White Paper

Old Age Saving Program, Pension Program, and Death Benefit Program

National Social Security System

Prepared by The Ministry of Finance of The Republic of Indonesia
Assisted by Asian Development Bank (ADB) - Mr. Mitchell Wiener, Pensions Specialist

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EXECUTIVE SUMMARY

Law No. 40 of 2004 (the SJSN law) requires the establishment of five separate mandatory social insurance programs covering the entire Indonesian population.

- *Pensions*: This program will pay a lifetime monthly annuity to workers following their retirement, workers who become disabled and survivors of deceased workers or pensioners.

- *Old-age savings*: Workers will make contributions to individual accounts throughout their working career. These contributions will be invested and the account balance will be paid-out as a lump-sum at retirement

- *Health*: This program will provide comprehensive medical benefits to all Indonesians based on medical need

- *Workers compensation*: This program pays benefits for those who are injured or die as a result of employment-related accidents or sickness

- *Death benefits*: This program pays a modest lump-sum death benefit to the beneficiaries of a deceased worker that covers funeral expenses and may provide additional compensation to the family as well.

The SJSN law is a framework law. It outlines the basic structure of the reformed social security system, but does not specify the benefits and contribution rates for each of the programs.

In our analysis we have focused on both the design of each individual program and the interrelationship among the programs. It is important for all of the programs to fit together into a package that supports the government's overall social policies and fiscal objectives. Each individual program must have a clear role and rationale within the country's overall social protection scheme.

Under the SJSN law, the burden of financing the various social insurance programs is allocated among workers, employers and the government.

- Formal sector workers and their employers finance the SJSN social insurance programs by making contributions as a percent of wages. Costs are shared between employers and workers

- Contributions for informal sector workers can be a nominal amount in local currency or a percent of wages. Contributions on behalf of the informal sector poor must be paid by the government. Those in the informal sector who are not poor must pay their own contributions.

The SJSN programs will eventually provide a basic level of social protection for all Indonesians. These will be supplemented by family support and targeted social welfare programs. Workers will also be able to purchase additional insurance protection and retirement income savings programs from the private sector.

Programs will need to be phased-in carefully to make sure they are affordable to the State budget and don't negatively affect employment and the competitiveness of Indonesian businesses. Necessary infrastructure must also be developed before the programs can

begin. Proper transparency and accountability and efficient administration are needed for the system to be successful.

1. STRATEGIC PLAN FOR SJSN IMPLEMENTATION

As a first step, stakeholders must agree on a broad strategy for the SJSN programs. Part 1 of this report discusses the overall strategic approach to the design and implementation of the SJSN social insurance programs. The key points emphasized in this part of the report are:

- The SJSN programs provide a base level of support to all Indonesians. They are not intended to provide all needed benefits to everyone. Rather, SJSN benefits need to be supplemented by family care, private insurance and retirement savings programs and social welfare programs

- According to the SJSN law, the four existing perseros (Jamsostek, Taspen, Askes and Asabri) will collectively become the administrators of the SJSN programs. From a technical perspective, there is no need for four administrators; one or two are sufficient. Equally important, the administrators should be organized by type of social insurance program rather than by labor market segment as they are now. One administrator should be responsible for the pension benefit for all labor market segments, for example, rather than having an administrator for civil servant pensions and another for formal sector pensions, etc.

- The legal structure of the administrators (BPJS) should be based on trust fund principles. The BPJS should be not-for-profit and should have a legal and fiduciary obligation to act in the best interests of fund members. The assets of participants should also be legally separated from the assets of the BPJS to increase transparency and protect participant's assets from the claims of the BPJS creditors. The current legal structure of persero is inconsistent with these goals

- The Social Security Council (DJSN) is responsible for oversight of the SJSN system and the BPJS. It is a political body with broad representation of all stakeholders plus outside experts. It should act as a "trustee" responsible for protecting the interests of plan participants and assuring the SJSN system operates on an efficient and fiscally sustainable basis. Once the legal form of the BPJS is changed, the DJSN should assume many of the responsibilities current assigned to the Ministry of State-Owned Enterprises (BUMN)

- It is important for the technical operations of the BPJS to be closely monitored. The DJSN is a political body and does not have the technical expertise to supervise and control the operations of the administrators. A supervisory organization that is as independent as possible from political influence should closely monitor day-to-day BPJS operations for compliance with all applicable laws and regulations. It is also best if a single organization is responsible for supervision and control rather than having this responsibility scattered among many different institutions. The organizations most suited to this task are either the Secretariat of the Council or a newly-created SJSN division of Bapepam LK. Given the current staffing and salary limitations for Secretariat members, Bapepam LK will likely need to supervise the BPJS in the early stages of the SJSN programs. Their responsibilities could be transitioned to the Secretariat or another organization over time.

- The cost of the SJSN programs as a percent of wages must be limited. The programs must be affordable to workers and employers, not increase unemployment and allow Indonesian businesses to maintain their regional and international competitiveness. The government of Indonesia should decide how much it can afford to spend on the SJSN programs and then design the programs to fit within the predetermined cost parameters. The table below summarizes the recommended contribution ranges as a percent of pay for each program.

Program	Cost as % of Covered Wages
Health	4.0%-6.0%
Worker Accident	0.25% - 0.50%
Pension	5.0% - 6%
Old-Age Savings	3.0% -4%
Death Benefits	0.25% - 0.50%
Total for SJSN Benefits	**12.5% - 17.0%**

- *The health insurance program* will provide health services similar to those under the current Askes program for civil servants and the Jamkesmas program for the poor. It requires careful actuarial analysis to determine its likely cost. First a study is needed to determine utilization and average costs for various types of covered health services. Then a careful analysis of the projected costs of the program must be completed taking into account the impact on utilization of social health insurance introduction, planned government infrastructure spending, phase-in of coverage and cost-sharing alternatives

- *The worker accident program* should remain similar to the current Jamsostek and Taspen programs. Employers should pay the entire cost. Premium rates should vary by industry and job classification and should also reflect each employer's actual claims experience. The design of the system should encourage and reward employers who invest in workplace safety

- *The pension program* is more important than the old-age savings program because it provides workers with a guaranteed monthly income for the remainder of their lives following retirement or disability, and provides an annuity to survivors of deceased workers or old-age pensioners. Benefits can be based on average pay and years of contributions or can be a flat amount for each year of contributions, and should be indexed to inflation following retirement. The initial retirement age for the SJSN pension program should be 60, and should be adjusted upward as life expectancy increases. The SJSN law requires 15 years of contributions before workers are eligible for a pension benefit. This is not a good design feature as it leaves the current elderly and many older workers with no retirement income. The government should seriously consider providing workers with some credit for years worked prior to the start of the SJSN pension system and should also consider paying a modest "social pension" to those who are already over retirement age at the time the pension system begins

- *The old-age savings program* provides a modest lump-sum to participants at retirement. This will provide workers with liquidity and help them finance their transition from working life to retirement. The contribution rate to the old-age

savings program should be kept low initially but could increase over time. It is more important to focus on the pension system, since it provides a lifetime annuity income to the elderly

- *Asset management in the old-age savings* program is one of the keys to program success. Small differences in the annual rate of return can have a major impact on the benefit payable at retirement. Key steps in the asset management process include drafting an appropriate investment policy, developing an optimal asset allocation strategy and selecting individual securities. While broad investment policy should be developed by the DJSN and BPJS, the day-to-day asset management should be done by the private sector to improve rates of return, increase accountability and transparency, and limit political interference in the investment process

- *The death benefit program* should provide a modest lump-sum to beneficiaries on the death of an active worker. Benefits are not payable from this program for the death of family members. A large benefit is not necessary since a monthly annuity benefit will be paid to beneficiaries of deceased workers from the SJSN pension program. The benefit could be a multiple of pay or a flat amount. Further discussion is necessary to clarify the precise role of the death benefit program. It is unclear whether it is intended to cover funeral expenses only or provide a larger benefit

- *Harmonization* with existing benefit programs is necessary to avoid duplication of benefits and control costs. Existing programs for the formal sector and civil servants will need to be adjusted when SJSN programs are introduced. This also includes the severance pay program under Labor Law #13 of 2003. At a minimum, benefits payable under existing programs should be reduced by the benefits payable from the SJSN programs. For example, benefits payable under Labor Law #13 would be reduce by the value of the SJSN pension program and pension benefits payable to civil servants from the budget would be reduced by the SJSN pension benefit. This is referred to as a "carve-out approach" because the SJSN benefits are carved-out of the amount currently paid. The end result is no loss of total benefits. The sum of the amounts payable from SJSN and non-SJSN programs equals the amount payable today. Of course, further reforms to existing programs are also possible.

- *The informal sector* raises special issues because of the lack of an employer/employee relationship, the difficulty of measuring income and the difficulty of collecting data and contributions on a monthly basis. There are also financial issues because the government is responsible for identifying the poor and making contributions to the SJSN social insurance programs on behalf of the poor. Social assistance programs for the poor will also need to be adjusted once SJSN programs are introduced.

The first step in the design process is for the government and key stakeholders to agree on the overall strategic approach to the design and administration of the SJSN program. There seems to be broad agreement on many of the key issues, but other issues remain contentious including the legal structure of the BPJS, responsibilities of the existing perseros under the SJSN law, the supervisory agency for BPJS operations, and the asset management structure for the old-age savings program.

2. DETAILED DESIGN AND FINANCING

The Ministry of Finance was assigned specific responsibility for the design and financing of the pension, old-age savings and death benefit programs. Consequently, this section of the report focuses on these three programs and no detailed financial and actuarial analysis of the health or workers compensation program is presented. A separate comprehensive study is required for the design and financing of the social health insurance program.

2.1 DEMOGRAPHIC PROJECTIONS

Any analysis of the long-term finances of the pension, old-age savings and death benefit programs must begin with projections of the population and labor force. The analysis period for pension programs, in particular, is normally 75 years or more. This is necessary because the demographic characteristics of the Indonesian population will change significantly over that time period. The population will age, resulting in a much higher proportion of elderly and a smaller group of workers and children. Since contributions by workers finance benefits for the elderly, the relationship between the number of elderly and the number of workers has a significant impact on system finances.

The chart below shows our projection of the change in the composition of the population over time. It clearly shows that the percent of the population that is elderly (those over 60) will grow rapidly while other segments of the population decline.
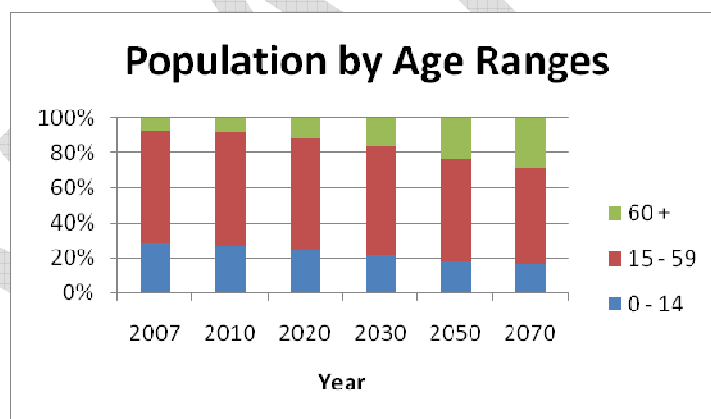
These projections are based on a declining fertility rate from 2.27 children per woman today to 1.84 by 2035. It also assumes a declining mortality rate due to improvements in economic conditions and quality of medical care.

2.2 PENSION PROGRAM FINANCES

The pension program can provide a replacement ratio of about 20% of average wages at a long-term cost of 5% of wages. If the cost is increased to 6%, it is possible to give past service credit to older workers and provide a modest social pension to existing elderly.

While the average cost over the 75-year analysis period is 5-6%, the actual cost varies significantly from year-to-year. In the beginning, the cost is almost zero, since there are no old-age pensioners and only a handful of disabled and survivor pensioners. But over time, the number of pensioners skyrockets due to population aging and system maturity while the

growth in the number of contributors slows and eventually begins to decline. The chart below compares the projected number of beneficiaries receiving benefits to the number of contributors over time.
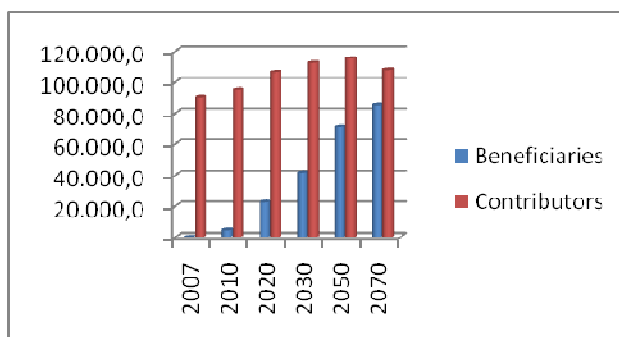
When analyzing the cost of the pension program, our goal was to design a program that gave meaningful benefits but kept the cost of the SJSN pension program to 6% or less. As a starting point, we looked at a pension program based on the following parameters:

- Retirement age: Age 60 with 15 years of contributions
- Benefit formula: 0.5% of final average earnings for each year of contributions
- Past service credit: None
- Social pension for elderly: None
- Minimum benefit: None

The long-term cost of this program is 5.27% of wages, but the year-to-year cost is very different as shown in the table below. For the first 15 years of the new program, the cost is almost zero because there are no old-age pensioners. Between 2030 and 2050, the cost of the program accelerates rapidly due to system maturity and population aging. By 2070, the program costs almost 10% of wages.

	2010	2020	2030	2050	2070
As a % of GDP	0.0%	0.1%	0.5%	2.0%	2.9%
Required contribution	0.0%	0.2%	1.7%	6.3%	9.8%

This pattern of costs creates serious problems in financing the SJSN pension system. If the average cost of 5.27% is charged throughout the 75-year period, there will be huge excesses of revenues over expenditures in the early years. These "reserves" will accumulate to more than 30% of GDP and will have to be properly invested and protected in order to make up for contribution deficiencies in later years.

If the government decides to charge the actual cost each year rather than an average cost, then the cost of the pension program as a percent of wages will increase rapidly over time. This will likely lead to complaints from workers and employers as the payroll contribution requirements increase significantly. The likely solution to the design and financing issues is a combination of several different elements:

- Grant past service credit to elderly workers so they can receive an old-age pension at retirement. This means workers will get credit for some or all years worked prior

to the start of the SJSN pension program. This will allow older workers to be eligible for a pension benefit rather than just a return of contributions and will also provide them with a larger benefit than they otherwise would have received

- Pay a "social pension" to existing elderly so they have a guaranteed monthly income for life. This is a modest pension benefit paid to all Indonesians who have already attained the retirement age prior to the start of the SJSN pension system

- Raise the retirement age over time as life expectancy increases

- Use pay-as-you-go financing (contributions are sufficient to cover expected benefit payments and expenditures) in the early years of the pension system and then begin some prefunding as the system matures to moderate required contribution rate increases.

The table below shows the impact on the required level contribution rate if the retirement age is slowly increased and full or partial past service benefits are granted and/or a social pension is paid to the elderly. A retirement age of 60, increasing to 65 by 2047 is used for all but the first of these scenarios.

Retirement age	Past service credit	Social pension	Contribution Rate
60	None	No	5.27%
60 -> 65	None	No	4.48%
60 -> 65	None	Yes	4.64%
60 -> 65	15 years	No	5.69%
60 -> 65	15 years	Yes	5.85%
60 -> 65	All years	No	6.02%
60 -> 65	All years	Yes	6.18%

In these examples, past service credit is given for either a maximum of 15 years of past service or for all past service. Past service refers to years the employee worked prior to the start of the SJSN system and for which no SJSN contributions were paid.

For example, assume a worker is age 50 on the SJSN pension program start date and began working at age 25. At the time the system begins, the worker already has 25 years of work history, but no years of SJSN contributions. Under the SJSN law, no credit would be given for these 25 years of past service when calculating the pension benefit. At age 60, when this worker retires, he or she will have only 10 years of SJSN contributions and will therefore not be eligible for a pension at all. The worker's contributions with interest will be returned, but no lifetime annuity will be paid.

However, if the worker receives credit for some or all of the years of work prior to the start of the system, then the worker will be eligible to receive a SJSN pension at retirement. If 15 years of past service credit is granted, then the worker's benefit at age 60 will be based on 25 years of contributions, even though contributions have only been made for 10 years. The

worker will then be eligible for a pension and the benefit will be larger than it would have been if only years of contributions were taken into account.

A social pension refers to a pension benefit paid to those who are already 60 or older on the day the pension system begins. Including a social pension would provide all elderly Indonesians with some lifetime annuity income from the SJSN pension program from date of inception. For purposes of our analysis, we assumed the social pension is 100,000 Rp. per month and is indexed each year to increases in wages. As can be seen, costs range from a minimum of 4.48% with no past service or social pension to a maximum of 6.18% with full past service credit and social pensions.

The table below illustrates the cost of the pension program each year as a percent of GDP and as a percent of wages assuming full past service credit and payment of social pensions. Note that the initial cost is higher than in the base case because elderly workers and those over age 60 receive benefits, but the ultimate cost is lower due to the increased retirement age.

	2010	2020	2030	2050	2070
As a % of GDP	0.6%	1.0%	1.6%	2.3%	2.7%
Required contribution	1.8%	3.1%	4.8%	6.8%	8.3%

Regardless of the ultimate design chosen, the government will struggle to keep the cost of the pension program stable over time. These types of programs work best when the population is growing and the number of pensioners relative to contributors is staying the same or declining. It is difficult to keep the financing stable when the population is aging rapidly.

The government will need to carefully manage this program. Updated analysis will need to be prepared each year and actions to stabilize program costs will need to be taken on a regular basis. The key to pension program management is to make small periodic adjustments rather than waiting until the system is in crisis and making major changes in the retirement age, benefits and contribution rates to bring the system back in balance.

2.3 OLD-AGE SAVINGS PROGRAM

The old-age savings system should have a required contribution rate of about 3% of wages initially. Even with this contribution rate, the SJSN old-age savings program can provide much better benefits than the JHT program (with a contribution rate of 5.7%) if it is properly managed. Of key importance are maximizing rate of return on investments, controlling administrative and investment expenses, and sharply limiting withdrawals prior to retirement.

The cost of the old-age savings program as a percent of GDP is much simpler to calculate for the old-age savings program than the pension program. Assuming national income is 35% of GDP and the contribution rate is 3% of total wages, the total cost of the program will be 1.05% of GDP (35% * 3%) and will be the same in all years unless the contribution rate or ratio of national income to GDP changes.

To estimate the benefits likely to be paid from the old-age savings program at retirement, we made the following assumptions:

- Contribution rate: 3.0%
- Contribution payment frequency: Monthly, contributions made in all years
- Withdrawals prior to retirement: None
- Inflation: 4%
- Real rate of wage growth: 3%
- Real rate of return on investments: 4%
- Expenses: 2% of contributions and 0.6% of assets

Expense charges for old-age savings programs generally consist of two types of fees. The first is a charge as a percent of assets for the asset management function. The second is a charge as a percent of contributions to cover administrative expenses such as individual account recordkeeping, production of statements, collection of contributions and other functions.

Based on these assumptions, we projected the total account balance as a multiple of salary at retirement. These results are shown in the table below.

Years of Contributions	Salary Multiple
5	1.8
10	3.7
15	5.6
20	7.6
25	9.6
30	11.6
35	13.7
40	15.8

The next table illustrates the impact of rate of return on benefits from the old-age savings system. We kept all the assumptions the same except we modified the real rate of return. For a worker with 30 years of contribution, for example, 1% additional rate of return increases the total benefit from 11.6 to 13.5 months of final salary.

Years of Contributions	Real Rate of Return		
	3%	4%	5%
5	1.8	1.8	1.9
10	3.6	3.7	3.9
15	5.3	5.6	6.1
20	6.9	7.6	8.4
25	8.5	9.6	10.9
30	10.1	11.6	13.5
35	11.6	13.7	16.4
40	13.0	15.8	19.4

The old-age savings program will eventually accumulate very significant amounts of assets. The table below shows the estimated total system assets as a percent of GDP based on the same assumptions used to estimate individual benefits.

Year	% of GDP
5	5.0%
10	9.6%
15	13.6%
20	17.0%

After 20 years, the system will likely have assets of about 17% of GDP. The government must seriously consider how and where it will invest such a large amount of assets and what procedures are necessary to protect these assets for the retirement security of its citizens.

A successful old-age savings program requires governance procedures that offer the best possible chance of maximizing rate of return within acceptable risk parameters, controlling investment expenses and limiting in-service withdrawals.

There are three primary asset management paradigms that could be used in the old-age savings program.

- The BPJS staff is responsible for asset management and selection of securities

- The BPJS sets the general investment strategy and hires and reviews the performance of private asset managers

- All aspects of asset management are the responsibility of private asset managers. The BPJS licenses private asset managers and individuals can select among competing managers and funds.

The positive and negative aspects of each option and international examples are contained in the main body of this report. We recommend private asset management (options 2 or 3 above) in order to maximize investment return and limit political interference in the investment process.

2.4 DEATH BENEFIT PROGRAM

The death benefit program is intended to provide a modest lump-sum to the beneficiaries of deceased workers. This could be a multiple of salary or a flat amount. Note that beneficiaries will also receive a survivor annuity benefit from the SJSN pension program for non-employment related deaths or a death benefit from the workers compensation program for employment related deaths. The government needs to further clarify the purpose of the SJSN death benefit. It is unclear whether it is intended to cover funeral expenses only or to provide additional compensation to the family of the deceased. There has also been discussion about payment of benefits for the death of a family member of a covered worker. However, the SJSN law is clear that benefits are only payable from the SJSN program only for the death of a contributor. Death benefits for family members could be provided through social assistance programs.

We calculated the costs for three different possible death benefits. These examples are illustrative and not a specific recommendation for the benefit amount. Further discussion is required to clarify the purpose and amount of the SJSN death benefit. The illustrated benefit levels are intended to provide a modest lump-sum death benefit plus a small amount for funeral expenses. The formulas used are similar to the death benefit amounts payable under the current Jamsostek and Taspen death grant and workers compensation programs.

- Benefit equal to 12 monthly salaries

- Benefit equal to 10 million Rp. (in 2007) indexed to nominal wage increases. This means the death benefit increases each year in proportion to the increase in the national average wage. Therefore, the death benefit remains a constant percent of the average wage throughout the analysis period

- Benefit equal to 10 million Rp. (in 2007) indexed to inflation. The means the death benefit is adjusted each year for inflation. Since wage increases generally exceed inflation, this means the death benefit is a declining percentage of the national average wage.

The cost under all three programs declines over time because we assumed mortality rates would decline due to improved economic conditions, an improved medical system and advances in medical technology.

The table below shows the number of contributors and the expected number of contributor deaths assuming a retirement age of 60 and declining mortality. Note that the ratio of deaths to contributors declines even though the average age of contributors is increasing throughout the analysis period.

	2010	2020	2030	2050	2070
Contributors (thousands)	95,167	106,528	112,418	115,298	108,000
Deaths (thousands)	373	386	358	272	260
Ratio, deaths to contributors	0.39%	0.36%	0.32%	0.24%	0.24%

The next table shows the cost of the death benefit under each of the three options described earlier in this section.

	2010	2020	2030	2050	2070	Average
12 monthly salaries	0.39%	0.36%	0.32%	0.24%	0.24%	0.28%
10 mill Rp, wage indexing	0.21%	0.19%	0.17%	0.13%	0.13%	0.15%
10 mill Rp, inflation indexing	0.20%	0.13%	0.08%	0.03%	0.01%	0.06%

The cost of other flat amounts or different multiples of monthly salaries will be directly proportional to the amounts shown in this table. For example, if the flat amount is doubled, the costs will be doubled. If the death benefit is 48 monthly salaries, then the cost will be four times higher than for 12 monthly salaries.

Note that unlike the other social insurance programs, the cost of the SJSN death benefit starts out higher and declines over time. Consequently, the government must charge more than the long-term average cost for the benefit. For example, if the death benefit is 12 monthly salaries, then the initial cost should be at least 0.35% of wages for the first 30 years of the system and can decline in later years if mortality rates decline as expected.

2.5 HEALTH INSURANCE

Benefits are equal to all necessary basic medical care. This includes visits to primary and secondary care specialists, hospitalization, surgery, pharmacy, laboratory tests and other necessary care to assure good health. The system will be based on the managed care model. Each citizen has a primary care physician who serves as the access point for medical services. Except for emergencies, patients must first visit their primary care physician before seeing specialists or being admitted to hospitals. The system is primarily structured around public clinics and hospitals, but private health care providers can also participate. Contribution rates for the health insurance program must be based on calculations by an actuary or economist with expertise in health insurance. The cost will tend to increase over time due to increases in coverage as well as increases in the utilization of services, cost of providing needed medical care, number of facilities and providers, changes in medical procedures and technology, changes in the pattern of morbidity rates and changes in life expectancy.

We based our estimates of the cost of the health insurance program on data for 2005 and 2006 from Askes. We used adjusted claim data for civil servants to estimate SJSN health costs for the formal sector and data from the Askeskin program to estimate SJSN health costs for the informal sector. We made the following key assumptions in preparing our projections:

- The entire formal sector is covered immediately from the start of the program

- The informal sector poor are covered immediately from the start of the program

- The informal sector not poor are gradually brought into the program by 2020

- Claim costs for the informal sector gradually increase from current levels until they are equal to 90% of claim costs for the formal sector by 2020.

We prepared 75-year projections of health care costs, but the government should be aware than health care projections are normally done for a period of 10 years or less. With rapidly changing medical technology and standards of practice as well as increased access to care, it isn't reasonable to make projections over extended time periods as is common for pension programs. Consequently, the government should not attach too much significance to the estimated expenses in later years.

The table below shows the estimated cost of the overall health program as a percent of GDP. During the first 20 years the cost varies depending on the number of workers who are considered poor. This is because we assumed the informal sector poor are all covered immediately while the informal sector that are not poor are gradually brought into the program.

# poor workers	2010	2020	2030	2050	2070	Level

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# poor workers	2010	2020	2030	2050	2070	Level
14 million	0.10%	0.30%	0.40%	0.50%	0.60%	0.44%
35 million	0.30%	0.70%	0.90%	1.20%	1.50%	1.06%
46 million	0.40%	1.00%	1.20%	1.60%	2.00%	1.41%
63 million	0.50%	1.40%	1.60%	2.10%	2.70%	1.93%

Source: Author's calculations

Note that the cost of the health insurance program as a percent of wages varies by income level. Health benefits costs do not vary with income (everyone gets almost the same package of benefits), so those groups with a lower average salary pay more as a percent of wages for their coverage than others. If costs are expressed as a percentage of wages, then the cost for formal sector workers will be lower than for informal sector workers. It is also important to realize that within the formal sector there will be significant cost subsidies. Those with higher wages will be subsidizing the benefits of those with lower wages since all formal sector workers will be charged the same percentage of wages.

2.6 COST TO THE STATE BUDGET

The State budget will incur a variety of additional expenses and will realize some offsetting savings when SJSN is introduced. The primary sources of expense to the budget are:

- SJSN contributions for civil servants in the State's role as an employer

- Payment of contribution subsidies for the informal sector poor

- Budget support for the institutions required to support the SJSN system. This includes budget support for DJSN and its Secretariat, and for supervision and control of BPJS operations. It may also include budget support for BPJS or for contribution collection and enforcement.

Under the SJSN law, the government is required to pay the contributions to all five social insurance programs for those who are considered poor. The government has not yet specified the methodology to be used for determining the number of poor workers eligible for contribution subsidies. The cost to the government will depend on both the number of poor and their wages/income. We examined the cost to the State budget based on several estimates of the number of poor eligible for subsidies, ranging from a low in 2007 of 14 million to a maximum of 63 million poor informal sector workers.

63 million represents the total number of informal sector workers and shows the cost to the government if it proved impossible to collect payroll contributions from any informal sector workers and the government paid the required contributions for the entire informal sector.

