid real economic growth often made it possible to increase both the level of access to and quality of care. In order to provide affordable, accessible, and effective health services to those of the population in real need, resources must be targeted at the most cost-effective interventions. This is accomplished primarily through the effective allocation and efficient use of existing resources, through such means as utilization and cost control.

For the health care delivery system to be financially sustainable, sound resource allocation, financial governance, and monitoring of health outcomes are necessary, regardless of whether the system is primary, private, or mixed.

Quantitative tools are needed for sound resource allocation and financial of this system. There are two primary types: 1) descriptive tools and 2) analytical tools. Descriptive tools are standard instrument for sound governance, and consist of financial reporting and controls in the form of accounts and statistical. Analytical tools allow the policy makers to perform status quo mapping, which is used to assess the financial development of existing systems under the assumption that present regulatory or managerial frameworks are maintained. The word of map refers to determination of the level of financial resources to maintain the present level of quality and quantity of care, in other word the analytical tools consist of models, which are mathematical formulation of health care financing systems based on the regulations of government. The model are able to be built by data framework and a legal description, where the most extensive data frameworks are needed for national health budget models such as public expenditure information and public income information. The fact showed us that most of countries especially developing country has inaccurate and lack of data.

As above mentioned that model can be built on quantitative and qualitative information regarding the functioning of the modeling object-the health care financing scheme or system. The information base on the operations of the scheme or system consists of a data framework and a legal description. These data (data framework and legal description) are two important outputs of the modeling process, and are an indispensable part of the reports prepared on the modeling exercise (e.g. actuarial valuations regarding health care schemes, or financial analysis of national health care budgets).

There are some typical model structure to construct a projections the social insurance, which use four main modules: 1) *An Economic and Demographic Module*, that provide a projection and simulation of the population, labour force, employment levels, and other economic data that are needed as input for calculation of expenditure and revenues of the scheme; 2) *An Income Module*, that projects the assessment base for contributions using the economic and demographic data supplied by the above module, together with assumptions regarding the contributor and compliance ratios of the contributing population; 3) *An Expenditure Module*, that projects expenditure in various benefit categories, administrative expenditure and other expenditure on the basis of the projection of the covered population (e.g. the eligible population) and assumptions or projections of the future utilization and cost developments; and 4) *A Result Module*, that calculates the annual balances of income and expenditure, especially the contribution rate.

The methodology, which will be used to assess the projections are:

a. Demography and economy
    1. GDP real increase rate
       GDP(t) * (1+inflation rate(t))
    2. Real wage growth rate
       Average wage(t) * (1+inflation rate(t))
    3. Productivity real increase rate
       Productivity (t) * (1+inflation rate (t))
    4. Labour force
       LF(t) = Population Active (t) * Labour Force Participation Rate (t)

b. Labour Supply:
   1. Labour Force Participation Rate
      Labfrr = LF(t)/ Total Population in active age (t)
   2. Employment
      E(t) = GDP (t) / Labour Productivity (t)
   3. Wages
      W (t) = GDP (t) * wage share in GDP (t) / Employment (t)

c. Income
   1. No. of contributors
      Cont (t) = Contributor 1 (t) + Contributor 2 (t) + contributor 3 (t)
      Where:
      Cont 1 (t) = Employment (t) * coverage rate for category i of contributors (t) * contributor rate for category i of contributors (t)
      Cont 2 (t) = (LF - Employment (t)) * coverage rate for category i of contributors (t) * contributor rate for category i of contributors (t)
      Cont 3 (t) = Inactive population (t) * coverage rate for category i of contributors (t) * contributor rate for category i of contributors (t)
   2. Assessment Base
      AB (t) = Wage (t) * Catchment ratio for category i (t) * Compliance rate for category i (t)
   3. Total Insurable Earning
      $TIE(t) = \sum_{1=i}^{3} \text{contributors } i\ (t) * \text{Assessment Base } i\ (t)$
   4. Contribution Income
      CI = TIE (t) * Compliance rate (t)
   5. Total Income
      TI = CI (t) * Other Income (t)

d. Expenditure
   1. Covered population
      $Covpop(t) = \sum^{3} \text{Contributors category i of contributors (t)} * \text{dependency ratio category I (t)}$
   2. Benefit expenditure
      BE (t) = $\sum$ BE for category j of care (t)
      Where;
      BEj (t) = Covered population for category j of care (t) * Adm expenditure (t) + Other expenditure (t)
   3. Catchment ratio
      Catchr (t) = Total Earning (t) / payment of contribution (t)
   4. Compliance rate
      Compr (t) = no. Of contributor (t) / no. of covered people (t)
   5. PAYG rate
      PAYGr (t) = (total Expenditure (t) - Other Income) (t) / Total Assessment Base (t)

