Financial Sustainability of the National Health Insurance in Indonesia: A First Year Review

Policy Brief

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Jaminan Kesehatan Nasional (JKN) is a national health insurance scheme that was launched in 2014 by the Government of Indonesia (GOI). The aim of the scheme is to provide insurance to the entire Indonesian population and to protect it from health-related financial shocks. A new insurance carrier, BPJS Kesehatan, has been established to implement the scheme.

In 2014 the JKN scheme exhibited a rather large financial deficit with a medical claim ratio of 115%. This policy brief presents an assessment of the medium-term financial sustainability of JKN over the next five years. In our actuarial analysis and projection of health service claim data we assume that there will be an increase in the number of JKN members, increased utilisation of health care services and moderately higher health care unit costs. Based on these assumptions, we project that the deficit incurred in 2014 will continue to grow in the next few years and that this trend may jeopardise the health insurance scheme.

One short-term solution should be a re-evaluation and adjustment of the contribution rates. However, restoring a dynamic equilibrium between revenue and expenditure cannot solely rely on increasing revenues. To ensure the financial sustainability of JKN, a careful scrutiny of multiple factors, such as health care unit prices, and the implementation of reasonable cost-containment measures are necessary.

**Introduction**

Indonesia introduced JKN, a unified, contribution-financed social health insurance scheme in 2014, which currently has 145 million members. The contributions for the poor and near-poor are paid by the government. In 2014, 86.4 million people were eligible for contribution assistance (known as PBI) and the GOI spent IDR 19.9 trillion (equivalent to US$ 1.43 billion) financing PBI.

On the one hand, the JKN policy design and implementation have made remarkable progress in the first year since it came into being. In contrast to the various health insurance schemes that existed before the reform, JKN promotes equity as it provides the same services for all population groups, irrespective of income or employment status.

JKN has a comprehensive benefit package that covers services from infectious diseases to open-heart surgery, dialysis and cancer therapies. From a health care system perspective, JKN also improved strategic purchasing of health care services. For instance, it has implemented a provider contracting system, a national formulary and coherent provider payment systems (capitation and case-based groups, CBGs). As such, JKN demonstrates promising progress in improving access to health care services (see also the policy brief "Out-of-Pocket Payments in the National Health Insurance of Indonesia: A First Year Review").

Will the JKN programme be financially sustainable? This brief aims to examine the evidence of the scheme’s mid-term financial sustainability and to suggest further practical health policy options.

On the other hand, questions about the scheme’s financial sustainability have persisted during the first year of JKN’s operations. Many critics doubt whether JKN’s budget will be sufficient to cover the, at least on paper, unlimited and comprehensive service benefits. For instance, while the government’s allocation of IDR 19.9 trillion for the PBI members more than doubled compared to the 2013 budget allocation for Jamkesmas, the former insurance programme for the poor, it still amounts to only IDR 19,225 (equivalent to US$ 1.4) per person per month. This per-capita contribution subsidy is significantly lower than current actuarial estimates of a sustainable premium suggest.

This need to strengthen JKN’s financial stability resulted in a request to provide evidence for further decision making and better coordination of the programme’s stakeholders. The National Social Security Council (DJSN), with support from German Development Cooperation, commissioned the CHAMPS FKM Institute of the University of Indonesia to conduct a study on the "Financial Sustainability and Coverage Effectiveness of the JKN Programme: A First Year Review". An actuarial analysis was conducted to estimate the scheme’s financial situation. This brief provides a summary of the results.
Balancing Revenue and Expenditure

Financial sustainability is a core principle of social security. In this policy brief, we define JKN’s financial sustainability as a positive financial state in which fund revenues exceed fund expenditures (Figure 1).

Figure 1. Financial sustainability of the JKN programme

**JKN fund revenues and expenditures**

Like most social security schemes, JKN fund revenues are generated from member contributions. According to Presidential Regulation No. 111/2013, JKN contributions are obtained from the following categories of members:

1) Poor and near-poor members (Penerima Bantuan Iuran, PBI), whose contributions are fully subsidised by GOI at a rate of IDR 19,225 per month.
2) Salaried formal employees (Pekerja Penerima Upah, PPU) in the public and the private sector who pay a contribution equivalent to 5% of their salary (4% paid by the employer and 1% by the employee).
3) Non-salaried workers in the informal sector (Pekerja Bukan Penerima Upah, PBPU), the unemployed (Bukan Pekerja, BP) and self-employed pay a fixed contribution between IDR 25,500 and 59,500 per month.