The table below presents the costs as a percent of GDP on both a pay-as-you-go and a level financing basis for the pension, old-age savings and death benefit programs. For purposes of this table, the most expensive program option shown in the report was used. This is the pension benefit with full past service benefits and social pensions and the death benefit based on 12 monthly salaries.

# poor workers	2010	2020	2030	2050	2070	Level

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# poor workers	2010	2020	2030	2050	2070	Level
PENSION PLAN – FULL PAST SERVICE AND SOCIAL PENSION						
14 million	0.03%	0.04%	0.07%	0.10%	0.12%	0.10%
35 million	0.08%	0.14%	0.22%	0.32%	0.38%	0.30%
46 million	0.14%	0.23%	0.36%	0.52%	0.61%	0.49%
63 million	0.29%	0.48%	0.77%	1.10%	1.30%	1.04%
OLD-AGE SAVINGS						
14 million	0.05%	0.05%	0.05%	0.05%	0.05%	0.05%
35 million	0.15%	0.15%	0.15%	0.15%	0.15%	0.15%
46 million	0.24%	0.24%	0.24%	0.24%	0.24%	0.24%
63 million	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%
DEATH BENEFIT – 12 MONTHLY SALARIES						
14 million	0.01%	0.01%	0.00%	0.00%	0.00%	0.00%
35 million	0.02%	0.02%	0.02%	0.01%	0.01%	0.01%
46 million	0.03%	0.03%	0.03%	0.02%	0.02%	0.02%
63 million	0.07%	0.06%	0.05%	0.04%	0.04%	0.05%
HEALTH PROGRAM						
14 million	0.1%	0.3%	0.4%	0.5%	0.6%	0.44%
35 million	0.3%	0.7%	0.9%	1.2%	1.5%	1.06%
46 million	0.4%	1.0%	1.2%	1.6%	2.0%	1.41%
63 million	0.5%	1.4%	1.6%	2.1%	2.7%	1.93%
TOTAL						
14 million	0.18%	0.40%	0.52%	0.65%	0.77%	0.58%
35 million	0.55%	1.00%	1.28%	1.68%	2.03%	1.52%
46 million	0.81%	1.49%	1.83%	2.38%	2.87%	2.16%
63 million	1.36%	2.44%	2.93%	3.75%	4.54%	3.52%

Source: Author's calculations

As can be seen, the cost on a pay-as-you-go basis if the government paid for the entire informal sector starts out at 1.36% of GDP and grows over time to 4.54%. The level equivalent cost is 3.52% of GDP. On a more realistic basis, if 35 million poor workers are subsidized by the government, the total cost on a level basis is 1.52% of GDP.

It is important to keep in mind that the cost for financing benefits for the poor shown in the table is the gross cost of the SJSN programs. They do not reflect offsetting savings to the budget from the reduction or elimination of other programs. For example, when SJSN is introduced, pension benefits payable to civil servants from the budget will be reduced and social assistance payments to the informal sector poor will be reduced or eliminated. When determining the impact of SJSN on the State budget, these offsetting savings should be taken into account.

3. PREREQUISITES FOR START OF SJSN SYSTEM

A number of critical tasks must be completed prior to the start of the SJSN social insurance programs. If the system starts before these prerequisites have been completed, there is an

excellent chance the programs will fail regardless of how well they have been designed and financed.

The completion of these prerequisites is a 2-3 year process (at a minimum) and must be carefully managed at both the political and technical level on a regular basis. If the prerequisites are managed properly, it's possible to start the SJSN programs at the beginning of 2012. However, without careful daily attention, this date will inevitably slip.

2009 will be a critical year for the SJSN implementation. By year-end, all strategic decisions regarding the detailed design and financing of each SJSN social insurance program should be completed. In addition, assignment of responsibilities for key functions such as contribution collection, supervision and control, enforcement, financial and actuarial analysis, and the governance and legal structure should be finalized. Appropriate laws and decrees should also be completed and submitted to Parliament by year-end. If these steps are not completed on-time, then the start date of the SJSN programs will almost certainly be delayed.

Careful actuarial analysis and design is required to assure the cost of the health program is controlled and remains within established cost parameters. Utilization will tend to increase over time due to the existence of national health insurance, health awareness and increases in the number of providers and facilities. Time will also be needed for provider contracting and to agree with providers on reimbursement arrangements, quality control procedures, accounting and recordkeeping requirements, etc.

Key tasks for 2009 include:

- Determining the legal structure and role of each of the existing perseros (Jamsostek, Taspen, Askes and Asabri)

- Improvements in the overall governance structure, including a more effective supervision and control structure for the BPJS

- Design of the benefit programs and detailed short and long-term fiscal projections for the five social insurance funds

- Drafting of all required laws, government regulations and Presidential decrees to implement the design, financing, and administration of the SJSN program

Then 2010 and 2011 will be needed for the designated institutions responsible for key aspects of the SJSN programs to prepare for their new functions and responsibilities. Each institution will need a proper organizational structure and job descriptions. Appropriate staff will need to be hired and trained, detailed business processes and supporting IT systems will need to be developed and proper budgets will be needed.

Key tasks include:

- Assignment of Social Individual Numbers (SIN)

- Change in the legal structure of the BPJS

- Improvements in the contribution and data collection system

- Negotiation of contracts with health care providers and implementation of quality control procedures

- Methodology to identify and monitor the poor who are eligible for contribution subsidies from the government

- Creation of an "Office of the Actuary" within the government to manage the financial and risk management aspects of the SJSN program

- Public education program to explain the reformed social insurance scheme to Indonesian citizens, the media and Parliament.

All these tasks are prerequisites for the start of the SJSN programs. Each of these tasks must be carefully managed on a regular basis if they are to be completed on time. Support from the highest political levels is necessary if these tasks are to be given priority and the new social insurance system is to be successful.

PART 1

STRATEGIC PLAN FOR SJSN DESIGN AND IMPLEMENTATION

1. INTRODUCTION

The 1998 financial crisis showed that Indonesia's existing social protection programs were insufficient to prevent increased poverty and hardship for the population. As a result, the Constitution was amended and Law No. 40 of 2004 (the SJSN Law) was enacted to create a more viable system of social protection for all Indonesians.

The SJSN law outlines the broad structure of the new social insurance system but leaves many key elements to future laws and regulations. The primary objective of the law is to implement a viable, efficient and transparent National Social Security system that serves the needs of all Indonesians. This law requires the establishment of five social insurance programs – health, workers compensation, pension, old-age savings, and death benefits but gives few details about how the programs will operate. Consequently, implementation of the law will require agreement among stakeholders on program design, administration and governance and the drafting of appropriate implementing laws and regulations.

According to the SJSN Law, the health program should be implemented first but it is silent on the order in which the remaining programs should be implemented. However, it does state that programs should be phased-in in a way that is affordable to the State budget. While not explicitly mentioned in the SJSN Law, it also must be affordable to workers and employers and not have a negative impact on Indonesia's labor market and macroeconomic development. The law also requires that the legal structure of the four administrators, collectively referred to as the BPJS, be changed within five years following date of enactment (i.e., by October 2009) so they are not-for-profit institutions with a fiduciary obligation to members.

The first step in the design process is to develop consensus on a strategic framework for the SJSN programs. In the second half of 2008, we interviewed major stakeholders in order to better understand the areas of agreement and differences of opinion regarding the design, administration and governance of the SJSN programs. We then used this input to prepare a strategic plan for SJSN design and implementation.

Part 1 of this report outlines our strategic vision for the implementation of the national social insurance programs required by the SJSN Law and the Constitution. It reflects the input we received from stakeholders, prior technical and policy studies by the Asian Development Bank and other international donors and best international practice. However, it presents a strategic plan that is unique to Indonesia's demographics, history, culture, existing programs and institutions, and level of macroeconomic development. While the experience and systems in other countries are important, Indonesia needs a unique system designed for its own circumstances.

2. PHILOSOPHY

It is clear that Indonesia cannot afford for the SJSN social insurance programs to provide all required protection to the entire population. The cost to workers, employers and the State budget would be too high. Only modest SJSN programs are affordable. It is important to keep the contributions from employers, workers, the informal sector and

the State budget to a level that is clearly affordable, even if the economy grows at only a relatively modest pace.

Very rich SJSN programs would also be inconsistent with Indonesia's social protection philosophy. Most workers currently have minimal social protection and the primary source of support for the elderly is the extended family. The SJSN programs are intended to provide basic universal coverage for all Indonesian workers but it is not intended to fully replace the family support system. Indonesia also has an extensive system of private voluntary insurance and pensions and the SJSN program is not intended to crowd-out or replace these private programs. They will continue to have an important role in Indonesia's new system of social protection.

The SJSN programs will provide a base level of protection to all Indonesians. It is important for the military, civil servants, the formal sector and the informal sector to all ultimately participate in the SJSN programs. For some groups of workers, the SJSN benefits alone will be insufficient. For these groups, benefits can be supplemented outside the SJSN system through additional government programs or through the private sector as shown in the diagram on the right.
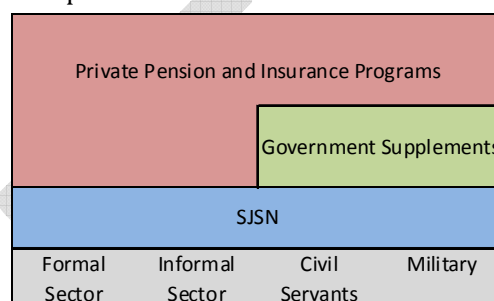
It is also important to note that the goal of the SJSN programs is not to reduce benefits for the military or civil servants, but rather to provide a base level of protection to all Indonesians and facilitate labor market mobility. Supplemental pension programs for civil servants and the military will need to be provided from the State budget so the sum of SJSN and non-SJSN programs together provides the desired level of benefits. Those who want additional coverage can also purchase it from private insurance companies, by investing in voluntary private pension savings programs or through individual savings. As part of the SJSN program implementation, the government will work with employers and labor unions to harmonize existing and SJSN program benefits.

3. ROLE OF ADMINISTRATORS

The SJSN Law states that the current perseros (PT Taspen, PT Asabri, PT Jamsostek and PT Askes) will be collectively referred to as the administrators (BPJS) of the new SJSN programs, but it doesn't specify the precise role of each of those administrators.   Each of these organizations currently serves different labor market segments (see chart).   The Jamkesmas health program for the poorest members of the informal sector is administered by the Ministry of Health.
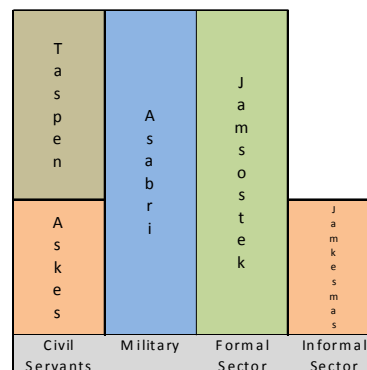
From a technical perspective, there is little reason to have four separate administrators; only one or two are needed to efficiently manage the SJSN programs. The

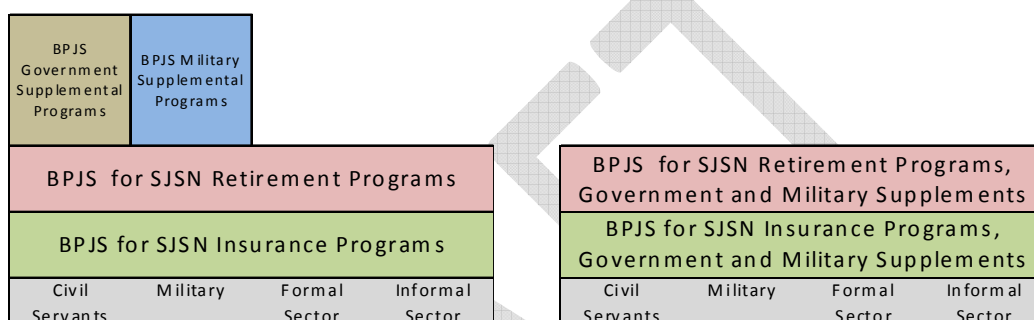administrators should also be organized by social protection program and not by labor market segment. This way the structure of the BPJS will be harmonized with the new SJSN structure.

In the short-run, there may be political and technical difficulties moving quickly away from the current structure. Consequently, a detailed plan is needed to move from the current structure to a more appropriate structure with fewer administrators and organized by social insurance programs. The logical first program for this change in structure is the SJSN health insurance program which should be consolidated under Askes.

The charts below illustrate two options that should be considered by the government. Other options are possible and are discussed in more detail in our December 2008 draft report entitled, "Responsibilities of the BPJS under the SJSN law."

BPJS Government Supplemental Programs	BPJS Military Supplemental Programs		
BPJS for SJSN Retirement Programs			
BPJS for SJSN Insurance Programs			
Civil Servants	Military	Formal Sector	Informal Sector

BPJS for SJSN Retirement Programs, Government and Military Supplements			
BPJS for SJSN Insurance Programs, Government and Military Supplements			
Civil Servants	Military	Formal Sector	Informal Sector

Under the first option, one administrator would be responsible for the SJSN retirement programs (pension and old-age savings) for all workers while another would be responsible for the SJSN insurance programs (health, workers compensation and death benefits). There could also be just one administrator responsible for all five SJSN programs. Other administrators – possibly Taspen and Asabri – would remain responsible for non-SJSN supplemental benefits to civil servants and the military. Under this option, Taspen and Asabri could remain perseros since they are not administering SJSN benefits, but the other administrators would need to convert to a new legal form.

The second option is similar to the first except that the two SJSN administrators are also responsible for the administration of any government-sponsored supplemental non-SJSN programs. The second arrangement could be viewed as more complex because one administrator is responsible for both SJSN and non-SJSN programs. However, this structure might also make it simpler to coordinate the SJSN and supplemental benefits payable to civil servants and the military.

The political problem with both of these structures is that they eliminate or reduce the role of one or more of the existing perseros. Another general problem associated with most national social insurance programs is they create monopolies. There is one quasi-governmental administrator for each program and there tends to be little to no competition. Consequently, it is difficult to provide the administrators with incentives to provide high quality services and control costs.

A more radical option could be considered that addresses these concerns. Under this arrangement, each of the four current administrators would be permitted to offer any or

WORKERS SELECT DESIRED BPJS FOR EACH PROGRAM			
Death			
Worker Accident			
Health Insurance			
Old-Age Savings			
Pensions			
Civil Servants	Military	Formal Sector	Informal Sector

all of the five SJSN social insurance programs. Workers would have a choice of administrators for the various social insurance programs and could be permitted to periodically switch between administrators if they are dissatisfied with performance or service. This option would stop the political jockeying among existing administrators regarding who will administer what programs. If both Askes and Jamsostek want to offer health insurance programs, for example, they could both do so. Certainly Indonesia is large enough to support more than one administrator for each program.

In theory, this arrangement would create competition and incentives for good service and low costs. In practice, it is unclear whether it would result in reduced administrative costs or whether marketing and advertising costs would offset any savings from operational efficiency. It would also make the system more complex, require more diligence and understanding from workers, and would be more expensive for the government to supervise and control. An initial and ongoing enrollment process would be needed as well as a transfer program. Rules and regulations would also be needed for the situation where workers fail to make a required election. This would be very similar to the process already followed throughout Latin America and Eastern Europe for their mandatory private pension systems, so on the positive side, the issues and procedures are well-known.

Under the simplest possible implementation of this concept, all administrators would be required to offer the same benefit package at the same price. Competition would be primarily based on service quality and performance. The next level of complexity would be to allow administrators to also compete on price while maintaining the same standard benefit package. An even more complex structure would be to allow variations in benefits and pricing, subject to a minimum benefits package.

4. LEGAL STRUCTURE OF ADMINISTRATORS

One of the issues that must be addressed most quickly is the change in the legal structure of the current perseros and the overall governance structure of the entire SJSN system. According to the SJSN law, a new legal structure must be put in place by October 2009.

The current persero structure is not consistent with the SJSN law. The law requires a legal structure based on the concept of social security trust funds managed by the BPJS on a not-for-profit basis and in the best interests of members. Consequently, the BPJS legal structure should be based on the following principles:

- The BPJS must be not-for-profit. It must not be legally required to pay taxes or dividends to the government or any other shareholder

- The contributions to the SJSN social insurance funds must be used only for the purpose of paying benefits to participants and meeting the reasonable and legitimate administrative expenses of the BPJS

- The fiduciary obligation of the BPJS directors must be to participants only. Management should be responsible for the efficient use of contributions to pay benefits and administrative expenses

- All decisions must be made in the best interests of participants

- Appointments of directors and the oversight board members must be based on a "fit and proper" test that assures everyone has proper education, background and experience for the position to which they are appointed

- Job descriptions and performance benchmarks are needed for all directors. The allocation of responsibilities among directors must be clear. Performance must be reviewed periodically and those not meeting goals and objectives must be replaced.

Unfortunately, it may not be unrealistic to assume this new model can be put in place in its entirety prior to October 2009, the date the current structure ceases to exist under the SJSN law. As in other areas of the SJSN implementation, it may be necessary to have an interim legal structure for the short-term and a final legal structure for the longer-term.

The first step is to adopt an interim legal structure for the BPJS meeting the conditions outlined above. A new law will likely have to be adopted by Parliament to implement the desired structure. The government is considering several possible forms including a not-for-profit persero or a quasi-governmental not-for-profit institution.

If a not-for-profit persero structure is selected as the interim legal form, then it is important to clearly delineate the respective responsibilities of the DJSN and the Ministry of State-Owned Enterprises (BUMN). As will be discussed in the more detail in the next section, the DJSN should have ultimate final authority over all aspects of the SJSN system and BPJS operations. While BUMN can continue to have an important role, it should be subordinate to the Council in order to be consistent with the SJSN law. Unfortunately, such an arrangement would likely violate Law No. 40 of 2007, the limited liability company law, so the not-for-profit persero structure may not be a viable option.

Under the current structure, BUMN has substantial control. They appoint and remove management and oversight commission members. They own 100% of the stock in the administrators and therefore control the general meeting of shareholders (GMS). Such control by BUMN does not have a logical basis under the SJSN law since the administrators are not-for-profit, oversight of BPJS functions rests with the DJSN and the BPJS must act in the best interests of members rather than in the best interests of the government. A more complete discussion of the structure of a BPJS law and the governance options is contained in a separate memorandum.

The SJSN law also requires the assets of participants to be legally segregated from the assets of the BPJS. Participant's assets will be held in a "trust" that is a separate legal entity from the BPJS. This structure provides for increased transparency, explicit fees for the services of the administrator and protection of participant assets against the claims of BPJS creditors.

No trust fund law exists in Indonesia today. However, trust funds exist in other civil code countries and a quasi-trust structure already exists for Indonesia's mutual funds and private pension funds. Consequently, it is feasible to base the long-term structure of the social insurance system on this model and it is the best legal structure for the SJSN system.

5. ROLE OF SOCIAL SECURITY COUNCIL (DJSN)

The SJSN law creates a new and important entity referred to as the Social Security Council or DJSN. The 15-member Council is composed of representatives of the government, employers, and labor unions, and also includes outside experts. The members are appointed by the President. The Council is supported by a Secretariat that is responsible for research and analysis. The Secretary of the Council Secretariat and its staff will be civil servants. The Council also has the ability to hire outside consultants as needed.

Under the SJSN law, the DJSN plays a critical role in the overall governance of the social insurance system. It is a policy-making body responsible for strategic and political aspects of system operations. It also is responsible for oversight of the entire social insurance system. It functions as a "trustee" and represents and protects the interests of all system members.

The Council also has an important role in reviewing the performance of the BPJS. It must assure the administrators operate in accordance with the law, manage social insurance programs in the best interests of members and run the system efficiently. Once the new legal structure of the BPJS is finalized, a law will be needed that clearly outlines the new legal and governance structure for the SJSN system. Key governance elements to be addressed in that law include:

- The role of the DJSN and various government Ministries in the governance process

- The process for appointing and removing the BPJS Directors and Oversight Board

- The precise powers, roles and responsibilities of the DJSN, Directors and Oversight Board

- Organization responsible for supervision and control of BPJS technical operations.

This should differ significantly from the current system. The creation of DJSN and the change in the legal structure of BPJS to a not-for-profit trust fund paradigm requires a change in the governance structure. The current system is based on social insurance programs that differ by labor market segment and are administered by for-profit perseros owned by the government through the Ministry of State-Owned Enterprises. Under the new structure, the benefit programs are the same for all labor market segments, administrators will ultimately be organized by social insurance program rather than by labor market segments and the administrators will be not-for-profit with a fiduciary duty to members.

6. SUPERVISION AND CONTROL OF BPJS

A proper system of governance is critical to the safety of the SJSN system. One aspect of the governance system is technical supervision of BPJS operations. The performance of BPJS management must be reviewed and assessed on a regular basis to assure it is functioning in accordance with the law and is operating efficiently. The DJSN is responsible for general oversight of the BPJS but does not have the technical expertise required for day-to-day supervision and control of BPJS operations. Consequently, a

technical supervisor is needed. There must an arms-length relationship between this supervisor and BPJS management for the governance system to function effectively. Under the current system, supervisory responsibility is spread across a number of different ministries. For the SJSN system, it would be best if technical supervisory responsibility was consolidated in one organization to assure consistent rules and procedures across all administrators and social insurance programs.

To accomplish these objectives, two possible structures for technical supervision of the SJSN system should be considered. Under either option, the DJSN remains responsible for policy and is ultimately responsible for assuring the protection of the collective and individual rights of participants.
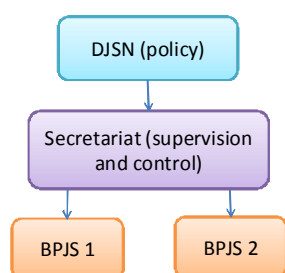
Under the first option, the Secretariat of the Council would have primary responsibility for technical oversight of the operations of the BPJS. The Council would be responsible for policy while the Secretariat would be composed of technical experts with the proper education, training and experience to supervise and control BPJS operations. Since the Secretariat will be staffed by civil servants, it should also have the necessary independence to supervise and control the BPJS with limited political interference from DJSN or others. The primary problem with this approach is the salary scale for Secretariat members. The salaries are unlikely to be attractive to financial professional with the proper education and training for these positions.

The second option is to leverage the existing supervisory and control mechanisms that already exist for private pension funds and insurance companies in Bapepam LK rather than duplicating all those functions within the Secretariat. This same expertise could be used to supervise the BPJS as well.

Under this option, the Secretariat staff would be smaller, but Bapepam LK staff would need to be increased to account for its new responsibilities. Supervision would also be easier if a separate "SJSN Bureau" was created within Bapepam LK to keep private sector and SJSN supervision separated. This structure is more likely to assure supervisor independence from BPJS management. Bapepam LK also has the ability to pay higher salaries than the Secretariat and is more likely to be able to attract qualified professionals. It also has a staff of experienced professionals that can be used to get the new supervisory structure functioning quickly.
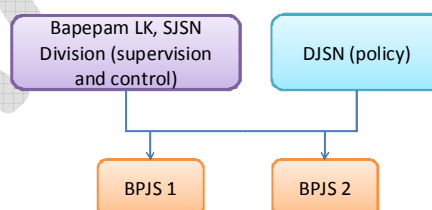
In the early stages of SJSN, Bapepam LK will most likely need to serve as the supervisory agency since the staffing and the salaries of Secretariat staff are limited. However, the government could transition these responsibilities from Bapepam LK to the Secretariat or another organization over time.

7. SJSN PROGRAM COSTS

The introduction of the SJSN programs should not undermine the regional and international competitiveness of Indonesian businesses and the programs should not increase unemployment or discourage the creation of new jobs. The programs not impose an unreasonable financial burden on employers and workers. Indonesia has many low-paid workers and they must be able to afford the reduction in take-home pay needed to finance the SJSN programs.

Subject to further analysis, the maximum affordable burden for formal sector employers and workers combined for the SJSN programs, including the cost of any reformed severance pay program under Labor Law No. 13 is about 20% of covered wages. This is lower than the cost of the current programs provided to the formal sector by Jamsostek plus the cost of the current severance pay program under Labor Law No. 13. It is also lower than the cost of similar programs in neighboring countries. An approximate allocation of the total cost by program is shown below.

Program	Cost as % of Covered Wages
Health	4.0%-6.0%
Worker Accident	0.25% - 0.5%
Pension	5.0% - 6%
Old-Age Savings	3.0% -4%
Death Benefits	0.25% to 0.5%
Total for SJSN Benefits	**12.5% - 17%**
Labor Law No. 13	3.0% - 5.0%
Grand Total	**15.5% - 22%**

These costs assume the severance pay program is modified when the SJSN pension program is introduced. The severance pay program today functions as both an unemployment insurance program and a pension program. Consequently, severance pay program benefits should be reduced by the value of the SJSN pension program once it is introduced. Consideration should be given to switching the severance pay program to a defined contribution basis as well.

The cost of Labor Law No. 13, the SJSN worker accident insurance program and the SJSN death benefit program should be fully paid by the employer. The costs for other programs should be shared. In most of the world, workers and employers split the costs evenly. Using the midpoint of each range above, the employer will contribute 11.75% and workers will contribute 7.0% of wages for the SJSN and reformed severance pay programs for a total of 18.75%.

The cost of the SJSN pension program should be less than 5-6% initially since no pension benefits are payable unless 15 years of contributions have been made. However, the cost will increase over time as the system matures. The pension program should be financed on a pay-as-you-go basis for at least the first 20-30 years of the system. Otherwise very large unallocated reserves will be accumulated that would have to be properly protected and managed. Experience in other developing countries with large pension reserves shows that they are often used to finance unaffordable increases in benefit levels or diverted to other uses.

For the informal sector, workers are essentially self-employed and are therefore are both the employer and the worker. This means informal sector workers pay all the social insurance contributions themselves while formal sector workers share this

burden with their employer. It can be argued, however, that formal sector workers effectively pay the full contribution as well since wages are lower than they otherwise would have been if employers had no contribution obligation.

The same definition of wages should be used for purposes of calculating contributions and benefits under all SJSN programs. The system will function best if total wages are used as the basis for the calculation of contributions and benefits. This definition should include direct pay plus allowances and the same formula should be applied to all workers whether civil servants, military or formal sector. However, in order to limit the contributions and benefits from the SJSN programs a wage cap should be used. The wage cap is the maximum wages on which contributions and benefits are calculated. It is typically between 1.5 and 2.5 times the national average wage and normally only affects the highest 5% to 10% of workers by pay.

Another important issue is calculation of wages for the informal sector. Given the nature of informal sector employment, the lack of an employer-employee relationship, the seasonal nature of wages and the fluctuating level of wages from one month to the next, it would be very difficult to accurately calculate wages and contributions. Instead, a simplified system of determining wages should be used. Informal sector workers could pay a flat amount in rupiah or contributions could be based on an assumed wage level. It could be the average wage for the entire informal sector, workers might be able to select from one of several assumed average wage levels, or the minimum wage by region might be used. Contributions and benefits would then be based on this assumed wage.

Each of the SJSN programs will be designed so its total cost fits within these guidelines. It is better to start with program costs and then determine the benefits than to start with target benefits and agree to pay the resulting costs. It is also better to start with modest benefits and increase them in the future if Indonesia experiences rapid economic growth rather than start with high benefits and reduce them if experience is worse than expected.

8. SJSN HEALTH BENEFITS

Given the current state of the Indonesian economy and the provisions of Law No. 40, the health program will be implemented first and eventually cover all Indonesians.

- The Jamkesmas program currently covers the poorest 70 million Indonesians and is financed by the government budget.

- The military and civil servants have their own health program

- Some formal sector workers are covered by a health program provided by Jamsostek, while others are covered by private insurance programs established by employers who chose to opt-out of Jamsostek's plan

- A portion of the formal sector is not covered at all because these employers chose to evade the Jamsostek contribution requirements.

Since employers have the right to opt-out of the Jamsostek health program (any many do), the Jamsostek program is of insufficient size to provide an effective and efficient

health insurance program. Consequently, the existing Jamsostek health insurance program should be terminated when SJSN health insurance is introduced (unless the option of having competing social insurance funds is selected).