To assess the projection, some of data would be followed as:

1. Demography data, which include the total population and mortality rate by age and sex, age specific fertility rate or TFR
2. Economy data, the GDP nominal and GDP real increase rate, average rate and real wage, growth rate, inflation rate, productivity real increase rate are included in this data and used for calculation
3. Labour supply data such as; labour force participation rate by age and sex, number of employed by sex and age, public employees, unemployed rate used for calculation and make some projections
4. Income data (from budgeting document), such as: No. of contributors, catchment ratio, compliance rate, other income, and Government subsidies. These are used for calculation and some projections especially for income the programs..
5. Expenditure data, which include the covered population by sex and age, mobility rate and utilization rate by sex and age, average cost per case (by sex and age if possible), administrative cost. These data are used for calculate the program specially the costs of program

This research also used some assumption to define and help us when we calculate the projection such as;

1. Demographic model, the model used migration, fertility rate ratio of new born (male and female), and mortality rate, and the function of these assumptions to help and support a kind of project research. These assumptions are:
   a. Migration
      We assume that the international migration has growth of increase 3,5% from 2000 to 2020 then the rest will increase to 5 %
   b. Fertility rate
      We assume that the fertility rates are taken from United Nation model which are divided to 3 variants depend on the category of the country which are: low, medium, high. Because of Indonesia as a high category of fertility with ± 220 millions people are included in high variant, therefore we included variant for the rate in high variant (2.6)
   c. The ratio of new born for male and female is the same, it means that the opportunity of male and female in amount is same
   d. Mortality rate, the rate is taken from United Nation projection and it keep constant in 5% for 50 years
2. Labor force, the model used labor force participation rate, and working age. Whereas labor force participation rate is divided by sex, as following :
   - Male : keeps constant 80% for 20 years then will be increase to 82% for the rest of projection
   - Female: keep constant 50% for the next 10 years later then will be increase to 52% for 10 years, then increase to 54% for the rest of projection.

   Therefore the Average of Labour force participation rate (male and % female) will be 65% for 20 years, increase to 66% in 10 years, finally increases to 68% for the rest of projection. The working age is assumed from15 years old to 100 years old, and we divided employment as public employed and others employed. We also assumed for each public employed has 3 dependants.
3. Economic, the model used Gross Domestic product, Labour Productivity, employed population, real growth wage, CPI/Inflation assumptions

a. GDP
   Real GDP growth rate, it is a gross income that receive a people in period, our assumption keep constant as 5% for 50 years; considering to the unstable economic situation over 10 years.
b. Labor productivity, it is a growth of labour productivity in a country for every period. We projected that the growth was 4% for 20 years then increases to 5% afterwards; considering to the globalization affects support the local people to compete with others (from expatriate), therefore the local should improve their skills and education.
c. The employed population is the growth of employed population every period in thousand. We also assumed that has the same growth rate with labor force.
d. Real growth wage is growth of employed wage in every year. We assumed that it keep constant for 13% in 20 years then increase to 15% in 10 years, finally increases to 17% afterwards, considering to positive expectation for the economic and political condition and also affected by the Indonesian culture with majority of Moslem people also influence the family planning program which [do] not too big its degradation
e. CPI is the inflation of the price of product and services in every period. We assumed that increase 10% for 20 years then decrease to 7% for the next 10 years, continue to 5% afterwards. It is considering to the better situation influence the positive economy reaction