The majority of JKN revenues are spent on health care benefits. The JKN benefits, i.e. health care services, are delivered by provider-networks who have contract arrangements with BPJS Kesehatan. Most primary and secondary care services are paid by capitation and CBG tariffs, respectively. The payment mechanisms and tariffs are defined by the Ministry of Health (MOH) with details laid out in MOH Decree No. 69/2013 Jo 59/2014. The remaining JKN contribution revenue is used for the so-called loading charges of the scheme. These include operational costs, such as personnel and non-personnel costs and reserves. Budget allocation for health care benefits accounts for 90% of the contribution revenue, with the remaining 10% used for loading charges.

**Actuarial Analysis**

An actuarial analysis was conducted to determine whether JKN’s revenues and expenditures will be balanced in the coming years. Specifically, the analysis was done to:

1) estimate JKN revenue based on (a) membership numbers and (b) contributions;
2) estimate medical costs via (a) utilisation rates and (b) costs for primary and secondary health care services;
3) estimate medical claim ratio; and
4) forecast JKN’s financial state in the future.

The base year for the projections is the fiscal year (FY) 2014. The medical costs for JKN benefits were estimated by separately projecting the number of cases (measured in terms of claims) and the health service unit cost. The actuarial analysis used several datasets, including data on population, number of members, number of claims and average service cost. For the estimation of utilisation rates and unit costs, we used claims data for the period of one year including information on CBG, the region and hospital characteristics.

The respective data sets came from two main sources: Data on membership and utilisation in 2014 were obtained from BPJS Kesehatan, unit cost data were constructed from the MOH Decree No. 69/2014 Jo 59/2014. Five consecutive steps were taken to analyse JKN’s financial sustainability (Figure 2). Below we describe each step and the corresponding results.
Step 1: Estimated number of JKN members

As the number of members increases steadily, the first step was to estimate the number of insured for FY 2015-2019. We used the number of JKN insured in FY 2014 as the base number. According to the BPJS data, the membership number for FY 2014 was 124 million, about 49% of the population.

The number of insured for the FY 2015-2019 was projected forward in accordance with the GOI’s target of Universal Health Coverage (UHC). In FY 2015, the membership is estimated to reach 156 million, or 61% of the population and rise up to 241 million (90% of the population) in 2019 (Figure 3).

Step 2: Estimated health care utilisation rate

The utilisation rate of health care by JKN members was calculated by dividing the number of cases in 2014 by the number of insured. The calculation used the BPJS database, which contains approximately 31.6 million cases, consisting of inpatient (5.1 million) and outpatient cases (26.5 million), and about IDR 32 trillion in paid charges.

Unsettled cases in the FY 2014 were forecasted with the chain ladder method which is a common approach for predicting incurred but not yet reported or not yet settled claims based on cumulative amount of known claims. We then applied both stochastic and non-stochastic estimations. The former resulted in about 10% adjustment, the latter estimation yielded a lower correction factor of 6.9%.

The estimated utilisation rate for care in FY 2014 was 22.8 cases per 1,000 members per month. Compared internationally, health care utilisation is still very low in Indonesia. Dominant trends observed within the JKN system and in the country’s public health circumstances, e.g. a rapid increase of non-communicable diseases, suggest utilisation will increase in near future. Moreover, the GOI’s plan to invest in the health care supply side, which has been a bottleneck to accessing care, supports this assumption. Taking these factors into consideration, we used the following set of assumptions:

- First, the utilisation rate for inpatient care would increase by 7% for FY 2015 and 2016 and by an additional 3% for FY 2017 and 2018.
- Secondly, there would be an increase in the use of outpatient care by 5% for FY 2015 and FY 2016, and 3% subsequently for FY 2017 and FY 2018.

The resulting estimated rates for FY 2014-2019 are presented in Figure 4. The figure shows that the estimated rate for FY 2019 would be 26.8 cases per 1,000 members per month.
Step 3: Estimated health care cases

The estimated utilisation rate of FY 2014-2019 was then used to calculate the total number of cases treated each year in this period. We multiplied the estimated average number of insured in the FY 2014-2015 with the estimated utilisation rate. This calculation gave us the total number of cases that might occur per year (Figure 5). While this estimate was made by separately projecting the number of cases per disease type (constructed from the CBG codes), Figure 5 only presents the total number of cases for both inpatient and outpatient care. Detailed projections on the number of disease types are available upon request.