The SJSN law seeks to change the structure of the health insurance program in several significant ways.

- There will be a single program with uniform provisions covering all Indonesians

- There will be no opt-out from the SJSN program

- The contribution rate will be a percent of wages for the formal sector and will be shared between workers and employers

- The contribution rate for the informal sector can be either a percent of wages or a flat amount in rupiah

- Contributions for the poor will be made by the government.

If the health program will be managed by a single administrator, it makes sense for Askes to assume responsibility for managing this program nationwide. They already manage the program for civil servants and previously managed the Askeskin (now Jamkesmas) program for the poor.

Another possibility, though inconsistent with the SJSN law, is to have social health insurance for the formal sector and tax-financed health insurance for the informal sector and the poor.   The advantage of this approach is it eliminates the need to collect contributions from the informal sector and for the government to identify and pay contributions to the health insurance fund for the poor.

Several important issues must also be addressed before a full nationwide health insurance program can begin:

- All Social Individual Numbers must be issued

- A method of collecting and enforcing payment of health insurance contributions from both the formal and informal sectors must be developed, tested and implemented

- Contractual arrangements between the BPJS and regional providers of health care must be put in place

- A system of governance, including methods for accreditation, tracking of expenditures and outcomes and quality control must be established.

Careful actuarial analysis must also be completed to make sure benefits and contributions are directly related to each other. A list of potential covered health services must be established and priced. Then the government must decide which services will be covered by the SJSN program and which will be left to supplemental private health insurance programs. Cost-sharing arrangements (i.e., co payment rates) must also be established for various categories of medical services. It is very important to make sure the cost of the health program is tightly controlled and to estimate future cost increases due to changes in demographics, improvements in public health facilities

and changes in utilization patterns. Otherwise program costs will likely increase sharply over time and crowd-out room for the other four social insurance programs.

9. WORK ACCIDENT INSURANCE

Next in order of importance, is implementation of the work accident program. This protects workers against financial losses due to work accidents and illnesses, including required medical treatment and lost income due to permanent disability or death. This program will be financed entirely be employers and the size of the required premiums should vary by industry and worker classification. Premiums should also vary with the claims experience of individual employers. This will provide employers with an incentive to increase workplace safety and decrease workers' compensation costs.

It makes sense to keep the existing design of the workers compensation program. However, the cost of the program should be reviewed as current contribution levels appear to be excessive, there can be no cross-subsidies among SJSN programs, and the SJSN programs should be not-for-profit. It seems illogical to include the informal sector in this program, as it depends on the existence of an employer-worker relationship. Since the majority of benefits paid under the program are for medical benefits, it would be logical to include this program under the same administrator as the health program.

10. PENSION PROGRAM

Next in importance are the pension and old-age savings programs. Both programs are necessary but the pension program is of greater importance because it provides workers with a guaranteed source of income for life. The pension income cannot be quickly squandered like the lump-sum benefit payable from the old-age savings program.

One of the most important factors in determining the cost and financial sustainability of the pension program is the retirement age, the age when lifetime benefit payments begins. Although the current standard retirement age is 56, we believe the standard retirement age for the SJSN retirement programs should be 60. If the retirement age is not increased, either the cost of the program will be too high or the affordable level of benefits will be too low to be meaningful. The retirement age should be further increased as life expectancy increases in order to maintain the financial stability of the program.

Some professions may require workers to retire earlier than age 60 due to rapid deterioration of required skills or the arduous nature of the job. If workers in these professions are permitted to retire earlier, the cost of benefits from the stipulated retirement age until the standard retirement age of 60 should be paid by the employer. The cost of exhausting human capital more quickly should be built into the price of products offered by those sectors of the economy.

The SJSN law requires pension benefits to be determined on a defined benefit basis and be sufficient for the participant to meet basic needs. The elucidation indicates a formula based on last wage and years of contributions should be used to calculate benefits. We believe pension benefits should not be based solely on last wage. Instead, benefits should be calculated based on the average wage over an extended period of time. Most social security systems used indexed career average wages. This means wages in all

years are first indexed for increases in the national average wage from the date at which they were earned to retirement date. Then they are averaged. A minimum benefit is also common to assure the lowest paid receive an adequate benefit.

In order to keep the cost of the pension program affordable and leave room for the continuing development of private pension plans, benefit levels will need to be kept modest. The government should continue to encourage voluntary occupational and individual savings programs. The target replacement ratio from the SJSN pension program should be limited to about 20% to 30% of average wages. Any additional amounts needed would come from the old-age savings program, private pension programs, family, charity or other sources.

Another issue that must be addressed is the long time period required to earn a pension benefit. Contributions must be made for a minimum of 15 years to get a pension benefit. Those who reach retirement age and don't meet this criterion receive a return of contributions only. There are several implications of this provision.

- Workers who are less than 15 years from retirement age at the time the SJSN pension program begins (over age 45 if the retirement age is 60) will not be eligible for a pension benefit

- Many other older workers will receive some pension benefit, but not a benefit based on all the years in their working career

- Those already over age 60 on the effective date will receive no benefit from the SJSN pension system.

The government should grant credit for some years of past service for older active workers so they are eligible for a pension benefit at retirement rather than just a return of contributions. The government should also pay a small "social pension" under this program to existing elderly. The cost of this provision will be small since the percent of the population that is elderly is low at this time. This will help generate broad support for the pension system and will result in a better balance between contributions and benefits in the early years of the system.

Finally, benefits should be indexed after retirement to prevent erosion of value due to inflation. Most social security systems index pension benefits to some measure of inflation such as changes in the consumer price index.

11.   OLD-AGE SAVINGS PROGRAM

The most fundamental decision regarding the old-age savings program is the required contribution percentage. This will determine the likely size of the lump-sum available at retirement age. It will also determine the size of the old-age savings benefit relative to the expected pension benefit. Since the old-age savings program is less important that the pension program, the size of the old-age savings contribution should be kept low, especially in the early years of the system. Consequently, the initial size of the old-age savings contribution rate should not exceed 3 to 4%.

The formal sector currently has an old-age savings program (JHT) under the Jamsostek law. The contribution rate is 5.7% but the account balance at retirement is quite low because the rate of investment return is low, administrative expenses are high and most

of the money is withdrawn prior to retirement age. A 3% contribution rate with an improved investment return and lower administrative costs should provide a better benefit than the current JHT program. The civil servant THT program is not a defined contribution program. It is a defined benefit endowment program with a 3.25% contribution rate. This program is not financially stable and the government should convert it to a defined contribution program.

Another important issue is the extent to which the account balance in the old-age savings program can be withdrawn prior to retirement age. Under the Jamsostek JHT program, funds are not supposed to be withdrawn prior to retirement unless the worker is unemployed for 6 months or more, or moves from a company covered by the Jamsostek program to one that is not required to participate in Jamsostek. In practice, the account balance is withdrawn almost any time there is a change in employment. In some cases the worker moves from one covered employer to another, but the new employer is evading the Jamsostek participation requirements. This also results in account balances being paid out more frequently than intended. The end result is very low account balances at retirement. In actuality, JHT functions more like a short-term savings program rather than a retirement savings program.

The SJSN old-age savings program is primarily designed to accumulate retirement savings. Law No. 40 does allow a portion of the account balance to be withdrawn following 10 years of participation. However the elucidation indicates that this amount should be distributed to help the participant prepare for retirement. In order for the old-age savings program to accomplish its stated objective, it is very important to limit pre-retirement withdrawals from the account. Only a small percent of the account balance should be permitted to be withdrawn and only due to severe financial hardship.

12.   ASSET MANAGEMENT IN THE OLD-AGE SAVINGS PROGRAM

A governance process for asset management that meets international standards must be put in place in order to maximize benefits for participants. The size of the lump-sum available at retirement will depend to a great extent on the rate of return on invested assets. Even a 1% annual difference in rate of return on assets can reduce the lump-sum available at retirement by 15% to 20%.

For this reason, it is important to have a sensible and complete investment policy statement, a properly conducted asset allocation study to determine the amounts that should be invested in different asset classes and a prudent process for selecting the individual securities to be purchased. There must also be proper procedures for the establishment of performance benchmarks, periodic performance reviews and the replacement of those individuals or organizations that are not meeting applicable standards.

Under the SJSN law, the DJSN is responsible for the establishment of investment policy. It should be required to develop a comprehensive investment policy statement meeting international standards. External consultants should be used for this process.

The government is considering three options for asset management under the SJSN old-age savings program. Under all of the options, the DJSN would be responsible for development of the investment policy statement.

- Asset allocation and investment decisions are made by BPJS staff. The establishment of performance benchmarks, etc. would be done by the DJSN and/or the supervisory agency and they would have the authority to order the replacement of the investment officers of the BPJS if agreed-upon goals are not met.

- The BPJS would use a tender process to outsource asset management to one or more private sector firms. The BPJS would establish performance benchmarks, conduct performance reviews and replace managers who do not meet their objectives.

- The BPJS would license private asset managers to establish private pension funds. The private asset managers would be responsible for the asset allocation and the investment decisions. Individuals would select among licensed private asset managers.

These three possibilities are summarized in the table below.

	Option 1	Option 2	Option 3
Investment Policy	DJSN	DJSN	DJSN
Asset Allocation	BPJS	BPJS	Private asset managers
Asset Management	BPJS	Private asset managers	Private asset managers
Manager Licensing/ Selection	Not applicable	BPJS	BPJS
Number of Asset Managers	1	Several	Mutiple
Number of Pension Funds	1	1	Multiple
Pension Fund Selection	No options	No options	Individuals or employers

We believe private asset management is likely to produce better investment results for workers and limit political interference in the investment process. System governance would also be improved because it would be easier to replace non-performing asset managers. It is easier to fire a private asset manager for non-performance than to order the replacement of BPJS investment staff. For these reasons, we recommend either option 2 or 3 be implemented for the SJSN old-age savings program.

13. DEATH BENEFIT PROGRAM

The purpose of the death benefit program is to provide a modest lump-sum benefit to the beneficiaries of the deceased. At a minimum, this should be sufficient to cover funeral expenses. It could also provide the family of the deceased with an additional lump-sum for other needs. Further discussion is necessary to clarify the purpose of the SJSN death benefit and determine the amount. However, this benefit is not intended to provide the beneficiaries with income replacement. Any survivor income benefit will be paid under the SJSN pension program, which provides for old-age, disability and survivor annuity benefits.

Jamsostek currently provides a flat benefit of 12 million Rp. for death due to sickness, while the worker's compensation program benefit is a lump-sum equal to 49 monthly wages. Since SJSN contributions are related to wages, it is logical to provide a SJSN death benefit equal to a multiple of salary as well. The benefit from this program should be payable for non-work related deaths only and should be paid regardless of whether death is due to accident or sickness. Benefits for work-related accidents and sickness should be payable from the SJSN workers compensation program.

14. HARMONIZATION WITH EXISTING PROGRAMS

As SJSN programs are introduced, corresponding changes will need to be made in the legislation governing existing benefit programs. The SJSN programs are not intended to be in addition to already existing benefits for civil servants, the military and the formal and informal sectors. Rather, their introduction will require a change in the level and/or design of existing benefits programs.

For civil servants, the SJSN introduction is an opportunity to re-think the appropriate level of benefits and design of the pension and THT programs. Benefits payable to all civil servants – current workers and future hires – should be the same. The current pension program is financed from the state budget on a pay-as-you-go basis and recent analysis indicates the program is financially sustainable. At a minimum, the level of pension benefits payable from the current pension program should be reduced by the amount of the SJSN pension benefit (referred to as a carve-out approach). This way, the sum of the SJSN pension benefit plus the pension payable from the budget will be the same as it is today. However, further changes could also be considered, such as using total wages to calculate benefits, calculating average wages over more than one year, introducing a wage cap and increasing the standard retirement age.

On the other hand, the THT program is not financially viable. It provides an endowment benefit based on last pay and liabilities increase in proportion to pay each time changes are made in the Presidential matrix. The program is financed by worker contributions as a percent of each year's pay and is inadequate to pay expected future benefits. Past service benefits have already been frozen once and the government is currently making amortization payments over 15 years to stabilize program finances. This program needs to be changed to a defined contribution basis prospectively to make it financially sustainable.

Benefits for formal sector workers should similarly be adjusted. Jamsostek health insurance should be discontinued once the SJSN health program is introduced and all formal sector workers should be required to participate in the SJSN health program. The opt-out provision must be repealed to avoid financial problems due to anti-selection. The Jamsostek JHT program should also be replaced prospectively by the SJSN old-age savings program. When the SJSN pension program is introduced, the severance pay program under Labor Law No. 13 should also be amended. Currently the severance pay program is being used to provide unemployment compensation and a lump-sum pension benefit. Once the SJSN pension program is introduced, the severance pay program will be needed for unemployment compensation only.

The simplest way to integrate the severance pay and SJSN pension programs is to use the carve-out approach and offset the severance benefits payable under Labor Law #13 by the value of the SJSN pension benefit. The Labor Law already allows offsets for

employer-provided pension benefits so the concept could be extended to also offset the SJSN pension benefit. Then the sum of the benefits under the two programs will be equal to the benefit payable under the severance pay program today. In addition, serious consideration should be given to changing the severance pay program to an equivalent defined contribution program. In a separate memorandum, we have analyzed the cost of financing the current severance program benefits on a defined contribution basis. This structure has advantages for workers and employers. It gives greater benefit security to workers and financial predictability to employers.

Another harmonization issue is dealing with workers covered by existing occupational pension programs. Those employers who have established such programs may not want to make required contributions to the SJSN pension program and continue funding their occupational plans..

It would be desirable to allow employers with established occupational pension programs to use their contributions to these programs to satisfy their SJSN pension obligation. If this is permitted, complex rules would be needed to assure portability of benefits when workers move from an employer with an occupational pension plan to one without such a plan and vice versa.

This will require transfers of assets and liabilities between the SJSN program and the occupational pension programs and will be complex to administer. Otherwise, workers who changes jobs would not receive credit under the SJSN pension program for the years the employer contributed to its occupational pension program. They would get a benefit from the occupational program instead. However, the benefit payable from the occupational program would be based on final pay at the time the worker terminated employment with that employer while the benefit payable from the SJSN pension program would be based on final pay at retirement. For this reason, the worker's benefit from the SJSN pension and occupational programs combined could be less than what the worker would have received if all years of service were credited under the SJSN pension program.

On balance, it seems simpler to require all employers to contribute to the SJSN pension program even if they have an occupational pension program in place. Those employers would then have the option of maintaining their existing occupational pension plan, reducing the benefits under the occupational plan or terminating the plan and paying accrued benefits through date of plan termination to workers at retirement.

15.   EXTENSION OF COVERAGE TO THE INFORMAL SECTOR

The SJSN law requires all programs to be available to the informal sector, though it recognizes the need to phase-in these programs over time. A phase-in period is necessary for both financial and administrative reasons. The cost to the government to finance benefits for the poor must be properly managed. In addition, an efficient method for calculating and collecting data and contributions and full implementation of the social individual number (SIN) program are required before coverage can be extended to the informal sector.

Since the SJSN program will provide basic benefits to all Indonesians, it is important for the program design to be the same for everyone. The informal sector should receive the same benefits as the formal sector. Note that programs providing benefits to the informal sector or the poor will need to be adjusted when the SJSN programs are introduced. For example, fuel subsidies, conditional and unconditional cash transfer payments, rice subsidies and other programs designed specifically for the poor will need to be harmonized with SJSN programs once they are available to the informal sector.

The most important program for the poor, and the first that should be extended to the informal sector, is health insurance. The Jamkesmas program already provides coverage to the poorest 70 million Indonesians but more than half of all Indonesian still do not have health insurance. Jamkesmas is financed from tax revenues; it is not social health insurance. Consequently, either the structure of the Jamkesmas program will need to be modified to fit the design and financing mechanisms of the new SJSN health program or the SJSN law will need to be modified to provide tax-financed health benefits for the informal sector. If the latter method is chosen, this will represent a significant change in the social protection philosophy contained in the SJSN law and therefore is not recommended.

The pension and old-age savings programs should initially apply to the formal sector only. Both programs should be extended to the informal sector when administrative prerequisites have been met and the programs are affordable to the State budget. In the meantime, the old-age savings program could be introduced on a voluntary basis for the informal sector.

16.   CONTRIBUTION AND DATA COLLECTION

One of the most important administrative issues that must be addressed is the collection of individual data and contributions from both the formal and informal sectors and enforcement of the payment obligation. If contributions are not collected effectively and at a consistent rate from both the formal and informal sectors there could be significant cross-subsidies. This cannot be permitted if the SJSN system is to function effectively and enjoy broad support from all participants.

It doesn't make sense to have each BPJS collect contributions and data from all workers, especially if there are four administrators. This is particularly true if the BPJS are organized by type of program rather than by labor market segments. It will result in too much duplication of personnel and administrative systems and employers will not appreciate having to give almost identical information to and being audited by four different organizations each year.

Collecting information from civil servants or the military is relatively easy because there is only one employer. However, collecting from thousands of employers and from millions of informal sector workers is a much more complex task. Maximum efficiency will be achieved if one organization is responsible for collection of contributions and data and distribution of the appropriate information and money to each BPJS.

The contribution and data collection agency must develop an effective paradigm to collect contributions and information from both sectors. For the formal sector, this will require updated IT systems, new business processes and giving enforcement authority to the collection agency. The current system of reliance on labor inspectors to enforce contribution payments is not effective. They have many other responsibilities, don't

make social insurance collections a priority and they now report to regional governors rather than to the Ministry of Manpower.

For the informal sector, effective collection will require full implementation of the Single Identification Number (SIN) and an effective contribution collection mechanism. Collection could be done through the village structure, by various occupational associations, in conjunction with the payments for basic utilities, etc. Regardless of the ultimate decision, the system must be pilot-tested and implemented before the informal sector can be included in the SJSN programs.

17.   DEFINITION OF THE POOR

The number of poor and the design of the SJSN social insurance programs will determine the cost of these programs to the State budget. The number of poor, however defined, will tend to fluctuate, perhaps substantially, with economic conditions. In the event of a financial crisis, many Indonesians living just above the poverty line may drop below and substantially impact the cost to the State budget. For all these reasons, it is necessary for various government institutions to work together to define the number of poor in a way that is affordable to the State budget even under poor economic conditions while still meeting the government's obligation under the SJSN law to pay for those who cannot afford to pay for themselves.

One problem with the SJSN law is its use of a "bright line" test to determine who is poor. Those who are defined as poor have all their contributions paid by the government, while those who are not must pay all contributions themselves. This rule is not equitable. For example, assume anyone earning less than 1 million rupiah per month is considered poor while anyone earning more is not poor and the cost of the SJSN programs is 20% of wages. For someone earning 999,999 rupiah, the government makes all contributions to the SJSN social insurance fund and the worker keeps his or her entire earnings. However, someone earning 1,000,000 rupiah would have to contribute 200,000 to the SJSN programs and would end up with take-home pay of just 800,000 rupiah. Clearly, this is not a reasonable result and the government needs to design a fairer subsidy system.

The program should be designed so the percentage of the contributions paid by the government is not just 0% or 100%. Rather, the percent should vary, moving from 0% to 100% as income declines on a sliding scale. While this system will be more complex to administer, it is more equitable to informal sector workers, and it will also smooth the change in the amount paid by the State budget in response to changing macroeconomic conditions. Under the bright line method, if the number considered poor doubles, the cost to the State budget would also double. Under a sliding scale, the impact would be much less.

18.   CONCLUSION

Part 1 of this report outlines our strategic vision for the design, governance structure and administration of the SJSN social insurance programs. The SJSN programs will eventually provide a basic level of social protection for all Indonesians and will supplement the care currently provided by families and the benefits from targeted social

assistance programs. Workers will also be able to purchase supplemental protection from the private sector.

Programs will need to be phased-in carefully in order to make sure they are affordable to the State budget and don't negatively affect the competitiveness of Indonesian businesses. Necessary infrastructure, IT systems and institutions must also be developed before the programs can begin. Proper transparency and accountability and efficient administration are also needed for the system to be successful.

Among the tasks for 2009 for the SJSN implementation are:

- Changes in the legal structure of the BPJS

- Determination of the role of the existing social insurance administrators

- Improvements in the overall governance structure, including a more effective regulatory and supervisory structure

- Clarification of the role of the Ministry of State-Owned Enterprises

- Determination of the method of appointing and removing members of the Board of Directors and the Oversight Commission and the role and responsibilities of the Oversight Commission

- Design and detailed short and long-term fiscal projections for the five social insurance funds

- Drafting of all required government laws, regulations and Presidential decrees.

A more complete description of the prerequisites for the start of the SJSN programs in contained in Part 3 of this report.

Once implemented, the SJSN programs will assure basic protection for all Indonesians as required by the Constitution and Law No. 40 of 2004 and will help protect against the negative financial consequences of future macroeconomic shocks.

PART 2

DETAILED SJSN PROGRAM DESIGN

1. POPULATION PROJECTIONS

In order to estimate the required contribution rate to finance the social insurance programs, we first must prepare long-term projections of the Indonesian population. This information is then used to determine the maximum size of the labor force, the expected number of employed workers, the number of workers who are expected to make contributors to the various social insurance programs and the expected number of beneficiaries. Once these steps are completed, we can test various benefit and financing schemes to determine the expected revenue and expenditures of the social insurance funds each year.

We used a 75-year analysis period, beginning in 2007 and ending in 2082. We used 2007 as the starting year because it is the last year for which complete and reliable data is available. The 75-year projection period is an international norm for this type of analysis, particularly for pension programs.

In order to project population over this time period, assumptions must be made regarding future fertility and mortality – the number of future births and deaths. There are several primary sources for international population data. These include:

- United States Census Bureau: http://www.census.gov/ipc/www/idb/

- World Bank: http://go.worldbank.org/072F5QBOC0

- United Nations: http://www.un.org/popin/wdtrends.htm and http://esa.un.org/unpp

- World Health Organization (WHO): http://www.who.int/whosis/database/life_tables/life_tables.cfm.

We used a combination of these sources to set fertility and mortality assumptions for our analysis as described in greater detail below.

1.1 STARTING POPULATION

Starting population data was obtained from the "Population of Indonesia (Intercesnal Population Survey 2005)." Table 1 of this Survey gives population data by age and sex for 2005. Data is available in 5-year age groups through age 74 and the population age 75 and above is presented as a single group.

Our computer models require data by 5-year age and sex groups to age 100. Consequently, the population age 75 and had to be further divided into 5-year age groups. We used data on the distribution of this group from Thailand for this purpose. It is a country in the region with mortality similar to Indonesia and data by age and sex through age 100 was readily available. The table below shows how the 75+ population was allocated to 5-year age groups.

	Male	Female
75-79	53.3%	50.3%
80-84	27.1%	27.6%

	Male	Female
85-89	11.7%	13.2%
90-94	4.4%	5.2%
95-99	1.6%	1.9%
100+	1.9%	1.8%

Source: Author's calculations

Each 5-year age group was then divided equally among the individual ages in each group. The population for 2005 was then projected forward to 2007 and the estimated 2007 population was used as the starting population for all future analysis.

1.2 FERTILITY

We assumed Indonesia's fertility rate is 2.27 today, will decline to 1.84 by 2035 and then remain at that level throughout the remainder of the analysis period. The fertility rate is the number of babies that a woman will have during her lifetime. The initial fertility rates by age were obtained from Table 3.1 of "Fertility, Mortality and Migration – 2005" prepared by the Bureau of Statistics. This table gives fertility rates in 5-year age groups. This is the percent of women of a give age who will give birth in any year. These rates are shown below.

Age	Percent
15-19	4.30%
20-24	11.50%
25-29	12.30%
30-34	9.50%
35-39	5.30%
40-44	1.90%
45-49	0.50%
Total	2.27

Source: Indonesian Bureau of Statistics

Future total fertility rates are based on assumptions used by the World Bank in their 2005 population projections and the United States Census Bureau in their 2006 projections. The World Bank data gives only predicted total fertility rates while the US Census Bureau data also shows expected changes in the fertility rates by age.

The 2000 World Bank projections showed an expected decrease in the fertility rate to 2.1 children per mother. The more recent 2005 projections show a decrease to 1.85 as shown in the table below.

	2005	2000
2000-1005		2.450
2005-2010	2.182	2.280
2010-2015	2.014	2.148
2015-2020	1.878	2.128
2020-2025	1.850	2.122
2025-2030	1.850	2.116
2030-3035	1.850	2.110
2035-2040	1.850	2.104
2040-2045	1.850	2.099

Source: World Bank Web Site

The Census Bureau projections show a slower decline in fertility rates than World Bank data, but the ultimate fertility rate is 1.75. It also shows that as Indonesia's development continues, the average age at which women give birth increases. These rates are shown below.

Age Range	2005	2010	2015	2020	2025	2030	2035	2050
15-19	4.53%	3.77%	3.15%	2.62%	2.24%	1.91%	1.67%	1.24%
20-24	11.73%	10.56%	9.60%	8.80%	8.21%	7.69%	7.33%	6.67%
25-29	13.90%	13.45%	13.08%	12.77%	12.54%	12.34%	12.20%	11.94%
30-34	10.41%	10.24%	10.10%	9.97%	9.89%	9.81%	9.75%	9.66%
35-39	5.70%	5.29%	4.96%	4.67%	4.47%	4.29%	4.16%	3.93%
40-44	2.05%	1.89%	1.75%	1.64%	1.56%	1.49%	1.44%	1.35%
45-49	0.47%	0.41%	0.37%	0.32%	0.30%	0.27%	0.25%	0.22%
Fertility Rate	2.4395	2.2805	2.1505	2.0395	1.9605	1.8900	1.8400	1.7505

Source: United States Census Bureau Web Site

What is most important for our calculations is that the birth rate under either scenario falls below two children per mother. This means that ultimately the population of Indonesia will peak and then begin to decrease.

We decided to use the US Census Bureau fertility date by age through 2035 and then kept the rates level throughout the remainder of the analysis period. We felt decreasing the fertility rate to 1.75 was too extreme and decided to cap the ultimate rate at the level used by the World Bank.

In order to prepare population projections, it is necessary to have mortality rates by age and sex today and also to project expected future mortality improvements. Unfortunately, the government of Indonesia does not publish mortality rates by age and sex. Consequently, we had to seek another source for mortality data.

Both the World Bank and the US Census Bureau give limited mortality information. The only statistics they provide are life expectancy at birth, infant mortality, under-5 mortality, and in the case of the World Bank, life expectancy at age 15. The World Bank information is for males and females combined, while the Census Bureau data is by sex and for males and females combined.

The table below shows the information available from the World Bank with projections through 2050. As can be seen, very significant reductions in infant and under-5 mortality are expected along with significant increases in life expectancy due to generally declining mortality at all ages.

	Infant Mortality	Under-5 Mortality	Life Expectancy at Birth	Life Expectancy at Age 15
2005-2010	2.66%	3.18%	70.6	58.2
2010-2015	2.13%	2.49%	72.2	59.3
2015-2020	1.76%	2.03%	73.5	60.2
2020-2025	1.50%	1.71%	74.6	61.1
2025-2030	1.31%	1.48%	75.6	61.8
2030-3035	1.15%	1.29%	76.3	62.5
2035-2040	1.01%	1.12%	77.1	63.0
2040-2045	0.94%	1.04%	77.7	63.6
2045-2050	0.88%	0.98%	78.3	64.1

Source: World Bank Web Site

The data from the US Census Bureau shows similar patterns, though the numbers from the two organizations do not agree precisely. Infant mortality declines sharply while life expectancy at birth increases.