4. Income and Expenditure, the model use catchment ratio, contribution rate, subsidies, benefit expenditure, and administration expenditure as assumption to support our calculation.
   a. Catchment Ratio is ratio the total amount of earnings subject and payment of contributions (i.e. total insurable earnings to the total amount earnings theoretically a payment received by insured persons. The assumption of this ratio is 80% for over 50 year projection considering to the capability of the program to sustain its system.
   b. Contribution rate is a rate of contribution/participation that should be paid by member in percentage. We projected 2 % for 20 years and increase to 3% for the rest years. It is consider to capability of the people (the covered people) with the macro economy situation.
   c. Subsidies, we assumed half of income contribution for 50 years.
   d. Benefit Expenditure is how much benefit (in percentage) can be cost by the program. We assume that benefit 60 % from total contribution payment
   d. Administration expenditure is the administration cost should be paid by member, hence we assumed it 10 % from total benefit

THE RESULTS AND DISCUSSIONS

Economy Projections

As the Table 1 shows us that the GDP assumed to increase every year, either through nominal and also real. Tough if we will see from growth of its GDP seen to be assumed not happened growth (stagnant) started from year 2010 until 2050.

The CPI (consumer price index) also assumed to decrease from 1998 to 2000 around 58 percent then stabilize for ten year, and finally it would be projected to be decrease on the last year projections until 5 percent. It affected to the amount of wage (whether nominal or growth rate). Therefore, the wage will increase in every year, due to the price of consumption decreases.

The labour productivity growth assumed to increase followed by increase in level of education and additional skill of labour. Hence, it influence to amount of labour productivity in currency unit (rupiah).

Finally, I assumed that the increasing of total population not too significant, however by using some other assumption such as perception that resident majority [is] Moslem. Hence, the program of family planning enough to overcome resident explosion with number which [do] not too big its degradation. Therefore, it affect to the increasing of total wages and wage share of GDP.

Table 1. GDP, CPI, and Labour Productivity Growth

	1998	1999	2000	2010	2020	2030	2040	2050
GDP Nominal (trillion Rps)	955.75	1019.98	1297.81	5250.37	21240.66	65970.25	171109.85	443814.87
GDP real (Trillion 1993 price)	376.89	378.05	397.93	648.19	1055.84	1719.85	2801.45	4563.27
GDP real growth rate		0.3%	5.3%	5%	5%	5%	5%	5%
Nominal wage annual (thousand Rps)	3387.00	4163.40	5162.40	17524.11	59486.79	240657.24	1259560.40	6592332.01
Nominal Wage growth rate	17.25	22.92	23.99	13.00%	13.00%	15.00%	18.00%	18.00%
CPI	67.16%	20.57%	9.16%	10.00%	10.00%	7%	5%	5%
Real Wage growth rate	-49.91%	2.35%	14.83%	3.00%	3.00%	2%	2%	2%
Employed population (thousand)	87672	88817	89838	98860	108788	108788	108788	108788
Labour Productivity (thousand Rps per	4298.89	4256.53	4429.46	6556.69	9705.50	15809.23	25751.57	41946.60
Labour Productivity Growth	-13.62%	-0.99%	4.06%	4.00%	4.00%	5.00%	5.00%	5.00%
Total Wages (Trillion)	296.95	369.78	463.78	1732.43	6471.42	26180.52	137024.51	717163.77
Wage share of GDP	31.07%	36.25%	35.74%	33.00%	30.47%	39.69%	80.08%	161.59%

Demography Projections

As the economy projections, the Table 2 shows us that the population increase not too significant (with some considerations of the social situation in this country). It also influence to number of working age, employment and labour force. Number of labour force participation rate taken away from *UN (United Nation) Population Prospects 1996*: *The 1996 revision*, 1996, and it is used to calculate number of labour force. After, find the number of labour force , we can look for number of unemployment after Labour Force Participation Rate minus amount of employment.