Figure 5. Estimated number of cases (million) for FY 2014-2019

Step 4: Estimated health care costs

Health care costs are the product of the number of cases and the average price. The CBG tariffs vary by region and hospital characteristics. There are five regional CBG price groups and the following classification of hospitals which have associated CBG price factors:

- Class A hospitals offer a broad range of highly specialised services and have more than 400 beds;
- Class B hospitals usually operate multiple specialties and have at least 200 hospital beds;
- Class C are general hospitals with basic specialist services in internal medicine, obstetrics and gynaecology and pediatrics with minimum 100 hospital beds;
- Class D hospitals provide general services and have a minimum of 50 beds.

We adjusted the estimated medical costs by region and hospital class.

Medical cost estimations were done separately for out- and inpatients. The average CBG prices were stable for FY 2015 and were then assumed to increase by 7% and 8% for the FY 2016 and 2018 respectively. This assumption is very modest, compared with the current inflation trend in the country.

Estimation of medical costs for benefits that are reimbursed by capitation, as well as services paid according to specific prices (non-capitation and non-CBGs) was based on historical spending in 2013. For simplicity, these types of services are referred to as "non-CBGs". For the purpose of projections, we assume non-CBGs average costs change at the same rate as CBGs average costs. Figure 6 presents the resulting JKN health care costs. Based on our assumptions, the total costs are projected to increase to IDR 122.4 trillion in 2019, i.e. IDR 42,248 per member per month (PMPM), implying an annual increase of 6.6%.

Figure 6. Estimated health care costs (IDR trillion) FY 2014-2019

Step 5: Estimated claim ratio

Table 1 presents the current state of JKN’s financial balance based on the contribution revenue and health care costs PMPM. In 2014, the estimated costs PMPM were IDR 31,812, while the average contribution amounted to just to IDR 27,696. Dividing the costs by the contribution results
in a claim ratio of 114.9%. It is obvious that JKN contribution levels are inadequate to cover the health care services, resulting in a deficit of about 15% or IDR 4,116 PMPM.

In future, the average JKN contribution could rise from IDR 27,696 PMPM to IDR 34,020 PMPM in 2019, an average increase of 4.6% a year. This projected rise is predicated on rising salary levels in the formal sector, a higher share of members from the informal sector, an increase of PBI subsidies and an assumedly better collection rate.

<table>
<thead>
<tr>
<th>Table 1. Financial state of the JKN programme, 2014-2019</th>
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<tbody>
<tr>
<td>Contribution*</td>
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<tr>
<td>Health care costs*</td>
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<tr>
<td>Claim ratio (%)</td>
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<tr>
<td>Saldo (Deficit)**</td>
</tr>
</tbody>
</table>
*Except the claim ratio, all values are in IDR, per member per month
**Not taking into account loading charges

The projections in this brief could be further refined by considering additional data - especially on the demographic characteristics of patients and JKN members. Currently we assume that usage patterns would be the same for members already covered and new members to enrol in future. However, this assumption could only be backed up by analysing the demographic (and maybe social) profiles of these two groups. Moreover, health care prices should be linked to the growth of salaries in the formal sector, as the salaries of medical personnel will develop accordingly. These potential elaborations could further enhance the accuracy of calculations and provide more precise in depth information.

**Policy implications**

As a result of the JKN deficit accumulated during 2014, the GOI had to pay a bailout of IDR five trillion in 2015. This approach does not address the root problem and only puts the brakes on the current deficit. Under the given circumstances, it is highly likely that JKN’s financial deficit will continue to increase if there are no systematic efforts to counteract it. Increasing the number of members will not by itself solve the financial problem in the short run since an increase in JKN contribution revenues will not be proportional to the health care costs. As such, the programme needs several systemic interventions to overcome the main sources of the problem. Below we specify several policy options that should be implemented simultaneously.