	Life Expectancy at Birth				Infant Mortality		
	Male	Female	Total		Male	Female	Total
2005	67.11	72.11	69.55		4.00%	2.86%	3.45%
2010	68.53	73.69	71.05		3.38%	2.39%	2.89%
2015	69.85	75.17	72.45		2.85%	1.99%	2.43%
2020	71.08	76.53	73.74		2.40%	1.67%	2.04%

	Life Expectancy at Birth				Infant Mortality		
	Male	Female	Total		Male	Female	Total
2025	72.22	77.78	74.93		2.03%	1.40%	1.72%
2030	73.27	78.93	76.03		1.72%	1.19%	1.46%
2035	74.23	79.97	77.03		1.47%	1.02%	1.25%
2040	75.11	80.91	77.94		1.26%	0.88%	1.07%
2045	75.91	81.76	78.76		1.09%	0.77%	0.93%
2050	76.63	82.52	79.5		0.95%	0.68%	0.82%

Source: US Census Bureau Web Site, Data for 2006

However, for purposes of our models, we need mortality rates by age and sex at all ages from zero to 100. The only organization providing data similar to our needs is the World Health Organization (WHO). They publish abridged life tables for 2006 and we used this information as a starting point to create the initial mortality table for Indonesia. We used this information to create a table of starting mortality rates by age and sex in 1-year age groups. We then tested this mortality table to see if it produced life expectancies similar to those published by the World Bank and the US Census Bureau.

We discovered that the initial life expectancies using the WHO table were significantly lower than those from the other two organizations, so we reduced mortality rates at all ages until our initial results matched the average of the results from the World Bank and Census Bureau. This required us to use 90% of WHO mortality for males and 78% for females. With these adjustments, life expectancy at birth and age 15 in the starting year of our model compared to World Bank and Census Bureau information are shown below.

	Our Model (2007)	World Bank (2005-2010)	US Census Bureau (2006)
Male	67.6	Not available	67.1
Female	72.5	Not available	72.1
Total	70.0	70.6	69.6

Source: Author's calculations, World Bank and US Census Bureau Web sites

The next issue is projecting changes in future mortality. In general, mortality rates decline over time as a country develops and its overall health system, environment, level of economic development and education improves. As a starting point, we used the mortality decrease factors developed by the Society of Actuaries in the United States. The rates of mortality decrease per year at selected ages are shown in the table below.

	Age						
	0	20	40	60	70	80	90
Male	2.0%	1.9%	0.8%	1.5%	1.5%	1.0%	0.4%

	Age						
	0	20	40	60	70	80	90
Female	2.0%	1.6%	1.5%	0.5%	0.5%	0.7%	0.3%

Initially, we applied these factors in our model and tested them to see if they reproduced the expected future life expectancies shown in World Bank and US Census Bureau data. Our initial results showed two issues that needed to be addressed:

- Female mortality rates at some ages exceeded male mortality rates when projected forward over a large number of years, resulting in a convergence of male and female life expectancies

- There was too little improvement in life expectancy compared with those projected by the World Bank and Census Bureau.

To solve the first issue, we averaged the male and female mortality improvement factors and used them for both sexes. This kept female mortality rates lower than male mortality rates and kept the difference between female and male life expectancies relatively unchanged throughout the projection period.

The second observation suggests that mortality in Indonesia is expected to decrease much more rapidly than in the United States over the next 50 years. This is reasonable, since the initial mortality rates in Indonesia are higher than in the US, and mortality should improve rapidly in the future due to economic development as well as improvements in medical technology and care. We used a multiple of the US factors in order to reproduce the future life expectancies from World Bank and Census Bureau projections. A factor of 140% of US mortality improvement factors gave acceptable results.

1.4 IMMIGRATION AND EMIGRATION

No net immigration or emigration was assumed to occur during the analysis period. Note that this refers to immigration and emigration to/from the country as a whole and not to migration between regions of the country. Information from the World Bank and United Nations shows very small expected net outflows. In the World Bank's projections, the net outflows continue throughout the analysis period while in the United Nations' data, the net outflows stop after about 20 years. In our opinion, including this factor in our calculations would have a negligible impact. Also, to be meaningful, expected net emigration by age and sex would be needed and neither organization has this information.

1.5 DEMOGRAPHIC PROJECTIONS

In this section, we discuss the results of our Indonesian population projections over the 75-year analysis period. Our analysis indicates that the population of Indonesia is likely to continue increasing through 2057 when it reaches a peak of almost 300 million, and then begin to slowly decline to about 282 million by the end of the analysis period, as shown in the graph below.

Population by Year and Sex
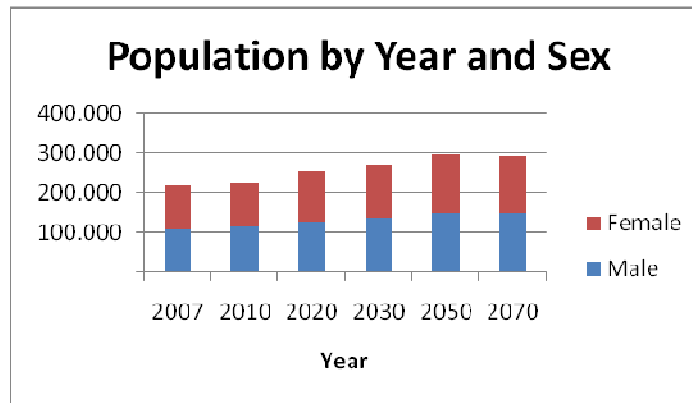
Source: Author's calculations

Although the population grows until 2057, the age composition of the population will change dramatically over the entire analysis period. Because today's birth rates are much lower than in the past, the average age of the population will increase. The chart below shows the percent of the population that are children (ages 0-14), working age (15-59) and retirement age (60+) now and in the future.

Population by Age Ranges
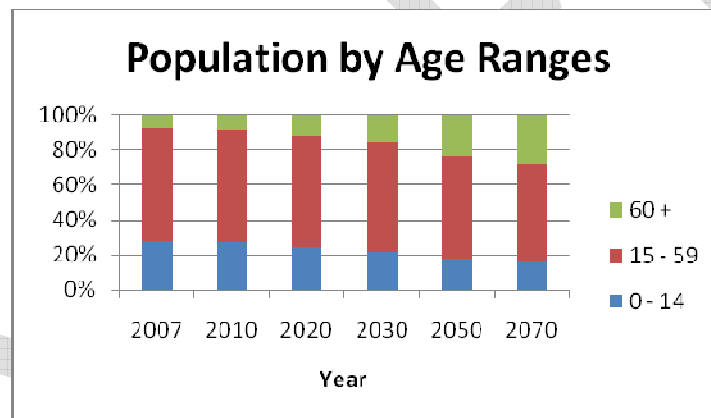
Source: Author's calculations

As can be seen, the percent of the total population that are children declines throughout the analysis period as does the percent at working ages and there is a dramatic increase in the percent of the population above retirement age. Today, the percentage of the population over age 60 is less than 8%. However, by 2030 this increases to 16% and by 2070 it is 28%.

When establishing pension insurance programs, one of the most important factors that determine the cost of the program is the population dependency ratio. This is the ratio of the number over retirement age to the number of working age. This is because workers must make contributions to the social insurance fund that are sufficient to pay promised benefits to those who are retired. The greater the number of pensioners relative to workers, the higher the required tax rate to keep the fund solvent. The chart below shows this dependency ratio.
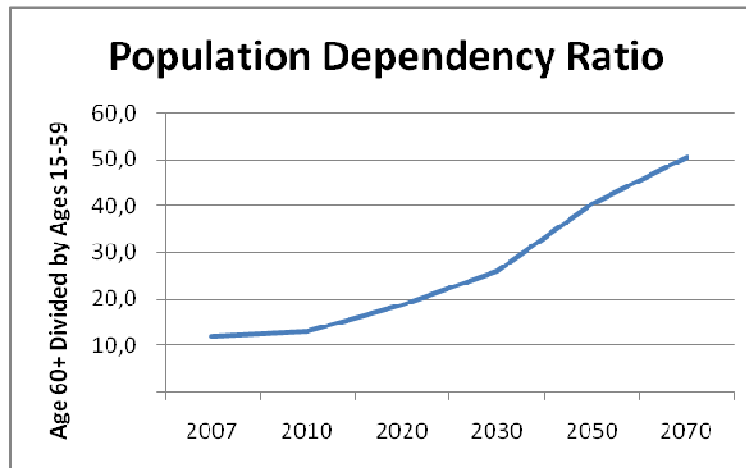
Source: Author's calculations

This table shows that there are almost 10 people of working age for each worker over age 60 today (dependency ratio is less than 12%). However, by 2040, this ratio will decline to just 3 workers for each pensioner and by the end of the analysis period the ratio is just 1.9 workers for each pensioner and the dependency ratio is close to 55%. When the dependency ratio is increasing sharply it is more difficult to keep required contributions from rapidly increasing.

One way to control the population dependency ratio is to increase the retirement age. The table below shows the pattern of population dependency ratios as a function of assumed retirement age and year. Dependency ratios improve as retirement age increases because there are fewer above the assumed retirement age and more at working ages.

Retirement Age	Population Dependency Ratio			
	2010	2030	2050	2070
60	12.9%	25.8%	40.6%	50.6%
65	8.0%	16.4%	27.9%	35.5%
70	4.0%	9.7%	18.2%	24.8%

Source: Author's calculations

Raising the retirement age in the future can be justified if life expectancy at retirement is increasing. In our model, mortality rates decrease significantly during the analysis period so it makes sense to increase the assumed retirement age at some point in the future. The table below shows life expectancies for males and females combined at ages 60, 65 and 70 over the analysis period using our assumptions.

Retirement Age	Life Expectancy		
	2010	2030	2050
60	18.4	20.3	22.3

	Life Expectancy		
Retirement Age	2010	2030	2050
65	14.9	16.6	18.4
70	11.8	13.2	14.8

Source: Author's calculations

This table shows that life expectancy at age 65 in 2050 is the same as life expectance at age 60 today. This suggests that by 2050, the standard retirement age in the pension system should be increased by up to 5 years. In fact, the retirement age must be increased if the population is aging and the system is to remain fiscally stable.

2. LABOR FORCE AND EMPLOYMENT PROJECTIONS

To project the labor force and number of workers, we must know what percent of the population at each age is able to work (labor force participation rates), how many are unemployed and how many are employed.

2.1 ASSUMPTIONS

We first project results for the entire labor force. Then we separately analyze the composition of the formal and informal sectors. This is necessary because the pension and old-age savings programs will likely be implemented first for the formal sector and then for the informal sector. The characteristics of the formal sector labor force differ significantly from those for the informal sector.

The table below shows the number employed, number unemployed and the total number of economically active (sum of the employed and unemployed) for the entire population. All information is as of February 2007 and is from the Indonesian Bureau of Statistics.

Age Range	Employed by Age Range and Sex				Unemployed				Economically Active		
	Male	Female	Total		Male	Female	Total		Male	Female	Total
0-9	0	0	0		0	0	0		0	0	0
10-14	721,219	434,275	1,155,494		147,611	135,073	282,684		868,830	569,348	1,438,178
15-19	3,705,162	2,065,844	5,771,006		1,276,027	1,060,250	2,336,277		4,981,189	3,126,094	8,107,283
20-24	7,073,149	4,124,646	11,197,795		1,917,956	1,533,768	3,451,724		8,991,105	5,658,414	14,649,519
25-29	8,039,153	4,719,343	12,758,496		985,410	910,262	1,895,672		9,024,563	5,629,605	14,654,168
30-34	8,274,462	4,682,084	12,956,546		515,758	447,152	962,910		8,790,220	5,129,236	13,919,456
35-39	7,939,926	4,646,963	12,586,889		303,401	297,827	601,228		8,243,327	4,944,790	13,188,117
40-44	7,234,361	4,241,515	11,475,876		255,292	185,976	441,268		7,489,653	4,427,491	11,917,144
45-49	6,231,607	3,590,656	9,822,263		189,171	151,016	340,187		6,420,778	3,741,672	10,162,450

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Age Range	Employed by Age Range and Sex				Unemployed				Economically Active		
	Male	Female	Total		Male	Female	Total		Male	Female	Total
50-54	4,859,840	2,722,325	7,582,165		137,692	73,435	211,127		4,997,532	2,795,760	7,793,292
55-59	3,453,985	1,859,551	5,313,536		110,597	40,308	150,905		3,564,582	1,899,859	5,464,441
60-64	2,263,557	1,233,926	3,497,483		61,142	32,347	93,489		2,324,699	1,266,273	3,590,972
65-69	1,486,613	802,404	2,289,017		40,967	22,163	63,130		1,527,580	824,567	2,352,147
70-74	918,851	476,043	1,394,894		0	0	0		918,851	476,043	1,394,894
75+	670,616	266,559	937,175		0	0	0		670,616	266,559	937,175
Total	62,872,501	35,866,134	98,738,635		5,941,024	4,889,577	10,830,601		68,813,525	40,755,711	109,569,236

Source: Labor Force Situation, February 2007, Tables 14.3 to 14.5 and 40.3 to 40.5

We then calculated the initial labor force participation rates and unemployment rates as followed:

- Labor force participation rates are equal to the number of economically active divided by the starting population for each age range and sex

- Unemployment rates are equal to the number of unemployed divided by the number economically active for each age range and sex.

After making these calculations, we smoothed the resulting rates and entered them into the computer model as the starting labor force participation rates and unemployment rates. We chose to keep these rates constant throughout the projection period. The final rates used in the model are shown below.

	Unemployment Rate			Labor Force Participation	
Age	Male	Female		Male	Female
0-9	0.0%	0.0%		0%	0%
10-14	17.0%	23.7%		8%	5%
15-19	25.6%	33.9%		48%	31%
20-24	21.3%	27.1%		93%	58%
25-29	10.9%	16.2%		98%	58%
30-34	5.9%	8.7%		98%	58%
35-39	3.7%	6.0%		98%	58%
40-44	3.4%	4.2%		98%	58%
45-49	2.9%	4.0%		98%	58%

	Unemployment Rate			Labor Force Participation	
Age	Male	Female		Male	Female
50-54	2.8%	2.6%		93%	54%
55-59	3.1%	2.1%		86%	50%
60-64	2.6%	2.6%		79%	42%
65-69	2.7%	2.7%		67%	34%
70-74	0.0%	0.0%		63%	29%
75+	0.0%	0.0%		46%	18%

Source: Author's Calculations

This yields an initial labor force of about 109 million and employment of 98 million in 2007. All of the 98 million workers must either make contributions to the social insurance funds or the government must make contributions on their behalf. Under the SJSN law, the government contributes for those who are poor or "financially disabled."

Next, we wish to analyze the informal and formal sector labor force in more detail, as they have very different characteristics. Recall that the number of economically active is equal to the number employed plus the number unemployed. It is the size of the labor force if everyone who was able to work was employed. Data regarding the age and sex composition of employed workers in the formal and informal sectors is available. Unfortunately, it is impossible   to allocate the unemployed between the formal and informal sectors. They are unemployed and it is difficult to say where they would be employed if they had a job. Consequently, we are limited to comparing the characteristics of those who are employed in the formal and informal sectors. The table below shows the age and sex composition of those employed in the formal and informal sectors.

Age Range	Formal				Informal		
	Male	Female	Total		Male	Female	Total
10 - 14	57,829	57,685	115,514		663,390	376,590	1,039,980
15 - 19	1,022,494	887,782	1,910,276		2,682,668	1,178,062	3,860,730
20 - 24	3,186,174	2,162,236	5,348,410		3,886,975	1,962,410	5,849,385
25 - 29	3,601,169	2,012,030	5,613,199		4,437,984	2,707,313	7,145,297
30 - 34	3,724,524	1,594,699	5,319,223		4,549,938	3,087,385	7,637,323
35 - 39	3,524,692	1,527,119	5,051,811		4,415,234	3,119,844	7,535,078
40 - 44	3,043,269	1,230,795	4,274,064		4,191,092	3,010,720	7,201,812
45 - 49	2,443,057	983,550	3,426,607		3,788,550	2,607,106	6,395,656
50 - 54	1,727,180	639,286	2,366,466		3,132,660	2,083,039	5,215,699
55 - 59	1,018,848	335,062	1,353,910		2,435,137	1,524,489	3,959,626

Age Range	Formal				Informal		
	Male	Female	Total		Male	Female	Total
60 - 64	464,331	194,722	659,053		1,799,226	1,039,204	2,838,430
65 - 69	264,955	98,739	363,694		1,221,658	703,665	1,925,323
70 - 74	152,961	64,557	217,518		765,890	411,486	1,177,376
75+	101,506	42,718	144,224		569,110	223,841	792,951
Total	24,332,989	11,830,980	36,163,969		38,539,512	24,035,154	62,574,666
Average Age	36.61	33.98	35.75		39.32	39.84	39.52

Source: Indonesian Bureau of Statistics (BPS); author's calculation of average age

There are several observations that can be made from an examination of this data.

- The informal sector is much larger than the formal sector. Approximately 63% of all employed workers are in the informal sector.

- The informal sector is disproportionately composed of very young and older workers. Workers over age 50 are 25.4% of all informal sector workers but only 14% of formal sector workers. Workers under age 20 are 7.8% of all informal sector workers but only 5.6% of formal sector workers

- The average age of the informal sector is 39.52 while the average age of formal sector workers is 35.75, a nearly four year age difference

- The informal sector has a much higher percentage of female workers than the formal sector. Females are 23% of formal sector workers and 38% of informal sector workers

- Women tend to be in the formal workforce when they are young and then move to the informal workforce in greater numbers than men as they get older.

2.2 LABOR FORCE AND EMPLOYMENT PROJECTIONS

To calculate the size of the labor force at any point in time, the working age population is multiplied by the labor force participation rates by age and sex. The total number employed is equal to the labor force multiplied by the percent employed by age and sex. All results are for the formal and informal sectors combined.

Again, we assumed the labor force participation and unemployment rates remain level throughout the analysis period. Consequently, any changes in the size of the labor force as a percent of the population or changes in the aggregate unemployment rates reflect changes in the demographic composition of the Indonesian population rather than changes in the underlying labor force participation and unemployment rates.

For example, unemployment rates are highest at the youngest ages and are very low during mid-career. As the population ages, there are fewer new entrants to the labor force and the average age of the workforce increases. This demographic change causes the overall

unemployment rate to drop even though the unemployment rates by age and sex remain the same. The table below shows the results of our analysis.

Labor Force and Employment (millions)

Year	2010	2030	2050	2070
Labor Force	115.4	144.3	155.1	150.4
Labor Force as % of Population	50.7%	52.7%	52.4%	51.4%
Employed	104.2	132.3	143.4	139.4
Unemployment Rate	9.7%	8.4%	7.6%	7.3%

Source: Author's calculations

These projections were then used as the basis for determining the number of future contributors and beneficiaries to each of the SJSN social insurance programs.

3. PENSION PROGRAM DESIGN AND FINANCING

In this section, we discuss the detailed cost of the SJSN pension program. First we must project the number of contributors and the number of beneficiaries in each year. Beneficiaries include old-age pensioners, disabled pensioners and beneficiaries of deceased workers. After calculating the number of contributors and beneficiaries, we project total revenues and expenditures. The primary source of revenue is payroll contributions and the primary expenditure is benefit payments to beneficiaries.

3.1 CONTRIBUTOR PROJECTIONS

Since the SJSN programs cover all workers, we assumed that everyone who is employed, whether in the formal or informal sector, is required to make contributions with the exception of those over the assumed retirement age (age 60). Consequently, the number of contributors is equal to the total number employed and under age 60.

We do not recommend requiring those who work beyond age retirement age to continue making contributions. If we followed this approach, then either:

- Pension benefits should be delayed until actual retirement date. In this instance, pension benefits would have to reflect all years of contributions, including those after age 60, and the benefit should be increased to reflect the shorter expected payout period; or

- Retirement benefits should begin at the standard retirement age even if the person continues to work and retirement benefits for working pensioners should be adjusted on a regular basis to reflect the increased years of contributions.

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In our opinion, the simplest way to administer the programs is to stop contributions and begin benefits at the retirement age regardless of work status. Requiring contributions after age 60 would disproportionately discriminate against the informal sector, where workers earn less, often work on a part-time or seasonal basis only, and often continue to work for as long as health permits. As a matter of labor policy, this approach is also superior as it doesn't make sense to force informal sector workers to leave the workforce in order to begin receiving a pension and it would be difficult to enforce this rule anyhow.

As noted earlier, the standard retirement age should be adjusted periodically to reflect changes in life expectancy, demographics and work patterns. The table below shows the expected number of contributors in selected future years assuming retirement age 60 and no required contribution by those age 60 or older.

Contributors and Employed (millions)

Year	2010	2030	2050	2070
Employed	104.2	132.3	143.4	139.4
Contributors	95.2	112.4	115.3	108.0
% Contributing	91.4%	85.0%	80.4%	77.5%

Source: Author's calculations

Without periodic adjustments in retirement age, the number of contributors relative to the number employed will decline steadily.

3.2 DECREMENT ASSUMPTIONS

In order to calculate the number of future beneficiaries, we must make assumptions about the age(s) at which contributors begin receiving old-age pension benefits and the percentage of contributors who become disabled or die each year.

The pension program will also include survivor benefits. Benefits are primarily payable to children and the spouse of the deceased contributor. Benefits to the spouse are payable until remarriage or death, while benefits to children cease upon marriage, entry into the workforce or attainment of age 23. Parents are entitled to a survivor pension only if the deceased worker does not have a spouse or children.

Survivor benefits will also be paid to the spouse of a deceased pensioner. We assumed the benefit will be equal to the greater of:

- 70% of the benefit being received by the deceased pensioner
- 100% of the spouse's own pension benefit.

If the spouse was in the workforce and is receiving a pension based on his or own wage and contribution history, the spouse is not entitled to two pensions. They receive the greater of their own pension or 70% of the spouse's pension. This provides protection for non-working spouses but avoids overpayment of pensions when both spouses are in the labor force.

It is difficult to accurately model the number, age and sex characteristics of beneficiaries of deceased contributors. It depends on the marital status of the contributor, the number and

age of the children and the probability the spouse will remarry. This level of complexity is beyond the capability of our models and there is no prior experience to use as a guide. It is also difficult to estimate which benefit will be greater for the spouses of deceased pensioners. For the moment, we assumed the expense for all survivor benefits will be equal to 3% of the sum of pension and disability benefits. This factor is based on the author's experience in other countries with mature pension systems.

As previously discussed, we assumed everyone is entitled to and begins receiving old-age pension benefits at age 60. Benefits begin regardless of whether the contributor leaves the workforce or continues to be employed in some capacity. We also assumed that benefits are calculated at age 60 based on salary and contribution history up until that point in time and that no contributions are required from those working after age 60.

For disability, there is no relevant Indonesian experience that can be used to determine expected rates of disablement. Consequently, we looked at the rates of disability in relative to mortality under the US Social Security system. We chose to use the relative relationship between rates of disablement and rates of mortality rather than the absolute rates on the assumption that countries with higher mortality rates would also likely have higher disability rates. The relative factors from the US Social Security system are shown in the table below in the "ratio" column.

Age Range	Mortality Rates		Disability Rates		Ratio	
	Male	Female	Male	Female	Male	Female
15-29	0.0923%	0.0390%	0.0400%	0.0240%	43.4%	61.5%
20-24	0.1400%	0.0497%	0.1060%	0.0780%	75.7%	157.0%
25-29	0.1336%	0.0555%	0.1410%	0.1230%	105.5%	221.7%
30-34	0.1485%	0.0726%	0.1990%	0.1970%	134.0%	271.4%
35-39	0.2015%	0.1145%	0.2734%	0.2930%	135.7%	256.0%
40-44	0.3033%	0.1788%	0.3760%	0.4060%	124.0%	227.1%
45-49	0.4584%	0.2636%	0.5110%	0.5460%	111.5%	207.1%
50-54	0.6610%	0.3816%	0.8330%	0.8670%	126.0%	227.2%
55-59	0.9555%	0.5893%	1.4550%	1.3420%	152.3%	227.7%

Source: US Social Security Statistical Supplement 2007 and author's calculations

Benefits to disabled contributors are payable from date of disablement until death or recovery. Since disability is assumed to be total and permanent, very low rates of recovery are expected and we assumed no recovery in our model. Once the disabled worker reaches age 60, benefits are payable for life regardless of disability continuation.

3.3 BENEFICIARY PROJECTIONS

Next we must estimate how many are eligible to receive benefits each year from the pension program. When determining the number of beneficiaries, we assumed all old-age pensioners receive benefits for as long as they live. However, those retiring in the first 15 years of the new system receive a refund of contributions only. Disability pensioners receive

benefits from date of disablement to the earlier of date of recovery or death. The 15-year contribution requirement does not apply to disabled pensioners.

If the pension program began in 2009, only those reaching age 60 in 2024 or later would be eligible to receive pension benefits. Others are entitled to just a return of contributions with interest. In effect, the pension program is a defined contribution plan for the first 15 years and a defined benefit plan thereafter.

The table below shows the total number of beneficiaries and the number of new beneficiaries (in thousands) eligible to receive benefits in selected future years. The new old-age pensioners in 2010 receive a return of contributions only and not a pension benefit. This is why the table shows new old-age pensioners but no total old-age pensioners for 2010. However, those who become disabled receive a pension regardless of years of contributions.

Number of Beneficiaries (thousands)

	2010	2030	2050	2070
New old-age pensioners	1,243.2	2,639.8	3,068.0	3,221.4
New disability pensioners	578.1	567.7	434.4	414.6
Total old-age pensioners	0.0	15,736.5	51,897.7	68,203.3
Total disability pensioners	1,691.5	11,996.6	16,133.8	15,047.5

Source: Author's calculations

Because of the 15-year delay in paying old-age pension benefits, the total number of disability pensioners is initially very large compared to the total number of old-age pensioners. However, as time goes by, this relationship changes and there are many more old-age pensioners than disability pensioners.

3.4 PENSION PROGRAM DEPENDENCY RATIO

Just as we were able to measure the population dependency ratio, we can also measure the pension system dependency ratio. In this instance, it is the ratio of the number of beneficiaries (old-age and disability pensioners) to the number of contributors (number employed and under age 60). The chart below shows how the number of beneficiaries increases relative to contributors over time.
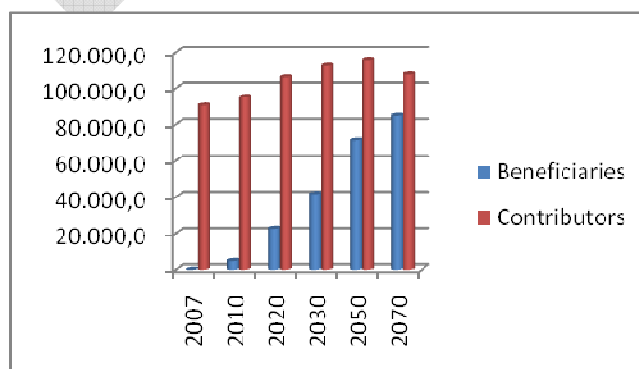
The system dependency ratio shows the burden on workers to pay for benefits to beneficiaries. A higher ratio of beneficiaries to workers means higher contribution rates and/or lower benefits is required to keep the system in financial balance. The graph below illustrates the increase in the system dependency ratio over time.
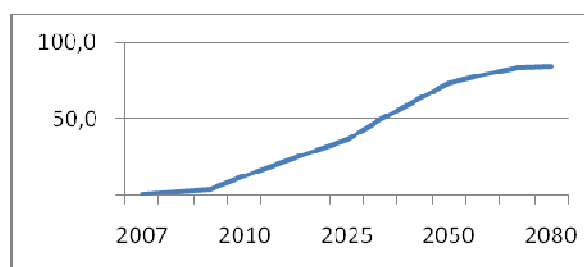
Source: Author's calculations

Note that this pension system dependency ratio starts out lower than the population dependency ratios but end up much higher. By the end of the analysis period, there are almost as many beneficiaries as there are contributors. The primary reason is that a significant number of the disability pensioners are of working age, but rather than being contributors, they are beneficiaries. If we had directly calculated the number of beneficiaries of deceased contributors, the situation would be slightly worse.