Table 2. Demography Projections

	2000	*2010*	*2020*	*2030*	*2040*	*2050*
Total population	**212,091**	**242,280**	**273,764**	**303,193**	**328,494**	**348,433**
Working age	**146,859**	**177,440**	**204,219**	**231,113**	**255,884**	**275,973**
Labour force participation rate	**65%**	**65%**	**66%**	**68%**	**68%**	**68%**
Male	80%	80%	80%	82%	82%	82%
Female	49%	50%	52%	54%	54%	54%
Labour force	**95,200**	**115,251**	**134,600**	**156,739**	**173,263**	**186,619**
Employed	**89,838**	**98,860**	**108,788**	**108,788**	**108,788**	**108,788**
Public employed	**4,020**	**4,867**	**5,684**	**6,619**	**7,316**	**7,880**
Other employees	**120,168**	**132,165**	**146,296**	**146,039**	**145,744**	**145,516**
Unemployed	**5,362**	**16,392**	**25,812**	**47,951**	**64,475**	**77,831**
Dependants	**12,060**	**14,600**	**17,051**	**19,856**	**21,949**	**23,641**

Table 3. Income and Expenditure Projections

	2000	2010	2020	2030	2040	2050
GDP Nominal (trillion Rps)	1297.81	5250.37	21240.66	65970.25	171109.85	443814.87
GDP at constant price(in trillions)	397.93	648.19	1055.84	1719.85	2801.45	4563.27
Labour force (thousand)	95,000	116,384	168,274	349,445	1,368,348	6,701,120
Employment (in thousand)	89,838	98,860	108,788	108,788	108,788	108,788
Average wage (thousands)	5,162.4	17,524.1	59,486.8	240,657.2	1,259,560.4	6,592,332.0
No. of covered persons(Public employees) in thousand	11,229.8	17,300.5	21,757.5	21,757.5	21,757.5	21,757.5
No. of covered persons(voluntary members)in thousand	8,983.8	14,828.97	21,757.51	21,757.51	23,933.27	27,196.89
Total No. of Contributors	20,213.6	32,129.4	43,515.0	43,515.0	45,690.8	48,954.4
catchment ratio	80%	80%	80%	80%	80%	80%
contribution rate	2%	2%	2%	3%	3%	3%
Coverage Rate	23%	33%	40%	40%	42%	45%
contributions(millions)	927,559.4	4,850,804.7	20,708,553.8	125,666,475.0	657,717,664.7	3,442,386,098.0
other incomes (Subsidies)	463,779.7	2,425,402.4	10,354,276.9	62,833,237.5	328,858,832.4	1,721,193,049.0
Total income(millions)	1,391,339,074	7,276,207,071	31,062,830,690	188,499,712,488	986,576,497,099	5,163,579,147,058
Income as a share of GDP(norminal) in percent	1,072,066.85	1,385,847.78	1,462,423.33	2,857,344.09	5,765,749.42	11,634,533.79
Compliance Rate	45.89	150.98	475.89	2,887.89	14,394.98	70,318.21
Assessment Base	82.5984	280.3858351	951.7886124	5775.773676	30229.44961	158215.9682
Total Insurable Earnings	1,669,606.89	9,008,637.33	41,417,107.59	251,332,949.98	1,381,207,095.94	7,745,368,720.59
Benefit Expenditure	556,535.63	2,910,482.83	12,425,132.28	75,399,885.00	394,630,598.84	2,065,431,658.82
Administration Expenditure	55,653.56	291,048.28	1,242,513.23	7,539,988.50	39,463,059.88	206,543,165.88
Total Expenditure	612,189.19	3,201,531.11	13,667,645.50	82,939,873.49	434,093,658.72	2,271,974,824.71
PAYG	**17.97**	**27.68**	**34.81**	**34.81**	**34.81**	**34.81**

Income and Expenditure Projections

The Table 3 shows a result of income and expenditure projections, whereas the GDP nominal and real increase because of the increasing of GDP growth (as we can see from the economic projection below), these are also happened to the average wage which depend on the increasing of GDP growth. As we can see, total employments are counted by GDP real times employed population (where the employed populations are referred by UN projections), this results are able to count how many people are covered by program which is assumed about 80 percent of contributors coming from public employed, and the rest are others (private employed and informal sector). It also shows total contribution which are calculated by the catchment ratio times contribution rate times average wage times number of covered people (here, I assumed that the catchment ratio 80% and contribution rate 2% to 3 % of the salary/wages).