**Key Policy Options**
- Revise contributions
- Embrace cost-containment
- Rationalise health care reimbursement
- Promote efficiency

**Revise the contributions**

The JKN scheme is funded mainly through member contributions. The results presented in this brief show that the current contribution rates are too low to cover the medical benefits provided under JKN. Hence, revising the contribution rates is an
urgent policy option and highly recommended. This re-evaluation and potential revision is in line with Presidential Decree No. 12/2013 Jo No. 111/2013. A contribution revision also seems highly appropriate given the changes in available data, adjusted methods of provider payments and health care tariffs compared to the ones applied when calculating the contribution rates in 2013.

The revision should consider the contributions for PBI and informal workers (nominal PMPM) as well as for formal sector employees (percentage of wages). A close collaboration with all key stakeholders is highly recommended to decide upon contribution levels. New contribution levels must be based on a rigorous actuarial analysis and meet several principles (see Figure 8).

However, any nationwide health insurance scheme with open-ended (i.e. without a budgetary limitation) performance-oriented payment of health care tends to become unsustainable sooner or later. So-called soft caps on service volumes, i.e. price discounts above a set volume of services, for health care facilities should be considered. Such caps, or volume-price agreements, between the insurer and providers are standard best practice in social health insurance schemes worldwide.

Caps on volumes could accommodate the major drivers of health care cost. When designed carefully, such arrangements do not constrain utilisation of services but rather contribute to more stable and predictable health care costs.

**Rationalise health care reimbursement**

In view of the expected increase in utilisation, it is crucial to focus on careful design of provider reimbursement. In particular, the continuous adjustments of reimbursement tariffs should be linked with impact analysis on the overall JKN budget. Further improvements in the JKN medical claim reviews (e.g. random checks of patient documentation) would help to reduce up-coding and fraud-related extra costs.

**Promote efficiency**

Facing severe cost constraints, the JKN benefit package could be designed more explicitly using an evidence-based approach. Institutionalising health technology assessments (HTA) to produce information about cost effectiveness of medicines and interventions would help to organise care provision in a more cost-effective manner and result in better value for money.

Moreover, monitoring the expenditure and provision of medicines as one of the major cost blocks in JKN is a key measure for cost control. So far, the reimbursement and information systems of BPJS do not allow for explicit measuring and evaluation of medicine costs. Especially in view of the persisting out-of-pocket spending on medicines by patients (see our policy brief on Out-Of-Pocket Health Payments by JKN Members) the challenge extends beyond the sustainability of JKN to financial protection of JKN members.

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**Figure 8. Principles for formulating the new JKN contributions**

<table>
<thead>
<tr>
<th>Principle</th>
<th>Description</th>
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<tbody>
<tr>
<td>ADEQUATE</td>
<td>To pay JKN cost and debt</td>
</tr>
<tr>
<td>SUSTAINABLE</td>
<td>To maintain the balance for the next years</td>
</tr>
<tr>
<td>(mid term)</td>
<td></td>
</tr>
<tr>
<td>EQUITABLE</td>
<td>To account for ability to pay</td>
</tr>
<tr>
<td>ATTRACTIVE</td>
<td>For new members to enroll</td>
</tr>
<tr>
<td>REASONABLE</td>
<td>To pay appropriate provider tariffs</td>
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Conclusion

JKN is one of five programmes comprising the National Social Security System in Indonesia. Great progress has been made in implementing the scheme since it was established in 2014. However, financial sustainability is a key factor in achieving long-term JKN objectives. Our actuarial analysis shows that under current circumstances the funding gap in JKN will increase in the coming years. Policymakers should urgently consider steps to balance JKN’s finances to render the system more stable in future.

Acknowledgements

We would like to sincerely thank the Board of Directors of BPJS Kesehatan for granting us access to the claims data and other important information as well as for connecting the research team with the hospitals sampled in the study. We are grateful to the Ministry of Health especially the Director of the P2JK Unit and his team who have provided valuable inputs during the preparation of the study and facilitated that the results of the study were taken into account by the Government of Indonesia (especially in the modification of the contributions). The completion of this study would not have been possible without the great expertise and commitment of CHAMPS FKM UI.

Imprint

Published under the Indonesian-German Social Protection Programme (SPP), a programme jointly implemented by the Indonesian Ministry for National Development Planning and GIZ implementing the German contribution on behalf of the German Federal Ministry for Economic Cooperation and Development (BMZ).

Jakarta, November 2015

Photo credits by: Kantor Berita Antara