3.5 PENSION PLAN DESIGN

The next step in our analysis is to determine the revenue and expenditures of the SJSN pension program in each year of the analysis period. However, it is impossible to do this without first deciding on the precise benefits that will be paid. Our goal was to design a SJSN pension program that would cost 5-6% of total wages. The remainder of this section describes one possible option for the design of the pension program with a cost of no more than 6% of wages.

RETIREMENT AGE

The SJSN law requires the pension age to be "according to valid laws and regulations." The existing retirement programs use a variety of retirement ages.

- Jamsostek pays out JHT benefits at age 55

- Taspen benefits for civil servants generally begin at age 56 or 60, depending on employment classification. Benefits can begin as early as 50 with 20 years of government service

- In the private sector, age 60 is considered the standard retirement age and is the age when health insurance benefits normally stop

- In the informal sector, many citizens work throughout their entire lives. It is difficult to determine a true "retirement age."

Nonetheless, retirement age is a key variable in the design of any pension scheme. It should be the age at which most workers will leave the labor force. It also determines the number

of years workers are likely to make contributions to the pension fund and the number of years for which workers are likely to receive benefits. In general, the government has a choice between:

- Having a low retirement age and low benefits or having a higher retirement age and paying higher benefits; or

- Having a low retirement age and higher cost or higher retirement age and lower cost.

As discussed in the first section of this report, based on interviews with key stakeholders and analysis of mortality rates and life expectancies in Indonesia today, we recommend a retirement age of 60 for the SJSN programs. If this retirement age is selected, conforming changes in labor legislation may be necessary. The analysis is this section of the report is based on this assumption. We also assumed everyone begins receiving benefits at the stated retirement age even if they are still working.

PENSION BENEFIT AMOUNT

The benefit amount must be selected in accordance with the SJSN law and in keeping with the cost constraints outlined earlier in this report. The cost of the pension program for employers and workers should not exceed 6% of covered wages. Our analysis indicates that this level of contributions can support a pension benefit of approximately 20% of pay. Assuming an average career of 40 years (ages 20 to 60), we selected a benefit formula of 0.5% of average wages for each year of contributions. Since the SJSN law counts only years of contributions, years of work prior to the start of the SJSN pension program do not count for purposes of benefit calculations or eligibility to receive a pension benefit rather than a refund of contributions.

However, as previously discussed, this design leaves older workers and the existing elderly with inadequate or not pension benefits. It could also pay inadequate benefits to low-paid workers. Consequently, we prepared additional analysis that includes:

- Credit for years of service prior to the start of the system for existing workers

- A minimum social pension to those who are already elderly

- A minimum monthly benefit of 100,000 Rp. per month for all workers. Everyone will receive the greater of the benefit calculated using the benefit formula above or 100,000 Rp.

These enhancements are affordable because the number of existing elderly is very small and the proposed "social pension" and minimum benefit are also quite small.

The SJSN law also stipulates that the pension program must provide disability and death benefits to covered workers. For purposes of our analysis, we assumed that disability and death benefits due to work-related accidents would be paid from the worker accident program. Consequently, only non-occupational deaths and disabilities are financed by the SJSN pension program.

We also assumed benefits would be payable only for total and permanent disabilities – those disabilities expected to last for life or result in death. The benefit is payable from date of disability until death or recovery and is equal to the accrued benefit earned through

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disability date. After age 60, the benefit is payable regardless of whether the individual remains disabled or not. Note that this benefit is likely to be inadequate for anyone who is disabled at a young age. Some plans pay a benefit equal to a percentage of final salary for total and permanent disability so those who are disabled at a young age receive a higher benefit.

Similarly, survivor benefits are assumed to be equal to the accrued benefit at date of death and are shared equally among all eligible beneficiaries. Some programs pay a specified percentage of the accrued benefit for each beneficiary and in some cases this could exceed 100% of the accrued benefit. Payments to beneficiaries stop in accordance with the SJSN law, as described earlier in this report. Note that the beneficiaries of deceased workers would also be eligible for a modest lump-sum death benefit payable from the SJSN death benefit program.

PENSION INDEXING

Another issue is how the pension benefits will be increased (indexed) following retirement. If pension benefits remain the same, they may be adequate to prevent poverty at the moment of retirement, but can quickly become inadequate a few years later due to inflation. For this reason, pensions are normally indexed to either inflation or nominal wage growth following retirement. For wage indexing to be successful, the ratio of contributors to beneficiaries must remain stable or increase. It is unaffordable in a country where the population is rapidly aging. Consequently, inflation indexing is the most appropriate method for the SJSN pension program.

3.6 REVENUE AND EXPENDITURES

Next we need to use information about the number of contributors and beneficiaries, the benefit formula and an assumed contribution rate to calculate expected revenues and expenditures for the SJSN pension program. In order to prepare these projections, we need a set of macroeconomic assumptions and an assumption regarding the average wage of the covered group.

We want to express results in rupiah and as a percent of GDP. Most analysts focus on results as a percent of GDP because the amounts in rupiah become meaningless because they are staggeringly large when projected forward with inflation and assumed wage increases for many years.

In preparing these estimates, we focused only on the cost of the SJSN programs themselves. We did not estimate the offsetting savings that might occur from the reduction or elimination of other current government programs that may overlap with the coverage provided under the SJSN law. We show the results of our analysis on a variety of different bases:

- *Cost of the program as a percent of GDP*. This shows the burden of each social insurance program on the Indonesian economy as a whole

- *Cost of the program to workers and employers as a percent of wages*. This shows the burden on employer labor costs and the reduction in workers' take-home pay

- *Cost of contribution subsidies to the State budget*. This is the amount the budget must pay to the SJSN social insurance funds for the poor.

MACROECONOMIC ASSUMPTIONS

We wish to express the costs of the benefit programs as a percent of GDP and as a percent of formal sector wages. In order to do this, we must make assumptions about the growth rate of the economy and wages. The macroeconomic assumptions used in our analysis are summarized below. The assumptions through 2010 were provided by the Ministry of Finance and are based on the budget for 2009. In light of the global financial crisis and recession, these figures will need to be updated as the situation changes.

	2007	2008	2009	2010	2015	2040	2045+
Inflation Rate	6.6%	12.5%	6.2%	6.2%	4.0%	4.0%	4.0%
Real GDP Growth	6.3%	6.3%	6.0%	5.5%	4.5%	4.0%	3.0%
Real Wage Growth	5.0%	5.0%	5.0%	4.0%	3.5%	3.5%	3.0%

Source: Ministry of Finance for 2007-2010 inflation and real GDP growth

The real wage assumption was selected to keep labor's portion of total output (national wages) approximately the same percent of GDP in all years.

AVERAGE WAGE CALCULATION

In order to calculate expected future benefits and contributions under the pension program, we need to estimate the average wage of covered workers in total and for the formal and informal sectors separately.

Unfortunately, the standard statistics from the BPS do not give any of the needed information. BPS data organizes workers into 7 employment status categories. The table below shows the employment status categories and the number of formal and informal sector workers in each as of February 2007.

This average wage data also includes only information about wages and allowances that are paid on a regular monthly basis. It does not include information about annual bonuses or other types of non-periodic pay.

Category Number	Type of Worker	Formal Sector	Informal Sector
1	self-employed	290,350	18,376,982
2	self-employed + family	5,958,943	14,889,592
3	small business	2,847,692	0
4	employee	26,869,051	0
5	casual agriculture	0	6,278,470
6	casual non-agriculture	82,419	4,184,645
7	unpaid worker	0	17,804,997

Category Number	Type of Worker	Formal Sector	Informal Sector
Total		36,048,455	61,534,686

Categories 3 and 4 are entirely formal sector workers and category 7 is entirely informal. All others are a mix of the two.

BPS publications contain average wage data for the following categories of workers:

- *Laborers:* Laborers are everyone in employment status 4, 5 and 6. It is a mix of formal and informal sector workers. It includes about 75% of formal sector workers but only about 17% of informal sector workers

- *Employees:* This is employment status 4 only. This category includes some but not all formal sector workers and does not include all formal sector laborers.

- *By Employment Status and Profession:* This includes data on average wages for both formal and informal sector workers, but data is only available for employment statuses 1, 4, 5 and 6.

We used information regarding count and average wage by employment status and profession to estimate the average wage for the formal sector, informal sector and both combined. The table below shows the average wage information we obtained from BPS.

Average Wages by Employment Status and Profession

	Professional	Managerial	Clerical Worker	Sales Worker	Service Provider	Agricultural Worker	Production, Operator/ Laborer	Other
1, self-employed	1,171,755	2,917,261	836,136	772,742	637,639	452,251	602,246	
2, self-employed + family	0	0	0	0	0	0	0	
3, small business	0	0	0	0	0	0	0	
4, employee	1,442,270	4,405,180	1,398,190	884,984	702,419	691,300	898,313	1,919,227
5, casual agriculture						373,034		
6, casual non-agriculture	816,502		888,770	531,919	451,778		609,657	
7, unpaid worker	0	0	0	0	0	0	0	0

Source: Indonesian Bureau of Statistics, February 2007

The area shaded in grey (added by author) shows the average wage of workers in the formal sector, while the areas that are not shaded show the average wage of informal sector workers. Note that no average wage information is available for categories 2, 3 and 7. Consequently, any average wage calculation will be incomplete. Note too, that some wage should be imputed for unpaid workers in order to calculate an average wage for the informal sector.

The next table shows the number of workers in each cell.

Count by Employment Status and Profession

	Professional	Managerial	Clerical Worker	Sales Worker	Service Provider	Agricultural Worker	Production, Operator/ Laborer	Other
1, self-employed	216,802	9,730	63,818	6,889,977	1,104,396	4,633,809	5,748,800	
2, self-employed + family	37,279	3,787	15,361	3,765,057	456,532	14,889,592	1,680,927	
3, small business	48,011	51,238	32,049	744,420	188,254	875,269	908,451	
4, employee	3,390,688	302,115	3,816,103	2,561,417	3,748,926	2,079,687	10,536,788	433,327
5, casual agriculture						6,278,470		
6, casual non-agriculture	63,936		18,483	175,607	486,795		3,522,243	
7, unpaid worker	46,405	514	46,689	2,500,311	359,556	13,475,845	1,374,624	1,053
Total	3,803,121	367,384	3,992,503	16,636,789	6,344,459	42,232,672	23,771,833	434,380

Source: Indonesian Bureau of Statistics, February 2007

Finally, we used the average wage and count information to calculate the average wage of formal and informal sector workers for each employment status. The results of our calculations are shown below. Categories 2, 3 and 7 have been omitted in these calculations since average wage data are not available.

	Total	Formal	Informal
1, self-employed	638,656	1,156,481	630,474
2, self-employed + family			
3, small business			
4, employee	1,049,222	1,049,222	0
5, casual agriculture	373,034	0	373,034
6, casual non-agriculture	592,755	832,708	588,029
7, unpaid worker			
Total	802,130	1,049,710	568,271

Source: Indonesian Bureau of Statistics, February 2007, author's calculations

It appears to us these average wages are too low. If the average wage for all workers is multiplied by the number of workers and expressed as a percent of GDP, we can calculate national income as a percent of GDP. The result of this calculation is that national income is about 22% of GDP. According to information from the ILO report, "Social Security and Coverage for All", December 2002, this figure should be closer to 35%.

There are several possible reasons for the discrepancy and more investigation will be needed to properly adjust the average wage.

- BPS data includes only periodic payments of salary and allowances. It does not include bonuses or other types of irregularly paid compensation. For civil servants,

this is equal to about 100% of base pay plus fixed allowances while for other formal sector workers we have been told it is about 25% of base pay plus fixed allowances

- Informal sector wages for many categories does not include the implicit value of food grown for self-consumption. This imputed amount should be treated as income for purposes of determining who is poor and could also be treated as wages for purposes of calculating contributions and benefits for the social insurance programs.

For the moment, we adjusted the average wage of the formal and informal sector so labor's share of GDP would be equal to 35%. Wages for both the formal and informal sectors were increased proportionately. Using this method, the average wages for 2007 used in the remainder of our analysis are:

- Formal sector only: 1,647,989

- Informal sector only: 892,155

- All workers: 1,181,651

Based on anecdotal evidence, it appears these figures understate formal sector wages and overstate informal sector wages, although the average for all workers is probably reasonable.

This analysis also leaves the question of how many workers are poor unanswered. In order to calculate the potential burden on the State budget, the number of poor and their average wage must be calculated. Again, more research is needed.

EXPENDITURE AND REVENUE PROJECTIONS

Expenditures consist of benefit payments to beneficiaries for old-age, disability and survivor pensions and administrative expenses. Payments to beneficiaries depend on final average pay and years of contributions. Consequently, working years prior to the SJSN start date are not included in benefit calculations. Payments begin on attainment of age 60 unless the worker becomes disabled or dies prior to that age. Consequently, benefit payment depend on:

- Number of workers attaining retirement age (age 60), becoming disabled or dying each year

- Average wage and years of contributions at the time of retirement, disability or death

- Mortality rates of beneficiaries following the time pension payments begin

- Size of pension indexing adjustments each year

Expected benefit payments are based on both the assumed average wage and distribution of wages in the year of retirement. The distribution of wages is important when determining the cost of a minimum benefit provision and the impact of any wage cap on contribution revenues. Information regarding the distribution of average wages is available only for laborers (categories 4, 5, and 6) and is shown in the table below.

Salary range	Male	Female	Total
< 200	1,326,226	1,966,585	3,292,811

Salary range	Male	Female	Total
200-400	4,137,686	2,714,965	6,852,651
400-600	4,487,435	1,900,800	6,388,235
600-800	4,630,635	1,430,342	6,060,977
800-1000	3,396,918	1,060,671	4,457,589
1000-1500	3,619,999	1,118,218	4,738,217
1500-2000	2,072,144	797,616	2,869,760
2000+	2,179,498	574,847	2,754,345
Total	25,850,541	11,564,044	37,414,585

Source: Laborer Situation, Feb 2007, Tables 14.3 to 14.5, Indonesian Bureau of Statistics

Our analysis shows that expenditures are very low in the early years of the SJSN pension system. Benefits are payable only to disabled pensioners and beneficiaries of deceased workers. However, expenditures then accelerate very rapidly as the population ages and the number of old-age pensioners grows. The table below expresses expenditures on two bases – as a percent of GDP and showing the contribution rate as a percent of wages necessary to exactly cover expenditures in each future year.

	2010	2020	2030	2050	2070
As a % of GDP	0.0%	0.1%	0.5%	2.0%	2.9%
Required contribution	0.0%	0.2%	1.7%	6.3%	9.8%

Source: Author's calculations

Defined benefit pension insurance funds are difficult to finance properly when the population is aging and the ratio of pensioners to contributors (the system dependency ratio) is growing. These programs work best when the system dependency ratio is stable or declining. The government must choose between three basic financing options for the pension program:

- *Pay-as-you-go basis*. Contributions each year are sufficient to pay benefits and administrative expenses in that year. On this basis, the contribution is virtually zero for the first 15 years of the new system and then climbs. Since contribution rates do not exceed the target 6% rate until 2050, there is plenty of time to observe Indonesia's macroeconomic development before making adjustments to the program to keep it within desired targets. However, if the government makes this choice, then the required contribution rate will eventually increase sharply over time, and older workers will pay very little for their benefits, while younger workers and future work force entrants will pay far more for the same benefit

- *Partially funded basis*. Contributions are a level percent of pay in each year. For the suggested plan design, the level required contribution rate is 5.27%. Under this

financing method, contributions in the early years are much higher than needed to pay benefits and administrative costs. The excess contributions are used to accumulate a reserve. Investment income on the reserve and the reserve itself are used to supplement contributions in later years when contributions alone are insufficient to pay all benefits and administrative expenses. The problem with this approach is that a huge reserve will be accumulated during the early years when expenditures are low. These reserves must be properly managed and protected if the system is to remain financially stable. Participants in the early years of the system will also pay too much in relation to benefits received

- *Combination:* Fund the program on a pay-as-you-go basis in the early years of the system and then switch to partial funding in the future in order to control costs.

Revenue projections under the selected financing method depend on several key factors. They are:

- Required contribution rate as a percent of wages

- Number of contributors

- Average wage of contributors

- Wage cap – the maximum amount of wages on which contributions and benefits are based

- Collection efficiency – The percent of contributions due that are actually collected.

We have assumed no wage cap and complete collection efficiency. We have already discussed the calculation of the number of contributors and the average wage of contributors. Therefore, revenue projections will primarily vary with the selected contribution rate pattern.

PROFIT/LOSS AND RESERVES

As a starting point, it is helpful to examine the impact of requiring a level contribution rate throughout the 75-year analysis period. We will examine the profit and loss in each year of the projection period and the build-up of reserves. The contribution rate of 5.27% is exactly sufficient to finance all benefits over the 75-year period with no reserve remaining at the end of the period. The table below shows the profit and loss and level of reserves as a percent of GDP in selected years. For purposes of this table, interest on reserves is treated as part of revenue and the SJSN programs are assumed to start in 2007.

Profit/Loss and Reserves as a % of GDP

	2010	2020	2030	2050	2070	2082
Revenue	2.1%	3.1%	3.8%	4.2%	2.8%	1.5%
Expenditure	0.0%	0.1%	0.5%	2.0%	2.9%	2.9%
Profit/loss	2.1%	3.0%	3.3%	2.2%	(0.1%)	(1.4%)
Reserves	6.6%	21.7%	32.9%	37.3%	17.4%	0.0%

Source: Author's calculations

Note that reserves increase to a very high level and then drop off rapidly to zero by the end of the analysis period as shown in the graph below.
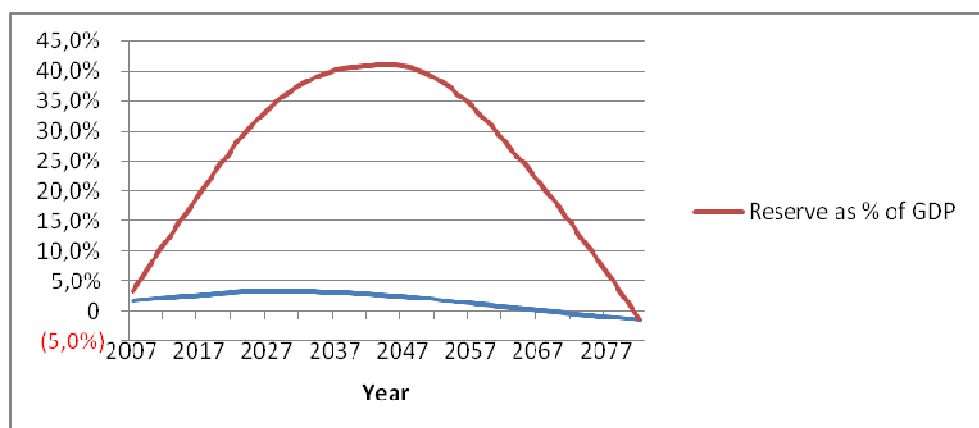
Source: Author's calculations

When analyzing the output from any particular scenario, attention should be paid to the following key dates:

- *Date when expenditures first exceed contributions:* In this example, it occurs in 2047. That is the first year in which benefit payments plus administrative expenses exceeds the revenue collected from employers and workers. After this date, interest on reserves is needed to meet benefit payment obligations. This is generally the date when reserves reach their maximum as a percent of GDP. In this case, reserves are equal to 38.1% of GDP at the beginning of 2047

- *Date when expenditures first exceed contributions plus interest on reserves:* In this example, it occurs in 2070. After this date, not only is the interest on reserves needed to help meet expenditures, but the reserve principal will be needed as well. The reserves themselves will start to decrease after this date

- *Date when reserves are exhausted:* In our example, this occurs in 2082, the last year in the projection period. This is because we set the contribution rate so the reserves would last throughout the projection period. If the contribution rate had been set lower, the reserves would have been exhausted earlier.

The table below shows these key dates and values for several assumed contribution rates:

Contribution Rate	Expenditures exceed contributions	Expenditures exceed total revenue	Reserves exhausted	Maximum reserves as % of GDP
5.27%	2047	2070	2082	38.1%
5.0%	2046	2068	2081	36.9%
4.0%	2043	2057	2069	27.4%
3.0%	2038	2049	2059	19.1%

Source: Author's calculations

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Note the very large reserve accumulation and the long period of time before the system has financial problems. There are two reasons for this result. The first is that there are virtually no expenditures in the first 15 years of the system, since no one is entitled to a pension and the current elderly receive nothing. In fact, it takes 40 years before anyone receives a full pension – a pension based on all years of work. The second reason is there are very few elderly in the early years of the system, but this number skyrockets later in the projection period.

As previously mentioned, we do not recommend allowing a large reserve accumulation in the SJSN pension program. The reserves will become a very large percent of GDP and it will become increasingly difficult politically to protect and use this money for its intended purpose. Politicians and government officials will notice this huge pool of money that is not needed for many years. They will want to use it to increase benefits or divert it to finance other non-SJSN activities. Then later on, when the reserve is truly needed, it won't be there. Consequently, a modified funding scheme is needed.

3.7 ALTERNATIVE DESIGN OPTIONS

We now wish to examine some alternatives to the design presented in the previous section. In this section, we will look at the financial impact of the following changes in the program:

- *Increase the retirement age from 60 to 65 by 2047.* There is a flaw in the base case analysis that tends to overstate the true cost of the program. This analysis assumed a significant increase in life expectancy at retirement, but no increase in retirement age. To be consistent, an assumed retirement age increase should be built into the analysis. This will increase revenues, decrease expenditures and lower the overall program cost.

- *Provide past service credit for existing elderly workers.* The SJSN design grants no past service credit to workers who are elderly at the time the SJSN program starts. As a result, no one receives a pension for the first 15 years of the new system and all existing workers on the date the system starts get less than the benefit they would have received had they been able to contribute throughout their entire working career. We looked at the impact of granting various amounts of past service credit to existing workers

- *Provide current elderly with a "social pension".* Under the SJSN program, those who are already elderly when the system begins receive nothing. We examined the cost of paying a minimal "social pension" to the current elderly even though they never contributed to the program. We also made the social pension amount the minimum pension for all retiring workers as well

- *Provide a minimum pension benefit equal to the social pension.* Low-paid workers and workers with short periods of service may receive inadequate pension benefits. To solve this problem, it is common to provide a minimum pension benefit. If the program includes a social pension for the elderly, then the minimum pension should certainly equal or exceed the social pension.

As previously noted, assuming mortality decreases over time but the pension system retirement age remains the same is inconsistent. Either we should assume no mortality decrease and keep the retirement age the same, or we should assume that the retirement age gradually increases as life expectancy increases.

For the sake of completeness, we first assumed that mortality rates remained the same throughout the 75-year analysis period. This reduces the level required contribution rates from 5.27% to 4.54%. We will not engage in a more detailed analysis of this option.

Next we increased the assumed retirement age from 60 to 65. We kept the retirement age at 60 through 2037 and then increased it by 6 months each year until it reached age 65 in 2047. This retirement age was then held level for the remainder of the analysis period. This is consistent with our mortality assumptions where we decreased mortality rates each year from 2007 through 2047 and then kept them level for the remainder of the analysis period.

As the retirement age increased, we assumed that those contributors below the retirement age were required to continue making contributions. Pensions already in pay status, of course, were not suspended. But workers had to make contributions for a longer period of time and began receiving benefits at a later age. These same workers, however, also received higher benefits because contributions were made for a longer time period. We assumed those who retired at 65 had 45 years of service and received a pension benefit of 22.5% of pay.

The table below summarizes the financial results of our analysis assuming an increasing retirement age and benefit amount, but no past service credit or social pension. After 2037, the number of contributors is higher and the number of beneficiaries is lower than under the base case. The savings from these changes is slightly offset by the higher level of benefits payable to those who retire after 2047. Note that the level required contribution rate drops from 5.27% to 4.48%, so the program now costs less than the target rate of 5-6%.

Contribution Rate	Expenditures exceed contributions	Expenditures exceed total revenue	Reserves exhausted	Maximum reserves as % of GDP
4.48%	2046	2069	2082	30.0%

Source: Author's calculations

Next we granted various amounts of past service credit to those who are working on the date the SJSN pension program begins. We tested two levels of past service. In the first case, we gave all existing workers credit for the lesser of their actual period of work prior to the start of the SJSN pension system or 15 years. Since workers are assumed to begin work at age 20 and retire at age 60, everyone over age 35 received some additional work credits. The table below shows the amount of service credit used in benefit calculations as a function of age on the date the SJSN pension program begins.

Age on SJSN start date	Retirement Year	Retirement Age	Past service granted	Future years of contributions	Total years used in benefit calculation
60	2007	60	15	0	15

Age on SJSN start date	Retirement Year	Retirement Age	Past service granted	Future years of contributions	Total years used in benefit calculation
50	2017	60	15	10	25
45	2022	60	15	15	30
40	2027	60	15	20	35
35	2032	60	15	25	40
30	2037	60	10	30	40
20	2047	65	0	45	45

Source: Author's calculations

As can be seen from this table, all existing workers will have at least 15 years of service credit, so everyone will be eligible for a pension. Those 35 and younger will receive a full 40 (or 45) years of service credit, while those older than 35 will receive more than 15 years but less than 40. Now everyone retiring on or after 2032 receives a full 40 years of service credit while in the base case, only those retiring in 2047 or later received a full pension.

In our second example, we granted past service credit for all years of work. This means everyone was assumed to have 40 years of service credit when reaching age 60 (or 45 years when attaining retirement age of 65). The financial results on these two bases are shown in the table below.

Finally, we looked at the option of grating past service credit to those over age 60 on the date the SJSN pension program begins. For purposes of our analysis, we assumed everyone 60 and over would receive a social pension of 100,000 Rp. per month, increasing with inflation in the future. The table below shows the results for all possible combinations of past service credit and social pensions. In all cases, the retirement age is assumed to increase to age 65 by 2047.

Past service credit	Social pension	Contribution Rate	Expenditures exceed contributions	Expenditures exceed total revenue	Reserves exhausted	Maximum reserves as % of GDP
None	No	4.48%	2046	2069	2082	30.0%
15 years	No	5.69%	2042	2068	2082	28.0%
All years	No	6.02%	2043	2068	2082	24.3%
None	Yes	4.64%	2047	2069	2082	28.2%
15 years	Yes	5.85%	2043	2068	2082	25.5%
All years	Yes	6.18%	2041	2068	2082	21.8%

Source: Author's calculations

As can be seen, the past service credit has a higher cost than the social pension. The social pension alone increases the level contribution rate by 0.16% from 4.48% to 4.64%. If no social pension is paid, but 15 years of past service credit is granted, then the level contribution rate increases by 1.21% from 4.48% to 5.69%.

However, the option of granting a social pension but not past service credit does not make sense. In this case, someone who turned 60 the day before the SJSN pension program began would get a pension of 100,000 Rp. per month, while the person who turned 60 the day after the SJSN pension program began would get nothing . Similarly, a past service benefit without a social pension is also difficult to justify. Now the person who turned 60 the day before the pension program begins gets nothing while the one who turned 60 the day after gets a pension. Consequently, the two should either both be included or both excluded, though the amount of past service and social pension could be changed to control the cost.

In all of the variations summarized above, the reserve grows to be a very large percentage of GDP and this is not desirable. A level contribution might be fair if workers receive significant past service credit. However, it is decidedly unfair if no past service credit is given.

3.8 COST FOR THE POOR

The government is required to make contributions to all five social insurance funds on behalf of the poor. In order to calculate the cost to the State budget it is necessary to define the number of poor and their average income. Unfortunately, this definition does not yet exist. Consequently, we have examined the cost under several possible assumptions regarding the number of poor and their average wages. In order to estimate these parameters, we used information on the distribution of wages for informal sector laborers.