As our objective to evaluate the program, we need to calculated rate of Pay As you Go (PAYG rate) which is necessary to know how much money that suppose to be available (funded) on this program every year. It counted by total expenditure (benefits and operation cost) minus other income divided to total income (total of contribution), here the table are also shows us that the PAYG rate increase every year because of the increasing of income (by the increasing of number of

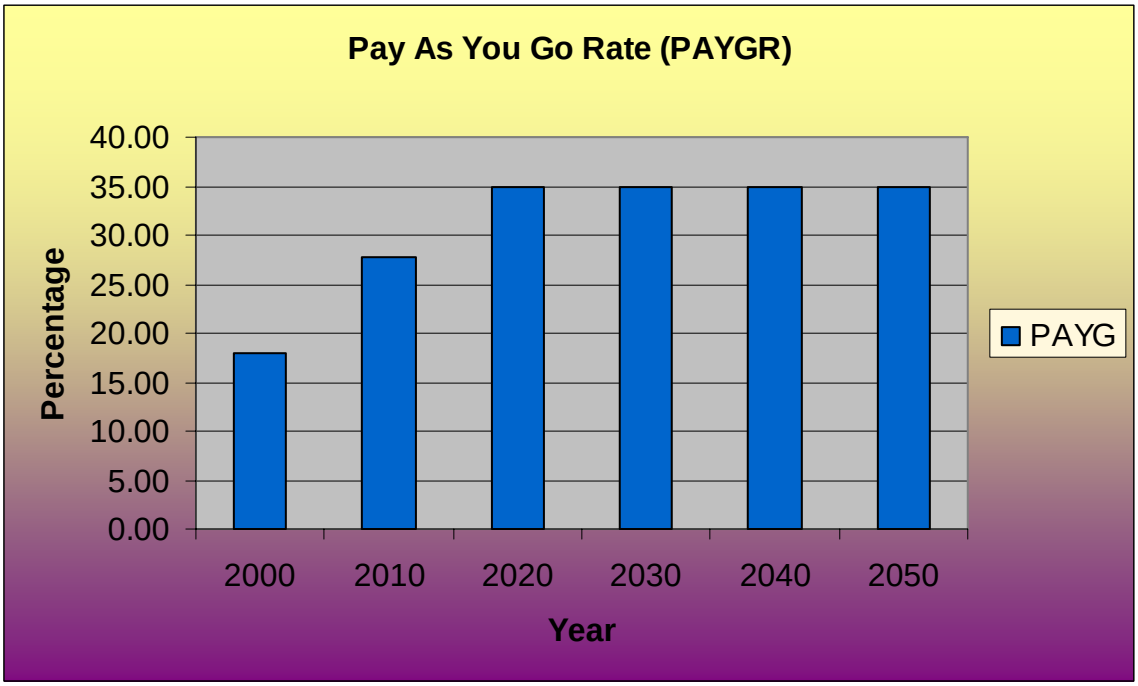
contributor). Finally, total income calculated by amount of contribution plus other income, then we can find how much income as a share of GDP in every year (for 50 years projections).

CONCLUSION

Based on projection and its results that the Programs are projected and assumed as followed:

1. Coverage rate are increased because of the number of contribution and ratio of dependency is also increased for 50 years (see table 3)
2. Because of the population increase followed with number of employment and wage, the number of contribution is also increase. It improves that the program will improve as far as the number of contribution and wage will increase and the economic situation is stable. Because the program financed by the contributor trough a contribution rate, beside that the macroeconomic situation influenced the program. The experience showed that on last unstable situation (1998-1999) where there was a hyperinflation (more than 100%) affect to the income o people, of course this also affect to their social security.
3. The assessment base is the amount of coverage member (legally) and this amount will be used to calculate the insurable earning, which also the amount of rupiah will be financed by the program. These also increase because of the number of contributor, income, and cost of life (inflation) are also increase, therefore the increasing of those will influence to the expand of program for the future (see table 3)
4. Pay As You Go (PAYG) payment increase followed by the contribution rate, income and expenditure, and the results can be resumed by following this graph:

As we know before the PAYG is how much money that suppose to be available (funded) on this program every year, hence PAYG increased because total Expenditure and other income also increase. Those are followed by the increasing of Total Assessment Base because of the number of contributor and some indicators such as inflation, population, and income is increase every year.



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