Wage Range (thousands Rp)	Male	Female	Total
< 200	900,566	1,479,650	2,380,216
200-400	2,418,074	984,015	3,402,089
400-600	1,660,459	229,228	1,889,687
600-800	1,349,835	77,596	1,427,431
800-1000	615,086	29,533	644,619
1000-1500	452,935	39,729	492,664
1500-2000	84,142	36,056	120,198
2000+	50,772	55,439	106,211
	7,531,869	2,931,246	10,463,115

Source: Laborer Situation, Feb 2007, Tables 14.3 to 14.5

Assuming the average wage in each range is equal to the midpoint of that range (with the exception of the first and last categories), the implied average wage for this group is 492,570 Rp. However, as we discussed earlier in this report, we used an average wage of 892,155 Rp. for the informal sector. Consequently, we adjusted all the wage ranges so the average wage for this group would be 892,155 Rp.

Wage Range				Distribution	Cumulative		Cumulative	Cumulative

(thousands Rp)	Male	Female	Total	of Count	Count	Wages	Wages	Average Wage
<362	900,566	1,479,650	2,380,216	22.7%	22.7%	862,227	862,227	362
263-724	2,418,074	984,015	3,402,089	32.5%	55.3%	1,848,596	2,710,823	469
724-1087	1,660,459	229,228	1,889,687	18.1%	73.3%	1,711,335	4,422,158	576
1087-1449	1,349,835	77,596	1,427,431	13.6%	87.0%	1,809,791	6,231,949	685
1449-1811	615,086	29,533	644,619	6.2%	93.1%	1,050,802	7,282,751	747
1811-2717	452,935	39,729	492,664	4.7%	97.8%	1,115,414	8,398,164	820
2717-3622	84,142	36,056	120,198	1.1%	99.0%	380,987	8,779,152	848
3622+	50,772	55,439	106,211	1.0%	100.0%	555,574	9,334,725	892
	7,531,869	2,931,246	10,463,115	100.0%		9,334,725		

Source: Author's calculations

The table above shows the ranges after adjustment. The last column in this table shows the average wage through each wage range. The average wage for the group earning less than 362,000 Rp. per month is 362,000. The average wage for the first two groups – those earning less than 724,000 Rp. per month – is 469,000 Rp. By the end of the table, the average wage is equal to the average for all informal sector workers of 892,155 Rp.

These figures allow us to make assumptions regarding the number of poor and their average wages. According to our calculations, there were 62,574,666 informal sector workers in 2007. If only those earning less than 362,000 Rp. per month are considered poor, then 22.7% of informal sector workers or 14.2 million will be considered poor and be eligible for government contribution subsidies with an average wage of 362,247 Rp. Following the same logic, the table below shows the number of poor, their average wage and the percent of the total wage fund of all workers.

Wage Range (thousands Rp)	Number of Poor	Average Wage	Wage Fund	Percent
<362	14,234,883	362,247	61,878,577	4.43%
263-724	34,581,079	468,814	194,544,956	13.93%
724-1087	45,882,353	576,403	317,360,640	22.73%
1087-1449	54,419,105	684,873	447,242,086	32.03%
1449-1811	58,274,249	747,405	522,653,931	37.43%
1811-2717	61,220,627	820,397	602,702,725	43.17%
2717-3622	61,939,471	847,662	630,044,659	45.12%
3622+	62,574,666	892,155	669,915,981	47.98%

Source: Author's calculations

Next we look at the required government contribution subsidies for the poor based on the definition of the number of poor and the pension program benefits. For purposes of this analysis, we have restricted ourselves to two of the pension design options discussed in this section – the base scenario and the scenario that pays full past service benefits and social pensions with the retirement age gradually increasing to 65. Results are presented as a percent of GDP and assume pay-as-you-go and level financing of benefits.

# poor workers	2010	2020	2030	2050	2070	Level
BASE PLAN						
14 million	0.00%	0.00%	0.02%	0.09%	0.13%	0.08%

35 million	0.00%	0.01%	0.07%	0.28%	0.40%	0.26%
46 million	0.00%	0.02%	0.11%	0.45%	0.66%	0.42%
63 million	0.00%	0.05%	0.24%	0.96%	1.39%	0.88%
FULL PAST SERVICE PLUS SOCIAL PENSION						
14 million	0.03%	0.04%	0.07%	0.10%	0.12%	0.10%
35 million	0.08%	0.14%	0.22%	0.32%	0.38%	0.30%
46 million	0.14%	0.23%	0.36%	0.52%	0.61%	0.49%
63 million	0.29%	0.48%	0.77%	1.10%	1.30%	1.04%

Source: Author's calculations

Under the pay-as-you-go method, the cost increases over the course of the analysis period, while under the level contribution method, the cost remains a constant percent of GDP over the entire analysis period.

4. OLD-AGE SAVINGS PROGRAM DESIGN AND FINANCE

The primary purpose of the old-age savings program is to provide workers with a lump-sum at the time they retire. The benefit is equal to the account balance and is generally paid at retirement, permanent disability or death. The SJSN law also includes a provision allowing some portion of the account balance to be withdrawn after making contribution for 10 or more years. Like the pension program, formal sector workers are required to contribute a percent of wages and those in the informal sector contribute a nominal amount.

This benefit from the SJSN old-age savings program differs from the Jamsostek JHT program and the Taspen THT program in several significant ways:

- Unlike Jamsostek, account balances are not paid-out due to termination of employment or unemployment for more than 6 months. The law does allow a portion of the account balance to be withdrawn after 10 years of participation, but the elucidation states that any such withdrawals should be in preparation for retirement

- The benefit is equal to the account balance based on actual investment earnings. In the JHT program, the rate of return credited to individual accounts is declared by Jamsostek each year and is not equal to actual investment earnings. In the Taspen THT program, the lump-sum amount is determined by a formula related to final salary and years of service. Although employees are required to contribute 3.25% of pay, the TASPEN program is actually defined benefit and not defined contribution. The obligation is to pay a lump-sum based on the formula and not to pay a benefit equal to the account balance.

The old-age savings program under the SJSN law is a defined contribution scheme while the pension program is a defined benefit scheme. Under the pension program, the government sets the benefits and actuarial calculations are required to determine the contribution rate. Under the old-age savings scheme, the opposite occurs. The government sets the contribution rate and the benefit is equal to the account balance at retirement. It is impossible to know in advance what the account balance will be, as it depends on too many factors:

- Wages and the pattern of wage changes

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- Periods of absence from the labor force

- Contribution rate

- Investment management and administrative expenses

- Rate of return on investments.

However, it is possible to use reasonable assumptions to estimate the likely size of the account balance at retirement and the impact of changes in the variables listed above on the size of the benefit.

4.1 CONTRIBUTION REQUIREMENT

The first step is to decide what the contribution rate will be for the formal sector and what the nominal contribution amount will be for the informal sector. The government's choice of contribution rate should depend on numerous policy issues:

- *The affordable level of contributions for employers and workers*. Contributions to the social insurance fund must be balanced against labor costs and the competitiveness of Indonesian products in the regional and global economy. For workers, contributions are a trade-off between saving for a secure retirement and the need for current consumption

- *The size of the severance pay benefit*. If the severance pay program makes large lump-sum payments at retirement, then the need for large lump-sums from the old-age savings program will be less. Alternatively, a large old-age savings contribution could be used as a partial substitute for the severance pay program

- *The size of the pension benefit and the quality of the health insurance coverage*. Following retirement, workers need both longevity insurance and savings for large purchases or emergencies. The longevity insurance is provided by the pension component. This component should assure sufficient monthly income to avoid poverty in retirement. One of the main financial emergencies for the elderly is the risk of large medical expenses. If this risk is effectively controlled by national health insurance, then the need for large lump-sums may be much less than if no medical insurance exists for the elderly as is the case for most of the population today.

In Part 1 of this paper, we suggested that the initial contribution rate to the SJSN old-age savings program should be 3%. This is less than the current JHT contribution rate and about equal to the current THT rate. The reasons for this recommendation are:

- The pension program is more important than the old-age savings program. Since the suggested pension contribution rate is 5-6%, the old-age savings program rate should be less

- The SJSN old-age savings program will be a true retirement program. Withdrawals due to change in employment will not be permitted

- The asset management paradigm for the SJSN old-age savings program should differ significantly from the current asset management scheme for the JHT program. It should produce higher rates of return

- Actual investment earnings will be credited rather than a declared rate of interest

- The SJSN old-age savings program will not pay dividends or taxes on profits to the government

For all these reasons, a 3% contribution rate should produce a better lump-sum benefit at retirement than the 5.7% contribution rate provides under the current JHT program.

For purposes of the illustrations in this section, we will use a contribution rate to the old-age savings system of 3.0% of savings for both the formal and informal sectors.

4.2 COST OF OLD-AGE SAVINGS PROGRAM

Based on this contribution rate and the assumptions outlined earlier in this report, we calculated the total cost of the old-age savings program as a percent of GDP. If national wages are equal to 35% of GDP and the required contribution rate is 3.0% of wages, then the total cost of the program will be 1.05% of GDP (35% * 3.0%). Based on the 2007 GDP of 3,957.4 trillion rupiah, the total cost in 2007 would be 41.5 trillion rupiah.

The cost as a percent of GDP will remain the same in all future years unless the contribution rate or labor income's share of GDP changes. In any instance, the calculation of the aggregate old-age savings program cost is simple as it depends only on these two variables.

This contrasts with the pension program, where cost calculations require sophisticated actuarial models and where the cost can vary significantly over time.

4.3 BENEFITS FROM OLD-AGE SAVINGS SYSTEM

Next, we need to estimate the size of the lump-sum at retirement than can be generated by a 3.0% contribution. As stated earlier, the benefit amount will depend on a wide range of different variables. Consequently, we need to make some reasonable assumptions in order to estimate the expected benefit and then study the consequences of variations in these factors.

In the literature we have studied, benefits from the current JHT program are often expressed as a multiple of monthly salary just prior to retirement. For example, if the account balance at retirement is 5 million rupiah and the monthly salary just prior to retirement is 1 million rupiah, then the ratio of the account balance to salary at retirement is 5; the account balance, without future investment earnings, can continue salary payments for 5 months. We will use the same method to express the results of our analysis – the number of months of salary provided by the account balance.

We made the following simplifying assumptions for our analysis:

- Contribution rate: 3.0%
- Contribution payment frequency: All years
- Withdrawals prior to retirement: None
- Inflation: 4%
- Real rate of wage growth: 3%
- Real rate of return on investments: 4%
- Expenses: None.

The table below shows the salary multiples as a function of years of contributions.

Years of Contributions	Salary Multiple
5	1.9
10	3.9
15	6.0
20	8.2
25	10.5
30	13.0
35	15.5
40	18.2

Source: Author's calculations

The average working career in Indonesia today is approximately 30 years in the formal sector. This table shows that a worker who contributed regularly would have an account balance sufficient to continue his or her last salary for 13 months. This assumes, of course, that contributions are made in all months for the entire 30-year period and the real rate of return exceeds real wage growth by 1%.

Next we look at the impact of expense charges on account balances. Expenses are normally charged in two ways – as a percent of assets and as a percent of contributions. The charge as a percent of assets compensates the fund manager for its asset management function. The charges as a percent of contributions compensates for administrative expenses such as contribution collection, individual account recordkeeping, participant enrollment, etc.

Jamsostek currently does not use either of these standard methods. It does not charge for its expenses in a clear and transparent way. Instead, each year Jamsostek declares the amount of interest to be credited to individual accounts and the amount it will retain to pay for its administrative expenses, taxes and dividends to its shareholder (the government of Indonesia). In effect, Jamsostek charges for its services as a percent of investment income. This charge was 29.5% in 2004 and 33% in 2005. This fee significantly reduces the rate of return credited to members' accounts.

We do not recommend this method of charging members for services. Under the SJSN law, the old-age savings fund will be a trust. This means the contributions and investment income will be the property of members and not the property of the program administrator. Once these changes are implemented, it is important for the BPJS responsible for the old-age saving program to have a fixed schedule of fees that are charged to the fund for its services. These fees should be transparently tied to its business plan and operating expenses and should be justified to members and approved by the government.

For a very large fund, such as the one anticipated by the SJSN law, expense charges should be fairly low due to economies of scale. In general, expenses as a percent of contributions have a bigger impact on individual account balances in the early years when total assets are small. By contrast, fees as a percentage of assets are very small when individual account balances are low and are much higher in later years when account balances are large. Different patterns of expense charges create different incentives for the fund manager.

Purely for illustrative purposes, we have chosen to use expenses of 2% of contributions and 0.6% of assets. These charges are typical for a very large fund, but it is not a suggestion for

and 0.6% of assets. This in no way suggests this is the appropriate level of fees for the SJSN old-age savings fund. The appropriate charges will depend on the precise design and structure of the SJSN old-age savings system.

Based on these assumptions, the table below shows the ratio of the account balance to final monthly salary as a function of years of contributions.

Years of Contributions	Salary Multiple
5	1.8
10	3.7
15	5.6
20	7.6
25	9.6
30	11.6
35	13.7
40	15.8

Source: Author's calculations

As can be seen, expense charges have a significant impact on the overall level of benefits. For a worker with 30 years of contributions, the benefit drops from 13 months to 11.6 months, a decrease of about 11%. In theory, the worker is compensated for the asset management charge through higher rates of return. The administrative fees are necessary for the proper operation of the fund and are unavoidable. However, all expenses need to be carefully controlled to limit the impact on the ultimate benefit.

The next table illustrates the impact of rate of return on the account balance. It shows the salary multiples with a 3% contribution, 3% real wage growth and a real rate of return of 3%, 4% or 5% (1% above and below the rate of return used in the prior table).

Years of Contributions	Real Rate of Return		
	3%	4%	5%
5	1.8	1.8	1.9
10	3.6	3.7	3.9
15	5.3	5.6	6.1
20	6.9	7.6	8.4
25	8.5	9.6	10.9
30	10.1	11.6	13.5
35	11.6	13.7	16.4
40	13.0	15.8	19.4

Source: Author's calculations

If the rate of return, for example, is only 3%, then the account balance will be sufficient to continue salary for just 10.1 months rather than 11.6 months with 30 years of contributions. This is a reduction of 13%. The reduction is even larger if contributions are made for a longer time period.

Unfortunately, the SJSN law allows workers to withdraw a portion of their account balance after 10 years of participation. The permitted percent is not specified in the law and the law doesn't state whether multiple withdrawals can be made prior to retirement age. If the old-

age savings program's purpose is to save for retirement, then these early withdrawals should be severely restricted or prohibited. One of the primary reasons for the tiny benefits must be restricted or prohibited. It is important to understand the effect of "leakage" on the salary multiples available at retirement.

The table below shows the impact on the accumulated account balance if a portion of the account balance is permitted to be withdrawn after 10 years of contributions.

	Percent of account balance withdrawn			
Years of Contributions	0%	10%	20%	50%
30	11.6	11.2	10.8	9.6
35	13.7	13.3	12.9	11.7
40	15.8	15.4	15.0	13.7

Source: Author's calculations

As can be seen, any withdrawal significantly reduces the lump-sum available at retirement and we urge the government to restrict in-service withdrawals to emergencies only.

4.4 OLD-AGE SYSTEM ASSETS

Finally, we show the total amount of assets expected to accumulate in the old-age savings system during its first 20 years, assuming the system began on January 1, 2007. These projections are based upon a 3% contribution rate, 4% real rate of return on assets and expense charges of 2% of contributions and 0.6% of assets, and no in-service withdrawals.

Year	% of GDP
2011	5.0%
2016	9.6%
2021	13.6%
2026	17.0%

Source: Author's calculations

After 20 years, the system will already have assets equal to 17% of GDP. The government of Indonesia must seriously consider how and where it will invest such a large amount of assets and what governance procedures are necessary to protect these assets for the retirement security of its citizens.

4.5 COST FOR THE POOR

The cost to the State budget for contribution subsidies for the poor will depend on the number of poor and their income. We used the same assumptions as for the pension analysis. The table below shows the cost as a percent of GDP as a function of the number of poor workers.

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# of poor workers	Cost as % of GDP
14 million	0.05%
35 million	0.15%
46 million	0.24%
63 million	0.50%

Source: Author's calculations

These calculations assume total national income is 35% of GDP and the contribution rate to the old-age savings program is 3%. Results would be proportionately higher or lower if the contribution rate is other than 3%.

5. DEATH BENEFIT

The death benefit program is intended to provide a modest lump-sum benefit to beneficiaries of workers who die prior to retirement. The following death benefit programs exist in Indonesia today.

- *Jamsostek*: Under the death grant program, beneficiaries of workers who die while actively employed, regardless of cause of death, receive 3 million rupiah plus an additional 600,000 for funeral expenses. These amounts have since been increased to 10 million and 2 million rupiah respectively

- *Jamsostek*: Under the workers compensation program, beneficiaries of workers who die due to employment-related accidents or sickness receive a lump-sum equal to 42 monthly wages

- *Taspen*: The THT program pay the beneficiaries of worker who die while actively employed a lump-sum equal to 16.5 monthly wages

- *Labor Law #13/2003*: Under the severance pay provisions of the labor law, beneficiaries of workers who die while actively employed receive a lump-sum benefit that depends on the length of time the worker was employed. Benefits vary from 4.3 monthly wages for a worker with one full year of service to 30.85 monthly wages for a worker with 24 or more years of service.

5.1 BENFITS

Given the range of death grant programs in existence today, we decided to examine two possible death benefit formulas for the SJSN program.

- *Flat amount*: Under this program, we assumed the lump-sum death benefit would be equal to 10 million rupiah in 2009 and would be adjusted each year thereafter. Benefits can be adjusted either for inflation or for wage increases. If the benefit is adjusted for inflation only, it will decline as a percent of average wages from year to year. If it is adjusted for wage increases, then it will remain a constant percentage of the average wage throughout the analysis period. Note that the benefit amount does not vary with the worker's wage

- *Multiple of wages*: Under this option, we assume the lump-sum death benefit is equal to 12 monthly wages. The benefit amount will vary by worker since it is directly related to each worker's wage.

From these results, the government can determine the cost for any other flat or wage-related death benefit program. For example, if the flat amount is 15 million rupiah, then the cost will be 50% higher than the cost for a death benefit of 10 million rupiah. Similarly, if the benefit is 36 monthly wages, the cost will be three times higher than a death benefit of 12 monthly wages.

5.2 COST OF DEATH BENEFIT PROGRAM

When analyzing the cost of the SJSN death benefit program, the following steps are required for each year in the analysis period:

- Calculate the expected number of contributor deaths each year

- Calculate the total death benefits payable to those who die each year using either the flat amount or multiple of wages approach

- Calculate the total wages of all contributors

- Determine the ratio of expected death benefits to wages. This gives the cost of the program in each year

- Calculate the average cost over the entire analysis period as a level percent of wages.

For purposes of our analysis, we assumed death benefits under the SJSN death benefit program are only payable to workers who are making contributions to the SJSN programs. This means those who have already reached the standard retirement age and begun receiving pension benefits are not eligible for this death benefit. However, their dependants are eligible for a survivor annuity benefit from the pension program.

The number of contributor deaths depends on the age and sex composition of active contributors and the expected mortality rates by age and sex. There are two factors that directly influence the number of deaths each year.

- Due to declining birth rates, the average age of the population (and of contributors) is increasing. This increases the average mortality rate and therefore the number of deaths

- Mortality rates are assumed to decrease over time due to economic growth and improved health outcomes. This decreases the expected number of deaths.

The table below shows the number of contributors in selected future years, the number of expected deaths with and without mortality improvements, and the ratio of deaths to contributors.

Projected Number of Contributors and Deaths, with and without mortality improvement

	2010	2020	2030	2050	2070
Without Projected Mortality Improvements					
Contributors	95,183	106,178	111,357	111,824	102,493
Deaths	388	461	502	540	508
Ratio, deaths to contributors	0.41%	0.43%	0.45%	0.48%	0.50%
With Projected Mortality Improvements					
Contributors	95,167	106,528	112,418	115,298	108,000
Deaths	373	386	358	272	260
Ratio, deaths to contributors	0.39%	0.36%	0.32%	0.24%	0.24%

Without mortality improvement, the number of deaths increases, but with assumed mortality improvements, the number of deaths declines. To be consistent with the other analysis in this report, we will use mortality improvements in pricing the SJSN death benefit.

DEATH BENEFIT EQUALS 12 MONTHLY SALARIES

If the death benefit is equal to 12 monthly salaries, then the cost of the death benefit program will be equal to the ratio of deaths to contributors. This assumes the average wage of dying contributors and all contributors are the same.

In reality, the wages of dying contributors would likely be higher since the average age of those dying exceeds the average age of all contributors and wages generally increase with age. For example, in 2010, the average age of contributors is 35.9 years while the average age of dying contributors is 44.3 years. However, we do not have any information regarding average wages by age and sex, so we cannot reflect this variable in our analysis.

The average contribution rate required over the entire 75-year analysis period to finance this death benefit is 0.28%. However, the rate in the early years is higher and the government would be well advised to charge a rate of 0.35% or more for the first 15 to 20 years. If the death benefit is higher, for example 48 monthly salaries, then the cost will also be four times higher and will cost about 1.4% of wages.

DEATH BENEFIT EQUALS FLAT AMOUNT

Next we examine the cost of a death benefit equal to 10 million rupiah. We will examine the cost of this benefit on two different bases – assuming the amount increases with inflation each year or with wages each year.

If the benefit is indexed to wages, then the benefit is effectively equal to a constant percentage of the average wage for everyone. However, unlike the first example, the flat amount will be a different multiple of each worker's salary. Those with low pay will get a higher multiple while the high-paid will receive a lower multiple.

For example, assume the death benefit is 10 million rupiah and the average monthly wage is 1 million rupiah. In this instance, beneficiaries of a worker earning the average wage will receive a benefit equal to 10 monthly salaries. However, if a worker earns 3 million rupiah

per month, the benefit will be only 3.33 monthly salaries while a worker earning 500,000 rupiah per month will receive a benefit of 20 monthly salaries.

This means the high-paid are getting a worse deal. Since benefits are financed as a percent of salary, they are paying more than other workers for the exact same benefit. To make matters worse, the higher-paid are likely to have lower mortality rates as well.

If the initial benefit in 2009 is set at 10 million rupiah, this is approximately 6.5 monthly salaries. The cost of this death benefit will be about 54% of the cost for the benefit of 12 monthly salaries or about 0.15% on a level funding basis.

If the flat death benefit is indexed to inflation instead of wages, then the death benefit will become a smaller multiple of the average wage over time, as shown in the table below.

	2010	2020	2030	2050
Death benefit (mill Rp.)	10.6	16.4	24.3	53.2
Average monthly wage (mill Rp.)	1.7	3.7	7.7	32.0
Death benefit as multiple of average wage	6.2	4.4	3.2	1.7
Cost as % of average wage	0.20%	0.13%	0.08%	0.03%

Because wages increase more rapidly than the flat benefit amount, the cost as a percent of wages to finance the benefit declines over time. It is more expensive in the early years and becomes progressively cheaper. The benefit is equal to 6.2 monthly salaries in 2010 but has declined to just 1.7 monthly salaries by 2050.

The average cost to finance this benefit over the 75-year analysis period is just 0.06%. However, the government should not charge this level amount as it will be grossly insufficient in the early years of the new system. The actual cost will exceed 0.06% until 2035.

SUMMARY

The table below summarizes the cost of the SJSN death benefit program under the three options presented in this section.

- Benefit equals 12 monthly salaries
- Benefit equals 10 million rupiah (in 2007) indexed to wage increases
- Benefit equals 10 million rupiah indexed to inflation.

The cost as a percent of wages is shown for selected years. We also show the average level cost required over the 75-year analysis period.

	2010	2020	2030	2050	Average
12 monthly salaries	0.39%	0.36%	0.32%	0.24%	0.28%
10 million Rp., indexed to wages	0.21%	0.19%	0.17%	0.13%	0.15%
10 million Rp., indexed to inflation	0.20%	0.13%	0.08%	0.03%	0.06%

As we did for the pension program, the table below shows the cost of the government subsidies for the poor as a percent of GDP on both the pay-as-you-go and level funding financing methods for a death benefit equal to 12 monthly salaries. The cost for the flat amount benefit would be even less.

# poor workers	2010	2020	2030	2050	2070	Level
14 million	0.01%	0.01%	0.00%	0.00%	0.00%	0.00%
35 million	0.02%	0.02%	0.02%	0.01%	0.01%	0.01%
46 million	0.03%	0.03%	0.03%	0.02%	0.02%	0.02%
63 million	0.07%	0.06%	0.05%	0.04%	0.04%	0.05%

Source: Author's calculations

As can be seen, the cost of the death benefit program is quite small relative to the pension and old-age savings plans.

6. HEALTH BENEFITS

The health insurance program is designed to provide equal coverage to all Indonesian citizens. Like the other social insurance programs in the SJSN law, the health insurance program requires contributions from the formal and informal sectors. The formal sector makes contributions as a percent of payroll, while the informal sector pays a nominal amount and the government pays for poor citizens.

The benefit is required and necessary medical care. This includes visits to primary and secondary care specialists, hospitalization, surgery, pharmacy, laboratory tests and other necessary care to assure good health. The system is based on the managed care model. Each citizen has a primary care physician who serves as the focal point of the system. Except for emergencies, patients must first visit their primary care physician before seeing specialists or being admitted to hospitals. Health services will be provided through government-owned facilities or private facilities that have reached an agreement with the administrator of the health insurance fund. The administrators must negotiate rates with the association of health facilities in each region.

This program differs from the others in that it has arguably already begun. PT Askes already provides health insurance coverage to all civil servants and their families and used to provide coverage to poor Indonesians through the Askeskin health program. The Ministry of Health, through the Jamkesmas program, now provides coverage to 70 million poor Indonesians.

The financial management of the health insurance program will differ from the SJSN pension and savings programs for several reasons:

- All Indonesians are eligible for health benefits, not just those who have retired. This is a national health insurance program and not just a post-retirement medical program

- Required contributions are not impacted by the ratio of pensioners to workers. Rather, contributions are impacted by the total size of the population, the age/sex composition of the population, and the types, utilization and cost of covered

services. Ultimately, all Indonesians will be eligible to participate and someone will have to pay contributions for all participants.

- As the health sector develops, the availability and type of covered services and standard treatment methods will change dramatically. Therefore, it is much more difficult (and less necessary) to make long-range projections regarding the future cost of the program

- The required reserves will be much lower than in the pension system. In the old-age savings program, workers make contributions that are saved in an individual account for many years until retirement. In the pension system, population aging and the increase in the number of pensioners relative to workers requires the accumulation of a reserve to prevent large future increases in costs as a percent of payroll. In health systems, it is unusual to accumulate big reserves to prefund future increases in medical costs. Instead, contributions collected each year are designed to be sufficient to pay promised benefits, establish a claims reserve, establish a modest claims fluctuation reserve and cover administrative expenses. Reserves are needed to cover the risk of higher-than-expected claims due to random statistical fluctuations. For proper accounting, reserves are also needed for settlement of open claims and to cover the costs of claims that have been incurred in a particular accounting period but not yet reported. However, these reserves do not contain a "savings" or "prefunding" component like they do for pensions.

For all these reasons, the cost of the health insurance program is usually not projected for 75 years as we did with the pension programs. The government should focus on the projections for the first 10 to 20 years of the new system and not pay much attention to the projections for later years. As will be discussed later in this section, we assumed the benefit program would be fully phased-in by 2020, so this projection period is sufficient to show the financial impact of the phase-in.

Indonesia's social health insurance programs are currently administered by two perseros – PT Askes and PT Jamsostek. Of the two, Askes is by far the biggest. As of the end of 2008, Askes had approximately 20 million members while Jamsostek had about 1.3 million members. As previously mentioned, the Ministry of Health runs the Jamkesmas program for the 70 million poorest Indonesians. However, this program is tax-financed; it is not a social health insurance fund.

Askes has a large professional staff. It has 7 health insurance experts, 25 life insurance experts and 6 actuaries on its staff. It also has more than 100 employees with masters degrees or higher in business and financial management, hospital management, health insurance management, actuarial science and human resources management.

6.1 BENEFITS

The SJSN law specifies the type of health services that are to be provided to all Indonesian citizens based on need. Citizens will go to public or private health care facilities, clinics and hospitals to receive medically necessary care. Prescription drugs are also covered as part of the health insurance program. The health insurance fund is obligated to promptly reimburse providers for the services they provide to health fund members at pre-negotiated prices.

6.2 COST OF HEALTH PROGRAM

Once the range of benefits and services has been specified, the required contributions for the program are calculated based on the expected utilization rate and cost for each service. Based on discussions with Askes and Indonesian health experts, we assumed the package of benefits currently provided by the Askes programs for civil servants (with the adjustments outlined below) will be the benefit package under the SJSN national health insurance program. To the extent the estimated cost of this program is too high or the required resources are not available, the program's benefits may have to be adjusted or be phased-in over time.

To determine the cost of the benefit package under SJSN, we first studied the health care expenditures in 2005 and 2006 under the current Askes programs for civil servants and the old Askeskin program for the poor. Then we adjusted these costs for:

- Out-of-pocket expenditures (according to Askes, 40% of total costs in the civil service program are paid by users)

- Expected future improvements in service quality

- Gradual expansion of coverage to the entire population

- Medical expense inflation

- Increased utilization due to availability of insurance, expansion of facilities and increased citizen knowledge about the health insurance program.

- The current Askes health program provides broad health coverage, but program participants are not satisfied with the quality of care received. Many go outside the program, particularly for outpatient medical care. We have assumed these problems are resolved and participants take advantage of the outpatient medical services available through the SJSN social health insurance program.

The next table shows the breakdown of claims costs among primary care, secondary care and hospital care under Askes for civil servants, the poor and commercial insurance. The last column shows the percent of total claims for each group that is for primary and secondary care and hospital costs.

Covered Health Care Expenditures (millions of Rp)			
Primary Health Care Service			
	Civil Servants	192,431	9.6%
	Commercial	79,851	23.2%
	Poor	798,323	24.0%
	Total	1,070,605	18.8%
Secondary Health Care Service			
	Civil Servants	781,576	39.0%
	Commercial	93,240	27.1%
	Poor	395,623	11.9%

Covered Health Care Expenditures (millions of Rp)		
Total	1,270,439	22.4%
Hospitalized Care Service		
Civil Servants	1,031,420	51.4%
Commercial	171,239	49.7%
Poor	2,137,331	64.2%
Total	3,339,990	58.8%
Total Health Care Service		
Civil Servants	2,005,427	
Commercial	344,330	
Poor	3,331,277	
Total	5,681,034	

This table shows that expenses for civil servants for primary health care are a far smaller percentage of total health care services than for commercial insurance or the poor. This shows the extent to which civil servants are going outside the program for primary health care. Not surprisingly, the poor have a higher percentage of total expenses for hospital and a lower percentage for secondary health care than the other two groups. According to Askes, Indonesia has a shortage of physicians, particularly specialists, in rural areas. As a result, the poor must rely on hospitals for services that might otherwise be provided by physicians in more urban areas.

The table below shows other key statistics for 2006 for the three Askes health insurance programs – civil servants, the poor and commercial insurance.

	Number of Members	Premium per member per month (PMPM)	Cost per member per month (CMPM)	Loss ratio
Civil servants	14,274,776	16,045	11,707	73.0%
Poor	60,000,000	5,000	4,627	92.5%
Commercial	1,909,662	23,382	16,331	69.8%

At first glance, these figures appear wildly inconsistent with each other since all three groups have essentially the same coverage but the cost for the poor is far less than for civil servants, and the cost for commercial insurance is the highest of all. However, the figures are more consistent than they appear and yield important information about the likely cost of the SJSN health program.

- The premium for civil servants is lower than for commercial insurance because the maximum amount Askes pays to providers is set by the Ministry of Health (MoH). Public hospitals and clinics are not permitted to charge Askes more than this amount and in some parts of the country, providers agree to accept less than the rates set by MoH. However, in other parts of the country, like Jakarta, privatized hospitals and private clinics refuse to accept the MoH maximum as payment in full. In this instance, the participant is required to pay the excess of the usual charge over the Askes maximum. According to Askes officials, about 40% of the cost of medical care is paid out-of-pocket by plan members. Therefore, the required premium for civil servants needs to be adjusted to reflect these out-of-pocket costs if the SJSN health plan is to provide comprehensive coverage and properly reimburse providers

- The PMPM for coverage of the poor is only 5,000 rupiah, and surprisingly, the CMPM is just 4,627. This means in 2006 the premium was sufficient to provide the coverage. The logical question is why the cost for the poor for the same coverage is so much less than for civil servants or commercial insurance. The explanation, according to Askes officials, is that utilization is quite low and economies of scale keep administrative costs per person lower than for the other two groups. Although 60 million poor Indonesians are covered, only about 60% are actually using the medical insurance. There are several reasons for this low utilization:

    o Many poor Indonesians live far from the nearest clinics or hospitals and can't afford to travel there

    o Many don't trust "modern medicine" and prefer to use traditional cures and remedies instead

    o Many are not aware of the full range of services to which they are entitled

    o Poor Indonesians tend not to have access to or use expensive medical procedures.

    o The type of care typically required by the poor is different than for wealthier Indonesians. For example, the poor require more care for infectious diseases, which are less expensive to cure than diseases linked to modern life styles such as cancer and heart disease.

Over time, as the Ministry of Health constructs more clinics, hospitals and other facilities in more remote parts of the country, the program expands and citizens become more aware of their entitlements under the programs, many of the features that keep the cost lower for the poor than for the other two groups will disappear, leading to significantly higher overall costs.

Another reason for the relatively low costs of the current program is that the MoH is financing the construction of new facilities from the State budget. According to Askes, these costs are often not directly built into the overall pricing structure. The prices charged are sufficient to cover operating costs but in many cases are not sufficient to amortize the cost of facilities construction and the purchase or upgrading of equipment. This leaves the burden of repairing or replacing existing facilities and the purchase of new equipment on the State budget and this is a government subsidy to the health care system. As the pace of facilities construction accelerates, the government may need to increase its charges to amortize at least the costs of new construction and equipment purchases. The increased demand for primary and secondary medical care, x-rays and laboratory tests, medical equipment and new technology are also likely to cause medical costs to accelerate more rapidly.

Counteracting some of these increases will be the change in the legal structure of the health fund administrators and the increase in the number of members. Once the legal structure is changed, the health fund administrators will no longer need to pay taxes to the government. This will reduce their overall expenses, leading to a reduction in required premiums. As the program grows larger, economies of scale will also lead to reductions in unit expenses and more predictable and stable claim patterns. This should reduce the required level of contingency or claim fluctuation reserves.

It will also take time for the health insurance system to cover all Indonesians. Prior to the Askes program for the poor, most health clinics and hospitals were operating well below capacity. Hospital beds were only about 50% full and public clinics were open only about two hours per day. Now that the program for the poor has been implemented, hospitals are much closer to full capacity and clinics are remaining open more hours per day. As the program expands further, it will likely overload the existing health care infrastructure and create higher demand for facilities and doctors, particularly in remote regions. The expansion of health coverage will have to be synchronized with the government's and private sector's ability to provide needed infrastructure. The government's goal for full coverage is 2015, but Askes officials believe it might take until 2025 before the system can cover the entire population.

For purposes of our projections, we estimated the PMPM each year and multiplied by the assumed number of covered members (including dependants). We made the following assumptions when preparing these calculations:

- The percent of the population covered will increase from about 50% in 2007 to 100% by 2020. The increase in the covered percent will be linear. The percent of the population covered varies with the assumed number of poor because we assumed all of the poor are covered from the start of the SJSN health system

- The "true" cost of the insurance program for civil servants in 2006 is equal to the CMPM, adjusted for underutilization of primary care physician services and adjusted for the significant out-of-pocket expenses paid by civil servants for secondary physician and hospital services. The end result is a PMPM of 31,397 rupiah per person per month. This was calculated by dividing the claim amount for secondary physicians and hospital by 0.6 to adjust for the 40% out-of pocket expense. We then solved for adjusted claims for primary care physicians by assuming those costs will be 23% of total claims (the same percentage as the commercial insurance). Finally, we used the adjusted claims to calculate a revised CMCM and divided this by the current loss ratio to obtain a revised PMPM. These adjustments are shown in the table below.

(1) 2006 Claim Costs for Civil Servants (mill Rp)	
(a) Primary health care	192,431
(b) Secondary health care and hospital	1,812,996
(c) Total	2,005,427

(2) Adjust for out-of-pocket expenses (mill Rp)	
(a) Primary health care	192,431
(b) Secondary health care and hospital:	
(1)(a) / 0.6	3,021,660
(c) Revised total	3,214,091

(3) Adjust primary care expenditures (mill Rp)
(a) Primary health care: (2)(b)* 0.23 / 0.77   902,574
(b) Secondary health care and hospital   3,021,660
(c) Final total   3,924,234

(4) Calculate revised CMPM and PMPM
(a) Membership   14,274,776
(b) CMPM: (3)(c) / (4)(a) / 12   22,909
(c) Loss ratio for 2006   73%
(d) PMPM: (4)(b) / (4)(c)   31,397

- The ultimate cost of coverage for the poor will be equal to 90% of the cost for the civil servants. In 2006, the CMCM for the poor was only 28.3% of the CMCM for commercial insurance. This percentage will increase linearly to 90% by 2020

- Loss ratios for the health insurance program will gradually increase from an average of 83% in 2006 to 90% by 2020. This is due to the change in the legal structure of the administrators and economies of scale

- Medical cost increases each year will be 1% larger than increases in GDP. This will slowly increase medical costs as a percent of GDP and is intended to adjust for changes in medical care and technology as well are for the construction of new facilities and purchase of equipment.

Based on these assumptions, the total cost of the health program as a percent of GDP is shown in the table below. For purposes of this table, we assumed 35 million poor workers plus their dependants are covered on the health program start date. The costs in 2010 vary slightly depending on the initial number of poor because we assumed all informal sector poor are covered from the start date of the SJSN health program. By 2020, all workers are assumed to be covered so costs as a percent of GDP do not vary with the assumed number of poor after that date.

Year	Cost as % of GDP
2010	1.6%
2020	2.2%
2030	2.6%
2050	3.5%
2070	4.4%
Average	3.3%

Costs in the early years are low because the entire population is not covered and utilization is lower due to lack of sufficient facilities and providers in many areas of the country. However, we have assumed that by 2020, the entire population is covered and there are sufficient facilities to meet demand.

The health insurance program costs 3.3% on average over the 75-year period, but the cost is below 3.3% until 2044. By international standards, this is normal for developing countries which typically spend 3-4% of GDP on health. For richer countries health expenditures are normally between 8 and 10%.

However, this also means there will be (and should be) a role for private health insurance following introduction of the SJSN health insurance program. Those who want supplemental

coverage for non-covered services, coverage beyond the maximum limits in the SJSN program, or who want to have first class beds in hospitals or more flexibility in choosing service providers, for example, may be able to purchase additional health coverage from private insurance companies.

Note that this arrangement is very different from the current Jamsostek health insurance program where employers have the right to opt-out of the health program if they provide their workers with equivalent or better coverage through a private insurance company. When an opt-out is offered, large employers and those who employ workers who are in good health generally choose to leave the program. This leaves programs like Jamsostek with small employers, and workers whose health is worse than average – minimum wage earners, workers in hazardous industries, etc. This will inevitably lead to regular cost increases and declines in the number of covered members until the program ultimately collapses. This is a poor arrangement and must be prohibited under the SJSN health program.

In order to get economies of scale and spread risk over as large a group as possible, it is critical for everyone to participate in the base SJSN insurance program. If projected premiums are higher than expected, the benefits can always be scaled back from those originally planned in order to make the premiums affordable. Those who want additional coverage can choose to purchase it from a private insurance company. A base plus supplemental approach will not cause the financial problems associated with an opt-out approach.

6.3 COST FOR POOR

The cost of the health insurance program for the poor will be highest cost to the government of any of the five social insurance programs. Health insurance will also be the first program introduced and the first to cover the informal sector. The government is already providing tax-financed health benefits to approximately 70 million Indonesians through the Jamkesmas program.

However, the SJSN health program will differ from the Jamkesmas program in several respects. It will be based on the social insurance concept while Jamkesmas is tax-financed. The definition of the poor will also be different than the one used under the Jamkesmas program.

The government has not yet decided what the criteria will be for eligibility to receive contribution subsidies under the SJSN program. Consequently, we have estimated the cost to the government based on several assumed coverage levels. The table below shows the cost as a percent of GDP for several possible numbers of poor workers.

# poor workers	2010	2020	2030	2050	2070	Level
14 million	0.10%	0.30%	0.40%	0.50%	0.60%	0.44%
35 million	0.30%	0.70%	0.90%	1.20%	1.50%	1.06%
46 million	0.40%	1.00%	1.20%	1.60%	2.00%	1.41%
63 million	0.50%	1.40%	1.60%	2.10%	2.70%	1.93%

As can be seen, the number of poor workers and their dependants has a significant impact on costs. Costs also increase substantially over time. In the early years of the SJSN health

system the cost is relatively low due to low utilization by the poor. However, as time goes on, the cost of medical services increase due to an increased number of providers and facilities, greater knowledge and awareness about the system and increasing medical costs.

7. CONCLUSION

The SJSN design and financing decisions involve complex political and technical issues. For this reason, the process has taken up to 10 years in some countries. In some respects, the design and financing debate has been ongoing in Indonesia since at least 2004, but the critical decisions have been regularly deferred both during the drafting of Law No. 40 and after. Unfortunately, Indonesia cannot afford to further delay these decisions if it hopes to implement the SJSN programs in the next few years. By the end of 2009, fundamental decisions on legal structure, design, financing and administrative responsibilities must be made and translated into legislation to submit to Parliament and necessary Presidential and ministerial decrees.
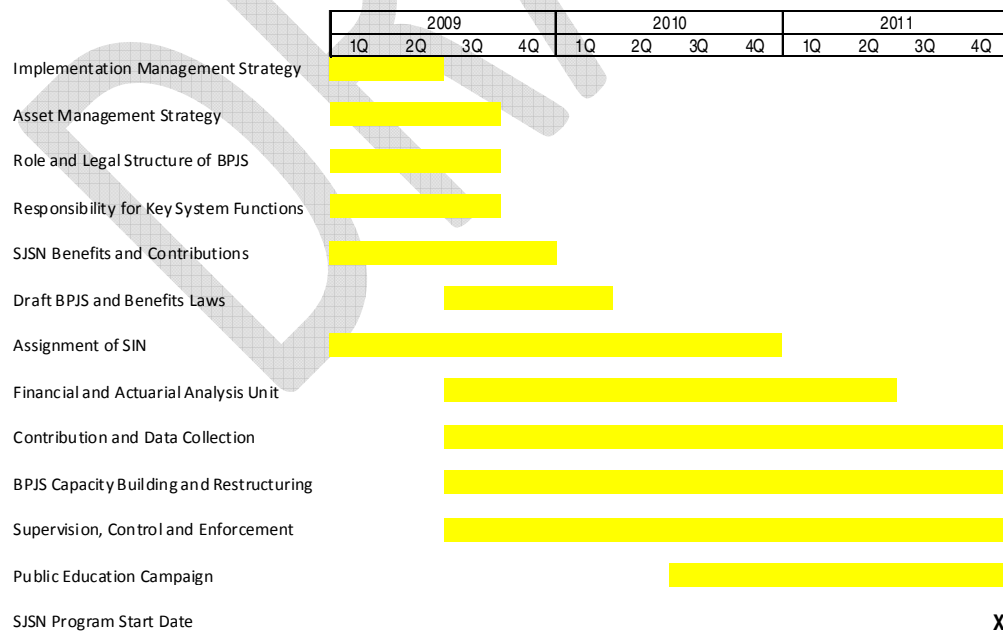
PART 3

PREREQUISITES FOR START OF SJSN SYSTEM

1. INTRODUCTION

The success of any social insurance reform program depends on the manner in which it is implemented. The best designed program will fail if the government fails to take the time to make sure that the business processes, administrative systems, IT systems, supervision and enforcement are in place prior to the time the system starts. The organizations responsible for running the system must also have the proper personnel and training to carry out their responsibilities professionally.

Most governments are surprised at the amount of time necessary to prepare the infrastructure to support their new or reformed social insurance programs. In the late 1990's, some governments tried to rush the start date of their programs with disastrous results. Computer records were lost, money was misallocated among individual accounts, individuals ended up with multiple social insurance numbers, and laws and regulations were not enforced. Over time, governments and international donors have come to understand that 2-3 years rather than 6 months is needed for preparation. Those countries that have taken the time to systematically implement their programs have achieved far more satisfactory results than those that have not. In fact, it has now become common to include preconditions for starting a reformed system in the law rather than specific start dates.

The table below shows a very broad implementation road map for Indonesia's SJSN system. It shows only the major steps and gives a rough idea of sequencing and required time frame. For some of the steps, the time frame for completion may be overly ambitious. For example, in some countries, agreeing on benefit and contribution levels alone has taken five years or more.

	2009				2010				2011			
	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q
Implementation Management Strategy												
Asset Management Strategy												
Role and Legal Structure of BPJS												
Responsibility for Key System Functions												
SJSN Benefits and Contributions												
Draft BPJS and Benefits Laws												
Assignment of SIN												
Financial and Actuarial Analysis Unit												
Contribution and Data Collection												
BPJS Capacity Building and Restructuring												
Supervision, Control and Enforcement												
Public Education Campaign												
SJSN Program Start Date												X

Note that all of these steps are prerequisites for the start of the system. If the system were to start before these preparatory steps were completed, there is a significant chance the system would not function correctly – contributions could be misallocated, individual

records might not be properly maintained, investments might not comply with applicable rules and regulations, etc. Extensive experience over the past 15 years has shown the importance of proper preparation for the launch of any new or reformed social insurance system.

This implementation table, although highly simplified, shows several key points which will be amplified throughout the remainder of this section:

- The implementation process must be properly managed at both a political and technical level. The structure for implementation management must be put in place now and maintained until at least one year after the new system has begun

- The decision on how to manage the assets in the old-age savings system will have a major impact on the structure and staffing of the BPJS responsible for this program. A decision on the asset management model should be made early in the implementation process

- The exact role and responsibilities of each BPJS is not yet clear. A clear allocation of responsibilities must be made early in the implementation process

- The government must decide who will be responsible for technical supervision and control of BPJS operations and who will be responsible for enforcement of the contribution requirements and technical operational requirements. This decision should be made early on so the relevant organizations can begin planning. It is best if contribution collection and enforcement are with the same organization

- None of the current BPJS truly have relevant experience in managing a national pension or old-age savings program. Each BPJS will have to carefully evaluate current and required staffing needs and make significant changes in their structure and workforce to accommodate its new responsibilities. Extensive training and capacity building will be required

- An extensive public education campaign is a critical component of the implementation process. This step is often overlooked entirely or badly underfunded. Separate campaigns may be needed for the general public, the media and Parliament

- The implied SJSN start date of January 1, 2012 is an aggressive target. Unless each of the steps outlined above is implemented with intensity and priority, it is unlikely the system will be ready to start on that date.

The government will likely need substantial assistance in preparing for the start of the SJSN system. New computer hardware will need to be purchased, software systems will need to be developed or significantly upgraded, assistance will be needed with the development of business plans and business processes, budget and staffing needs for each of the major functions must be developed, and extensive staff training will be needed. This will likely require significant assistance and coordination among international donors.

2. IMPLEMENTATION MANAGEMENT

One of the most important aspects of SJSN introduction is effective management of the implementation process. The government must recognize that the overall implementation effort will require a minimum of 2-3 years. This is the time required to design program benefits and contribution schemes, develop all of the IT and support systems required to administer the SJSN programs, and for capacity building and training in the organizations responsible for key aspects of SJSN administration. Consequently, the group or groups responsible for managing the implementation effort must remain in place for an extended period of time. These groups cannot be dissolved on the day the SJSN programs begin either. Regardless of how well the government plans, there will inevitably be difficulties in the first 6 to 12 months after the new system begins. It is important for the implementation management team to remain in place during this period of time as well.

This implementation process must be actively managed on a weekly or daily basis. Otherwise, it will inevitably fall behind schedule and the start date of the SJSN programs will be significantly delayed. Implementation issues inevitably fall into two categories – political issues and technical issues. For this reason, many countries have both a political and technical implementation working group. The technical group tends to meet more frequently and focus on day-to-day issues. The political group tends to meet less frequently, perhaps monthly, and deals with conflicts among institutions regarding roles and responsibilities as well as major strategic decisions regarding the implementation effort. The chairperson of the technical working group might also be a member of the political working group, or would at least attend all meetings of the political working group.

Experience has shown that implementation efforts will flounder unless it is clear that there is political support from the most senior levels of government. In Indonesia's case, support from the President is critical to the success of the implementation effort. It is also important to have a champion within the government who is dedicated to making the implementation a success.

The logical political group for implementation management is the DJSN. It has senior representatives of major stakeholders as well as outside experts. By law, it is charged with formulating policy and synchronizing administration of the SJSN programs and it reports directly to the President. Consequently, the DJSN is well positioned to make the difficult political decisions required to implement the SJSN programs. Many of these decisions must be made early in the implementation process if the SJSN programs are to begin as quickly as possible.

The SJSN law also gives the DJSN the authority to create and staff a Secretariat to provide technical advice to the Council. The Secretariat will also need staffing and an appropriate budget. The Secretariat is one possible organization for leading the technical implementation management. The technical implementation team will need representatives from all organizations responsible for the new social insurance system. There will also need to be implementation teams within each of the major ministries and institutions responsible for SJSN. This would include Menko Kesra, the Ministry of Finance, the Ministry of Health, the various BPJS and others.

Another important issue that the government must address is enforcement. SJSN is a mandatory social insurance program. All workers are required to make contributions. If the government establishes a mandatory program then it must be willing to enforce compliance. Otherwise, it shouldn't make the programs mandatory. The current situation with Jamsostek is an excellent example of what happens when a program is technically

mandatory but the government makes a limited effort to enforce compliance. It also illustrates the difficulties created when the organization responsible for collection does not have enforcement powers.

3. SJSN BENEFITS AND CONTRIBUTIONS

The biggest gap in the SJSN law is that is identifies the five social insurance programs but says little about the benefits to be provided and the required contributions to finance those benefits. Normally, the benefit and financing provisions make up the bulk of any social insurance law. This means the government must now take on the difficult political task of developing consensus among all stakeholders regarding the level of benefits and required contributions for each of the five programs.

The first two parts of this White Paper discussed the overall design and financing of the SJSN programs. Part 1 discussed the broad strategy for SJSN design and implementation, while Part 2 looked at the detailed design and financing options. As shown in the broad implementation time line earlier in this section, the design should be finalized and incorporated into draft legislation and decrees by the end of 2009. If the design and financing cannot be finalized by the end of 2009, then the SJSN implementation date will almost certainly be delayed.

Some work on the other required functions – contribution and data collection, supervision and enforcement, pension and old-age savings program administration, etc. – can begin prior to the time the design is finalized. However, the design of the detailed business processes and supporting IT systems cannot begin before then.

4. KEY SYSTEM FUNCTIONS AND BUSINESS PROCESSES

In order for the SJSN system to begin, certain key system support functions and processes must be developed and implemented. These include the following functions:

- *Issuance of single identification numbers*. Everyone participating in the SJSN system must receive a single identification number (SIN). It is important to assure that everyone receives a number and no one has more than one number

- *SJSN program administrative procedures*. The day-to-day functions that must be performed by the BPJS responsible for each of the SJSN programs must be identified and the business processes for completing those tasks must be developed

- *Financial management*. This includes determination of contribution rates, preparation of financial models and projections, calculation of reserves, preparation of actuarial reports, statistical analysis, preparation of statistical bulletins, annual reports, etc.

- *Contribution and data collection and enforcement*. Contributions and related individual data must be collected each month for everyone participating in the five social insurance funds. This process must be designed and automated. The government must also enforce payment of social insurance contributions and

penalize those employers and workers that fail to comply with applicable laws and regulations.

- *Supervision and control of administrators*. The SJSN law indicates that the Council is responsible for oversight of the activities of the administrators. However, the Council is a political body and will not have the staff and expertise to oversee the technical aspects of administrator operations

- *Public education*. The SJSN program provisions and the rights and obligations of members must be communicated to the general public. Citizens must also understand all of the institutions involved in the SJSN system and their respective roles. In addition, special public education campaigns are needed for the media to assure accurate reporting and for Parliament to be sure they understand the rationale, purpose and importance of the various programs and institutions.

The government must decide what organization(s) will be responsible for each of these functions and assure that organization has the staffing, budget and other resources it needs to operate effectively.

5. PENSION PROGRAM ADMINISTRATION

The assigned administrator for the pension program must operate a nationwide defined benefit system that will have 100 million contributors and will eventually have millions of beneficiaries receiving old-age, disability and survivor benefits. Key tasks for administering the pension program include:

- *Keep wage, contribution and service history*. If benefits will be based on average wages during a workers' career and years of contributions, then a full history of wages and contributions must be maintained. In most countries, the social security database is the largest database in the country

- *Determine benefit eligibility*. The administrator must review applications for benefits and determine whether the eligibility conditions have been met. For old-age benefits, there are age and years of contributions requirements. For disability, the administrator must determine whether the worker is totally and permanently disabled, and for survivor benefits, the administrator must confirm death and determine the number of beneficiaries eligible to receive benefits

- *Calculate benefits at retirement, disability or death*. The administrator is responsible for calculating the initial benefit amount

- *Maintain and update list of payment recipients*. The list of recipients must be updated whenever new benefit applications are approved and whenever a recipient is no longer eligible for benefits. Old-age and disability benefits stop on death and it is important to make sure payments do not continue to those who are dead. Survivor benefits can stop under a variety of conditions. For example, child benefits stop if the child is employed full-time or marries. As a result, eligibility for continued payment must be monitored regularly

- *Payment of monthly benefits*. Monthly pension payments must be delivered to each eligible recipient. Payments should ideally be delivered electronically to bank accounts, but in some regions, benefits might need to be distributed through social insurance offices, banks, the post office or some other means

- *Adjust benefit amounts for indexing annually*. Pension benefits are normally adjusted each year based on inflation, increases in nominal wages or some other basis. The adjusted amounts must be calculated each year and the payment amounts adjusted accordingly.

Arguably, Taspen has experience with these tasks. However, Taspen's experience is only as the administrator for an occupational pension plan. It covers a limited number of workers, all of whom work for a single employer, the government. Benefits are also based on last pay only, so there is no need to track full wage history. This is very different than a pension plan covering 100 million active contributors employed by thousands of employers and scattered throughout all of Indonesia plus (eventually) millions of beneficiaries receiving pension benefits.

6. OLD-AGE SAVINGS PROGRAM ADMINISTRATION

The administrator of the old-age pension program must operate a nationwide defined contribution scheme for all active workers. Contributions must be collected and invested and benefits must be paid out at retirement. Key tasks for administering the old-age savings program include:

- *Efficient processing of contributions into individual accounts*. It is important for contributions received to be quickly credited to individual accounts and be invested as soon as possible

- *Asset valuation, net asset value and unit value calculations*. On a daily basis, the fair value of assets, net asset value of the fund and unit values must be calculated and published

- *Individual account recordkeeping*. The number of units and nominal value of all individual accounts must be updated every business day

- *Process contributions and distributions*. Contributions and benefit payments must be processed at the end of every business day based on the closing unit value for that day

- *Portfolio management*. The assets in the old-age savings program must be properly managed. The assets can be directly managed by the staff of the administrator or some or all of the asset management can be outsourced. All investments must be made in compliance with applicable laws and regulations and pension portfolio management principles

- *Interface with custodian*. Typically a custodian holds title to old-age savings program assets on behalf of the program participants. The primary responsibilities of the custodian are safekeeping of assets, settlement of trades and protecting the interests of program participants.

It is important to realize that there are significant differences between administration of a provident fund such as the JHT program and the administration of a true old-age savings program. The table below summarizes the differences between the two types of programs. Although Jamsostek has administered a provident savings program, it does not have any experience administering a true old-age savings program.

Provident Fund	Old-Age Savings Program
Declared rate of return. The rate of return on workers' accounts are normally declared at the end of the year and need not be directly related to the actual rate of return on assets	*Credit actual rate of return*. The rate of return is credited to individual accounts based on changes in the fair value of assets every single business day
No explicit expense limits. The provident fund administrator often has no explicit limits on the amount of expenses it can incur. There are few incentives for efficiency	*Explicit maximum fees*. Fee levels are normally set on an annual basis and the administrator charges these expenses directly against individual accounts. It must manage its operations with the revenue generated from these fees
Update member accounts annually. Since the actual rate of return is not credited, the provident fund normally determines the amount it wishes to credit at the end of each year	*Update member accounts daily*. Member accounts are updated each and every business day based on the actual rate of return earned by the fund
Often use basis other than market value for portfolio. For example equities and bonds may be valued at cost, bonds may be valued at amortized value, or equities may be valued based on the average market value over some period of time	*Fair value of assets for portfolio*. Assets are marked-to-market each and every day. If assets are traded on a recognized exchange, the closing market value is used. Cost and amortized value are generally prohibited as a basis for asset valuation
Accounting separation of member and administrator assets. The provident fund is a single institution and the contributions of participants are part of the assets of the provident fund. The assets of the provident fund and its members are intermingled, though there may be an accounting separation of member and administrator assets	*Legal separation of member and administrator assets; use of custodian*. The members' assets are kept in a separate legal entity from the assets of the administrator. There is no intermingling of administrator and member assets. Member assets are normally held by a custodian so the administrator has no direct access to these funds

Provident Fund	Old-Age Savings Program
Portfolio management based on politics. Asset management decisions are normally made by the staff of the provident fund and are often influenced by political considerations rather than maximizing the rate of return to members	*Portfolio management based on maximizing return to members*. Asset management is normally outsourced to pension investment experts. The goal is to select investments to maximize returns to members while limiting risk

From this table, it is clear that very different skill sets are required to manage a true old-age savings program than a typical provident fund. The assigned administrator must acquire the skills and IT systems necessary to properly manage the old-age savings program.

7. FINANCIAL MANAGEMENT

Social insurance programs require sophisticated financial, statistical, actuarial and risk management processes. These are essentially insurance programs (except the old-age savings program, which is an investment management program) and their financial viability depends on proper risk management. In particular, sophisticated actuarial analysis and projection models are required. Some of the key financial management tasks include:

- *Preparing long-term projections, particularly for the SJSN pension program*. Due to changing demographics and the long period of time over which the pension program will be implemented, long-term projection models are needed. The short-term impact of new pension program implementation or program reform is often radically different from the long-term cost. Consequently, standard international practice for pension programs is to use models with at least a 75-year analysis period

- *Set contribution rates*. The true cost of any social insurance program is the total amount of benefits paid-out. Total payouts, of course, are only known after-the-fact, as they depend on a variety of factors including salary history, retirement age, inflation rates, mortality and morbidity experience, etc. Actuarial techniques can be used to estimate the timing and amount of these expected cash flows. In new social insurance programs, the amount of expected benefit payments may accelerate rapidly over time. For the pension program, the number of pensioners and the average benefit amount increases over time. For the health program, utilization and average costs tend to increase once social health insurance is introduced. The government must decide how to finance those costs. The SJSN law states that for the formal sector, contribution rates are to be a percent of wages and for the informal sector contributions will be a nominal amount. For the pension program, one of the key decisions the government must make is whether to finance the costs on a pay-as-you-go basis or whether to prefund some of the future pension costs. This issue was discussed in detail earlier in this White Paper

- *Calculate actuarial reserves*. All social insurance programs require the calculation of actuarial reserves. In a pension program, the reserves are the liability for benefits in

pay status plus reserves for pension benefits already earned by active workers. In a health or life insurance program, reserves must be held for existing claims that have not yet been paid, claims that have been submitted but have not yet been processed, claims that have been incurred but not yet reported to the insurance company, and claims related to premiums paid in advance for periods of coverage that have not yet been provided. For private insurance companies, the types of reserves and method of calculation are strictly regulated by the insurance division of Bapepam LK. The reserve standards for the social insurance programs must be similarly regulated

- *Gather and analyze statistics*. An important part of the management of the social insurance program is gathering and analyzing statistics. This is an essential part of the contribution setting process and is also necessary to update and improve the accuracy of the long-term projection models and to make recommendations for system changes and improvements. Today, many of the statistics needed for proper SJSN program management are not available. It is important for the government to identify and track key variables that affect the overall financial health of the system

- *Prepare annual actuarial report*. An actuarial report should be prepared for the social insurance system every single year. In addition, special reports should be prepared whenever changes to the existing system or changes in contribution rates or financing methods are considered. The primary purpose of the report is to:

    o Provide cash flow forecasts
    o Measure the system's unfunded liabilities
    o Evaluate the long-term actuarial stability of the system
    o Provide the actuaries opinion regarding the financial status of the system
    o Comment on any changes which the actuary feels should be made to preserve the financial integrity of the pension system

- *Prepare financial statements*. Financial statements must be prepared in accordance with Indonesian and international accounting and actuarial standards. Special charts of accounts are usually needed for social insurance programs and these should be specified by government regulation. The chart of accounts will also differ among social insurance programs. In accordance with the SJSN law, it is important for the system to be organized based on a trust concept, with participant assets legally separated from the assets of the administrators.

One of the key issues for the government is to decide what organization should perform these critical functions. A variety of models exist internationally.

- Separate Office of the Actuary that is independent of any one Ministry or social insurance program. Typically it reports to the Parliament, President or Prime Minister. This model is used in the United Kingdom

- Office of the Actuary located in a particular Ministry and serves all social insurance programs

- Office of the Actuary located in the social insurance fund and that serves just that fund. This model is used in the United States and many other countries that have just one social insurance fund

- Office of the Actuary located in one social insurance fund but serving all social insurance funds. This model tends not to work well, as the Office of the Actuary invariably meets the needs of the fund in which it is located before meeting the needs of others. The other funds also don't like the primary fund having access to their data and other sensitive information

- No centralized Office of the Actuary. Each social insurance fund has its own actuarial staff and prepares its own analysis and reports.

For a developing country with a variety of social insurance funds and a very limited actuarial profession, one of the first two options would seem to make the most sense. There should be a central office providing all financial, statistical and actuarial services to all the social insurance funds. For Indonesia, this Office could logically be located in the Council Secretariat, the Fiscal Policy Office of the Ministry of Finance, or within Bapepam LK.

8. ASSET MANAGEMENT FOR OLD-AGE SAVINGS PROGRAM

In order for any defined contribution system to be successful, contributions must earn the maximum possible rate of return that is reasonable given the purpose of the fund. In other words, since workers' pensions will depend on the ultimate account balance:

- Investments should not be so conservative that the rate of return will be too low

- Investments should not be overly aggressive or speculative and risk large losses

- Investments should be in securities that are frequently traded and can be quickly bought or sold as market conditions change

- Investment should be well diversified to avoid the risk of large losses

- Investment management and administrative fees must be controlled. Small reductions in rate of return, when compounded over many years, can significantly reduce the ending account balance

- Proper governance procedures must be in place to assure transparency, accountability and disclosure for the pension system as a whole and for the investment management process.

The SJSN law does not explicitly state what asset management model should be used. Pension asset management is a specialized activity that requires very different skill sets from old-age savings program administration. The trend worldwide is to separate administration and asset management and to hire private sector pension experts to manage the pension assets on behalf of participants.

The typical arguments advanced for the State to manage the assets of an old-age savings program are:

- Private funds have high advertising and marketing costs. By having a single State-run fund, these costs can be avoided

- Private fund managers are in business to make money and their fees include a margin for profits. These profit margins can be avoided by having the State manage the assets

- The portfolios of mandatory private pension funds are very nearly identical in many countries, so there is no real competition and choice anyhow. It is much simpler to just have a single State-run fund

- With only a single State-run fund, a separate regulatory agency is not needed and oversight of the process is much simpler than when there are many competing funds

- There is no need for an elaborate process to license fund managers, suspend licenses, impose penalties, etc.

On the other side, there are many arguments raised against State asset management and in favor of private management of pension fund assets.

- A single government-run fund is a monopoly. There are no incentives to run the fund efficiently or maximize returns

- The government is likely to invest the money in its own best interests, loaning money to itself at below market rates, investing in favored political projects and in businesses that have strong political ties to the current ruling party

- The investment portfolio usually contains very conservative investments that are unlikely to have sufficiently high rates of return

- Investments are selected based on political criteria rather than internationally accepted portfolio management principles

- Governance procedures are usually inadequate and there is no effective regulation or oversight of the State-managed fund

- It is impossible to fire the State if its performance is poor and participants have no one to complain to if administrative services or investment results are poor.

- A government bureaucracy is unlikely to focus on high-quality customer service

- State funds often credit a declared rate of return rather than the actual return on plan assets.

All of these arguments are applicable in Indonesia, and as a result, Indonesia should consider private and private/public partnership options to assure the old-age savings plan assets are professionally managed in accordance with international best practices.

Some examples of each type of model from a wide variety of countries are listed below:

- In Thailand's Government Pension Fund (GPF), the fund staff is responsible for asset management. The fund has the option, but is not required to outsource some of the asset management to private firms

- In Malaysia and Singapore, a central government provident fund is responsible for managing savings plan assets. In both countries a small portion of the assets can be allocated to funds run by private asset managers

- In India's new pension system for government workers (NPS), the government will conduct an international tender to award asset management licenses to a limited number of companies. Each company that receives a license will be required to establish three standardized funds with different investment objectives and level of risk. Workers can select among companies and type of fund

- In the United States Thrift Savings (TSP) program for government workers, a separate Thrift Savings Plan Board is responsible for managing the program. It outsources the asset management function to private companies through an international tender. The selected asset manager establishes 6 different index funds with different investment objectives. Participants can allocate their contributions among these index funds

- In Sweden, workers create their own investment portfolio by allocating contributions among licensed open-end investment funds (mutual funds). There are hundreds of licensed funds available with very different investment objectives

- In Kosovo, there is a single mandatory accumulation fund administered by the Kosovo Pension Trust (KPT). The KPT sets the investment policy for the fund. However, private asset managers are hired through a tender process to manage different portions of the pension fund portfolio.

- In Bolivia and Macedonia, the government conducted an international tender to award pension asset management licenses to two pension companies. A two-round tender process was used. In the first round, those companies with proper credentials, business plans and financial strength were identified. The second round was based on lowest fees

- In most of Eastern Europe and Latin America, assets are managed by licensed private pension companies. The government awards licenses to manage mandatory pension fund assets to all firms meeting specified criteria. The pension companies establish the fund's investment policy and create portfolios within the guidelines contained in the pension law. Workers select the pension fund they wish to join.

All these examples show that actual practice ranges from fully privatized schemes to fully State-run schemes. In between are public-private partnerships with functions allocated between the State and private sectors.

Indonesia should consider public/private models, delegating the asset management function for the old-age savings program to the private sector. The DJSN would be responsible for investment policy and the BPJS would be responsible for overseeing the performance of the private fund managers rather than managing the assets itself. This would provide a cleaner separation of management and oversight responsibilities that is lacking under the JHT program and should improve the rate of return to participants by providing professional pension asset management.

9. CONTRIBUTION AND DATA COLLECTION

Indonesia must decide what organization(s) will be responsible for contribution and data collection and enforcement. Since Indonesia's social insurance system will use multiple administrators, it doesn't make sense for each administrator to separately collect its own contributions and data. This will be inefficient since each administrator will need its own staff and IT system for contribution and data collection and enforcement. It will also be burdensome on employers as they will need to prepare and submit reports to up to four separate organizations each month rather than just submitting all needed information once.

There are several options available for selecting the organization responsible for contribution and data collection, verification and reconciliation. The most common options are:

- One of the BPJS can collect for everyone. This BPJS receives the data and contributions for all funds and then sends the appropriate information and amounts to each fund

- A special organization can be established for just this purpose. This was the model followed in Croatia. It established a new entity that collected and distributed data and contributions. It also had responsibility for enrollment and individual account recordkeeping for the old-age savings program

- The tax authorities can collect. This is the model preferred by the IMF. However, the tax authorities must give proper priority to the collection of social insurance contributions compared to tax collection. It also must focus on collecting from all employers and for all workers and not just focusing on those debtors who owe the most money.

There are five distinct steps in any effective contribution and data collection process for social insurance programs.

- *Registration of all employers and workers:* All employers who are required to contribute and their workers must be identified and registered. Changes must be made whenever employers go out of business, new businesses are created, there are changes in employment, etc. The self-employed must also be registered

- *Contribution collection*: This is the process by which the collecting organization receives and records contributions from those who are required to pay. In some countries, contributions and data must be submitted together to the same organization. In other countries, the data and contributions are submitted separately and a reconciliation process must take place

- *Data collection*: The data gives information about each individual employee for whom contributions were made. It should identify the employee in some unique way (SIN, for example) and show information regarding wages/income and contributions to each social insurance fund for each worker. The organization collecting data need not be the same as the one collecting contributions, but the process is simpler if same organization is responsible for both. For example, the tax administration may collect contributions while the social insurance organization(s) collects data

- *Reconciliation of contributions and data*: This is often referred to as the control function. An organization must determine whether the data is accurate and complete, and if the contribution amounts paid match the submitted data. If not, the control organization must contact the employer to resolve any discrepancies

- *Enforcement:* If the government believes that an employer is evading completely, or is not paying the correct amount for each and every worker and no amicable agreement can be reached, then the government must take action to collect what is owed. Actions could include anything from fines for late payment to legal action to seize and liquidate employer assets to settle obligations.

The steps described above are quite different from the current situation in many countries, where contribution collection for social insurance programs is treated as a passive process in which the responsible organization simply processes the money it receives with insufficient regard for its accuracy and timeliness. This method might be acceptable for a voluntary savings program. However, for mandatory government-sponsored social insurance programs, the administrative organization or organizations have a far greater responsibility.

The goal of the contribution collection process is to timely and efficiently collect the correct amount of payroll contributions from each and every employer and worker who is required to participate, and collect, store and ensure the accuracy and safety of individual data. This requires a change in mentality and approach to the contribution collection process:

- The collection organization must think of themselves as debt collectors rather than bank tellers. They must proactively collect the correct amount of contributions rather than just accepting whatever comes in the door

- Contribution and data collection must be linked. Each month, the contributions paid should match the submitted data. The data submitted should be consistent from month-to-month and should match the data submitted to the government for other purposes, such as payment of taxes

- Data should be submitted electronically using standardized software developed and distributed free of charge by the collection organization. The software should be designed to validate data and prevent the input of clearly incorrect or inconsistent data

- The collection organization must have proper accounting control procedures. Contribution revenues should come into special bank accounts for each fund and should not be mixed together with other revenues

- The responsibilities for enforcement must be clearly defined in the law and in written agreements between various government institutions.

To make this process run smoothly, it must be automated and fully electronic. This requires the development of sophisticated IT systems and standardization of the way in which employers report data to the contribution collection organization.

Under Indonesia's current system, the perseros are responsible for contribution and data collection and reconciliation. However, they do not have authority to take enforcement action. This responsibility lies with the labor inspectors of the Ministry of Manpower and it is not being performed effectively. As a result, approximately 75% of all formal sector employers are evading their responsibility to register and pay contributions to Jamsostek with little or no apparent consequences.

10.   CONTRIBUTION COLLECTION ENFORCEMENT

The government should not establish a mandatory system unless it is willing to enforce the provisions of the law. The current "mandatory" Jamsostek system has a 75% evasion rate and even those who pay do not contribute the full correct amount. If the system is mandatory, then the government must proactively collect the full correct amount of contributions from everyone who is required to pay and payments must be made on-time.

Late payments, particularly in the old-age savings program, result in lost investment income and lower benefits at retirement for participants.

This means the government must decide which organization will be responsible for enforcement. That organization needs an automated method of identifying those employers and workers who are in default and needs a systematic series of steps to claim and collect amounts that are owed. In the event of non-compliance, the government needs the authority and the willingness to impose administrative penalties, collect monetary penalties, and in more extreme cases, to impose liens or freeze and liquidate assets in order to collect.

The government also must have proper status as a creditor in order to collect back contributions owed in the event of bankruptcy. There should also be a system for tracking companies with deteriorating financial condition and for taking proactive action to collect before the company is completely bankrupt. In many countries, responsibility for contribution and data collection and responsibility for enforcement rests with different organizations. This is the case in Indonesia today where Jamsostek is responsible for contribution and data collection but the Ministry of Manpower is responsible for enforcement.

Experience shows that social insurance contribution collection is most effective when the organization responsible for collection also has enforcement authority for the following reasons:

- Coordination among different organizations can be very difficult, even when intentions are good

- If different organizations are responsible, there will inevitably be delays in the enforcement process

- The organization responsible for enforcement often has many other responsibilities and insufficient staff and knowledge to collect social insurance contributions

- The social insurance administrator is in the best position to enforce because of its large number of local offices and strong knowledge of local employers.

Of course, the enforcement organization will also not be effective if it doesn't have trained staff, proper business processes and the IT systems to support its efforts. Inspectors must have detailed knowledge of all the social insurance schemes, all relevant laws and legislation and the proper legal process for enforcing payment obligations. This organization will also need proper governance procedures and business processes just like those for other key functions:

- Proper number of inspectors to perform full on-site inspections when non-compliance is suspected

- Business processes, IT systems and control procedures that can screen data and identify likely cases of non-compliance

- Case management software to track the progress of all enforcement actions in progress

- Performance benchmarks and reviews for inspectors.

11. SUPERVISION AND CONTROL OF BPJS

According to the SJSN law, the Council will be responsible for harmonizing the activities of the BPJS. However, this is not sufficient. It is important for the technical activities of the administrators to be supervised and controlled by the government as well in order to protect the interests of participants.

In many countries, the social insurance institutes are not properly managed. There is effectively no oversight of their operations. The social insurance institute is put under a particular ministry. Often these ministries end up spending their time providing political protection to the social insurance institute rather than tightly supervising their activities. In Indonesia's case, the regulation of the existing perseros is spread across many different ministries and the precise division of responsibilities is not as clear as it could be.

It is important for the government to clearly stipulate what organization(s) are responsible for supervision and control of the various BPJS. The responsible institution could vary by social insurance fund or could be the same for all. As discussed earlier, Indonesia has two logical options for supervision and control of the BPJS. They are Bapepam LK and the Council Secretariat.

Whatever organization is selected will need to supervise and control technical aspects of BPJS operations. This will require the issuance of technical regulations and other guidance, and annual on-site audits to assure compliance. The supervisory agency can also electronically gather and analyze data from the BPJS on a periodic basis to help assure compliance. Issues requiring regulations and supervision include but are not limited to:

- Reporting requirements to participants
- Financial accounting standards and charts of accounts
- Privacy and data security requirements
- Requirements for contents of pension database
- Detailed methodology for pension benefit calculations
- Procedures for disability claim applications, denials and appeals, etc.
- Investments and the investment process for the old-age savings scheme
- Required claims data and statistical requirements for the health insurance system, etc.

The supervisory agency will also have to decide what type of paradigm it will use for its operations. Many of the pension supervision agencies in Europe and Latin America are heavily focused on daily off-site supervision and proactive prevention of problems as opposed to reacting to problems and complaints as they occur and relying on on-site audits as the primary means of detecting irregularities. This decision will have a significant impact on the staffing and IT requirements for the supervisory agency.

12. PUBLIC EDUCATION

A public education campaign is a critical component of the SJSN implementation. Most Indonesians are probably not familiar with the SJSN law, the five new social insurance

programs that it creates or the purpose of these programs. They are probably also not aware that they will be required to participate and make contributions.

Similarly, there are probably very few members of the media that are aware of and understand the issues surrounding the introduction of the SJSN law. Yet the success of the SJSN implementation may depend to a large extent on its positive portrayal in the media. Positive and accurate newspaper articles, TV shows and radio programs can create a good image for the new social insurance programs, while inaccurate or negative reporting can greatly complicate the government's implementation efforts. For this reason, special attention must be focused on educating and informing the media about the SJSN implementation.

It is also critical to educate the Parliament and government workers in key institutions about the new SJSN programs. The SJSN law is very broad and a series of additional laws and decrees will be required to fully implement the new social insurance programs. Those laws will have to be approved by the Parliament and it is important to explain the need and rationale for those programs to key members of Parliament. Most of the government policy makers and Parliamentarians who worked on the SJSN law in 2004 no longer occupy the same positions today. Consequently, there is very little institutional memory about the need and rationale for the SJSN law. A new education effort targeted at Parliament and key ministries is needed so there is a common understanding.

The first step in most public education programs is polling and focus groups. It is important to find out what people know about the SJSN law and what their attitudes are toward the reforms and various government institutions. It is also important to find out what media sources people in different parts of the country use to get news and information. This will help target the public education campaign to the right issues and help make most effective use of the public education budget.

There are many different types of media that can be used in the public education campaign. The government needs to determine the right mix of communication alternatives for Indonesia. This will be based on culture, region and budget. Possibilities include:

- Television
- Radio
- Call centers
- Government regional and local offices
- Web sites
- Newspaper inserts
- Infomercials
- Interviews/ talk shows
- Town hall meetings, etc.

Some of the key aspects of the public education campaign (particularly with respect to the pension and old-age savings programs) are summarized below. Similar explanations will be needed with respect to the other social insurance programs.

- *Explain retirement income strategy.* The government needs to clearly articulate a retirement income strategy. This strategy will explain to citizens how the government-mandated retirement income programs work and what type of benefits they are expected to provide. It will also articulate the role of occupational

pensions, individual pension savings and other sources of retirement income in meeting the financial needs of workers following retirement

- *Explain rationale for design of SJSN pension and old-age savings*. The government needs to explain the role of the pension and old-age savings program in the overall retirement income strategy. The two programs serve very different purposes and the role and expected benefits from each program should be clearly explained

- *Communicate structure of the new system and the role of all participating organizations*. Citizens need to understand all the different organizations involved in the SJSN social insurance programs and what their roles are. They need to understand the role and responsibilities are of the DJSN, BPJS, employers and workers. They also need to know what organizations are responsible for contribution collection, actuarial analysis, supervision and control and enforcement

- *Explain member rights and obligations*. Members must understand what benefits they are entitled to, what contributions they must make, how to apply for benefits and how to enforce their rights.

Undoubtedly, other topics will need to be included in the public education campaign and many of these issues will be identified through the polling and focus group process. The programs for the general public, media and Parliament will also differ from one another in some respects.

13. ORGANIZATIONAL DEVELOPMENT

Once responsibilities for key SJSN administrative functions have been assigned, those organizations that are responsible will have to put together a business plan, budget, staffing plan, detailed business processes and an implementation plan for those carrying out their responsibilities.

- *Organizational structure*. The organizational structure of a new or existing institution must be created or modified to reflect its new responsibilities

- *Job descriptions*. The organization must assess the type of personnel needed to carry out the newly assigned functions. Job descriptions must be written with education and experience requirements appropriate for those responsibilities

- *Staffing authorization*. The government must authorize the new staffing needed for the assigned organizations to carry out their functions. Often the staffing authorization significantly lags behind the need for the staff and it is difficult for the organization to effectively plan for its new responsibilities

- *Budget*. The organization will need the budget for staffing, capital equipment and administrative expenses necessary to carry out its responsibilities. Due to the nature of government budget cycles, it often takes considerable time to get additional budget resources approved. In the short-run, this can also make it difficult for the assigned organization to implement its new responsibilities

- *Business processes*. The assigned organization must determine how it will carry out its new responsibilities. This includes identification of all required inputs and their

sources, the control procedures to be performed by the organization, the outputs to be produced and the users of the output information

- *Appropriate IT hardware and software*. Most of the business processes will require new computer hardware and new or upgraded software systems for effective implementation. It is important to automate as many of the business processes as possible to make the system cost effective and efficient

- *Training and development plan*. Existing and new staff will have to be trained in their new responsibilities. This may include a variety of different programs such as in-house training, attendance at international seminars, internships, independent study, etc.

This is a highly detailed process that will require interaction among multiple organizations within and outside the government. As the various business processes are developed, many questions regarding responsibility for various functions will arise. As these issues are resolved, it is best if the decisions are formally documented using Memoranda of Understanding or some other similar instrument.

PART 4

CONCLUSION

In this report we have documented the rationale for the design and financing of the SJSN social insurance programs. All programs have been designed to fit within previously determined cost parameters to assure that the programs do not become a burden on the State budget, workers or employers. The programs are also designed to provide a base level of benefits to everyone. It is explicitly recognized that workers may need to supplement benefits from the SJSN programs with personal savings, private insurance and pensions and other sources to fully provide for all their needs.

This report primarily focuses on the design and financing of the SJSN pension, old-age savings and death benefit programs. Additional analysis will be required, particularly for the health program. Detailed actuarial analysis will be needed to determine the cost of the proposed health benefits package and to decide what type of benefits should be included and excluded from the SJSN health program. This will require projection of future expected utilization rates and average costs for various types of medical care. The government will also have to anticipate the impact of future increases in coverage and the impact expansion of providers and the insurance program itself will have on utilization.

A great deal of data and assumptions were needed to prepare the analysis presented in this report. It is of utmost importance for the government to review the data and methods used to develop the key inputs to the computer models.

- The assumptions used for population and labor force projections must be carefully reviewed and any necessary adjustments must be made in the computer models

- The average wages in the data we were given appear to be too low. It is important to reconcile the average wage data with macroeconomic data regarding labor income as a percentage of GDP. Accurate average wages are also needed separately for the formal and informal sectors

- Pricing of wage caps and minimum benefits can only be properly completed once the average wage issues have been resolved

- Additional information regarding the number of poor and their average wages is needed in order to prepare projections of the cost of the SJSN programs to the State budget.

This report also identified the key steps in the SJSN implementation process and the order in which those steps should be performed. The key administrative functions have been identified and this report includes a brief discussion of the primary business processes for each function.

Many policymakers will be surprised at the number of tasks and the length of time required to prepare for the start of the SJSN system. Most countries require at least 2-3 years of preparation before starting their new or reformed social insurance programs once the administrative and governance structure has been defined, and the benefits and financing paradigm for each program have been decided.

In order to meet this time frame, successful countries focus on the implementation tasks intensively on a full-time basis. Without political and technical leadership, the implementation period can stretch out over a much longer time period or implementation may never take place. The main points to keep in mind regarding the implementation process are:

- *Implementation must be carefully managed over an extended time period*. Both political and technical working groups will need to be put in place and these groups must remain active over a period of years. To maintain momentum, the implementation process must be backed by strong political support from the highest levels and by a strong technical leader

- *Responsibility for key system functions must be decided quickly*. The government must decide what organization(s) will have responsibility for (i) contribution and data collection, verification and reconciliation; (ii) financial, statistical and actuarial analysis; (iii) asset management in the old-age savings program; (iv) technical supervision and control of administrator operations; (v) enforcement responsibility for contribution payment and compliance with applicable laws and regulations

- *Detailed design of the SJSN programs must be a 2009 priority*. This is a complex task that has taken more than five years in some countries. It remains to be seen whether Indonesia will be able to quickly develop consensus among key stakeholders or whether the process of building consensus will take much longer. Program design will have a big impact on the type and complexity of administration needed for the various programs

- *Development of institutions and IT systems is likely to take 2-3 years (or more)*. The current administrators do not have truly relevant experience for management of a nationwide pension program or old-age savings program. The administrators responsible for these programs will have to be properly staffed and trained. In addition, the development of highly automated contribution and data collection systems, issuance of needed regulations and development of off-site supervision systems will take significant time

- *Aggressive system start date is 1 January 2012 if implementation is properly managed*. This start date assumes the government makes the SJSN implementation a top priority and maintains the implementation effort and commitment over an extended period of time. The proper management structure must be put in place, roles and responsibilities must be quickly assigned, and staff and budget resources must be made available to allow all relevant organizations to take on their new responsibilities. Delays in any of these functions will result in a later start date.