Kyrgyz Republic

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Pensions

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US$1.00 = KGS 53.9615

Weights and Measures
Metric System

ACRONYMS AND ABBREVIATIONS

DFID  UK’s Department for International Development
ECA  Europe and Central Asia
EU  European Union
FFDC  Fully Funded Defined Contribution
GDP  Gross Domestic Product
NDC  Notional Defined contribution
OECD  Organization for Economic Co-operation and Development
PER  Public Expenditure Review
PAYG  Pay-as-you-go
PROST  Pension Reform Options Simulation Toolkit
SECO  Swiss Economic Cooperation Organization

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1. Executive Summary

1. Today, the Kyrgyz pension system plays a major role in poverty alleviation of the elderly but this role is diminishing fast due to low coverage of working age population. The system currently provides pensions to more than 90 percent of the population over age 65 thus being a significant buffer against poverty. Over time, though, the poverty reduction effect of the pension system is expected to weaken substantially as the current low coverage rates among the working age population translate into much lower coverage rates of about only 60 percent for the future old age population. As a result, poverty rates among the old-age population will grow and government spending on social pensions will increase dramatically.

2. The cost of the system to the government, as well as to the working population, is already high and continues to grow rapidly. The consolidated public pension expenditures financed by the Social Fund and the state budget have increased over the past few years to a very high level of 8.2 percent of GDP in 2011, with continued growth to 11-12 percent projected over the next several decades. Government's share in the total public pension expenditures has been increasing as well, mostly as a result of the on-going transfer of basic pension financing to the state budget, and is projected to reach 65-70 percent of total public pension spending in the long run.

3. The growing burden of pension system financing is driven mostly by pension system demographics. The system dependency ratio is already quite high (40 percent) due to a combination of low coverage among working age population and almost 100 percent coverage of the elderly. As the population ages, the system dependency ratio will continue to grow reaching 70-80 percent over the next four decades. Significant early retirement exacerbates the problem.

4. At the same time, adequacy of pensions is becoming critical as relative pension levels are falling due to insufficient indexation of contributions in the notional defined contribution (NDC) component. If the indexation formula is not fixed today, new retirees will see their insurance pensions drop by 1/3 relative to their wages in about a decade. The average pension as a share of the average wage is projected to decline from the current 45 percent to inadequate levels of 25 percent within the next three decades. Farmers and other self-employed are especially affected as they pay very small contributions and receive almost nothing from the NDC component. The issue of pension adequacy raises concerns about social sustainability of the system and the risk of pressure on the government to increase pensions with further fiscal implications.

5. In addition, certain design features of the pensions system provide disincentives to contribute to the pension system. Declining pension levels relative to earnings, the growing redistributive nature of the system as the share of the basic pension in the total labor pension increases and the high contribution rate may discourage workers from contributing to the pension system. This may result in more workers moving to the informal sector or increased underreporting of wages in the formal sector, thus increasing the burden of financing labor pensions on the remaining contributors and the government.

6. Overall, the system needs further reforms to address the key challenges. A number of broad reform options are recommended for consideration. The main objective of the proposed reforms is to ensure adequacy of benefits, provide better incentives to contribute, maintain financial sustainability of the pay-as-you-go (PAYG) component, and contain the cost of the system to the government. The following options are considered:
• Fixing the contribution indexation mechanism by moving to indexation of the entire balance and linking the indexation parameter to the average wage growth rate.

• Moving from the current discretionary policy of pension adjustment to price indexation of post-retirement pensions.¹

• Introducing an automatic link of the statutory retirement age to life expectancy changes so that life expectancy at retirement is maintained constant.

• Re-design of the basic and social pensions by replacing them with a demogrant, a universal flat benefit with eligibility based solely on age (suggested at 65) and residency.

• As a fundamentally different approach, consider moving to a noncontributory system focused on basic income support for the elderly and leaving room for voluntary arrangements.

7. **The structure of this chapter is as follows.** The next section provides an overview of the current pension system and the main issues facing it. Section 3 presents the results of the financial projections for the current system assuming a no-reform scenario and the implications of doing nothing on the finances of the Social Fund, the cost to the government and the expected benefits (baseline projections). Section 4 considers several broad reform options and their impact with respect to the financial sustainability and affordability of the system as well as adequacy of benefits. Section 5 outlines the issues remaining beyond the scope of this study which require further analysis. Annex 1 summarizes the main parameters of the current pension system and Annex 2 provides a brief description of the main assumptions used in the projections and the projection methodology. The diagnosis of the current system and the evaluation of the reform options presented in this chapter are based on the simulations produced with the World Bank Pension Reform Options Simulation Toolkit (PROST) model.

### 2. Overview of the Current Pension System

8. **The Kyrgyz Republic manages a complex pension system.** The national contributory pension system in the Kyrgyz Republic is a multi-component scheme which covers all salaried workers employed in the formal sector, along with individual farmers and other self-employed workers. There is also a separate non-contributory pension scheme for the military which is fully financed from the state budget. Those who do not qualify for a pension from either of these schemes upon reaching the statutory retirement age receive a social pension. This chapter focuses on the analysis of the national contributory pension system which accounts for about 80 percent of the total public pension expenditures.

9. **The national contributory pension system underwent systemic reforms in 1997-1998.** At that time it was converted from a pay-as-you-go defined benefit to a notional defined contribution (NDC) system. It was further substantially amended in 2010 with the introduction of a fully funded defined contribution (FFDC) component. As a result of these reforms, the current scheme comprises four components: basic pension, transition component (SP1 pension), NDC (SP2 pension) and FFDC components. The key parameters of the current contributory pension system are summarized in Annex 1. The general structure of the overall national pension system – contributory and non-contributory – is shown in the table below.

¹ Recent trend over the last several years has been approximately in line with the average wage growth.
10. **The system, managed by the Social Fund, covers old-age, disability, and survivorship programs.** It is financed by member contributions as well as budget transfers earmarked for certain types of benefits. Since 2010, the state budget finances an increasing share of basic pension payments, which is expected to reach 100 percent by 2014. In addition, the Social Fund functions as a payment agency for other benefits financed from the state budget, such as military pensions, energy compensation for pensioners and benefits for privileged pensioner groups.\(^2\) Table 1 presents the main performance indicators of the Kyrgyz national pension system in 2011.

### Table 1. Components of the National Pension System

<table>
<thead>
<tr>
<th>Source of financing</th>
<th>Benefit type</th>
<th>Basic pension (contributory)</th>
<th>SP1 pension</th>
<th>SP2 pension</th>
<th>Funded defined contribution</th>
<th>Non-contributory</th>
</tr>
</thead>
<tbody>
<tr>
<td>State budget</td>
<td>Flat benefit (12% of economy-wide average wage)</td>
<td>23% contribution rate</td>
<td>2% contribution rate</td>
<td>Social pension</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Earnings-related (defined benefit)</td>
<td></td>
<td></td>
<td>State budget</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Notional defined contributions</td>
<td></td>
<td></td>
<td>Flat benefit (about 2/3 of basic pension)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Fully funded defined contributions</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Source: Authors.*

### Table 2. Main Indicators of the National Pension System, 2011

<table>
<thead>
<tr>
<th>Number of contributors, thousand</th>
<th>1,184</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>Salaried workers</em></td>
<td>708</td>
</tr>
<tr>
<td><em>Farmers</em></td>
<td>413</td>
</tr>
<tr>
<td><em>Self-employed</em></td>
<td>63</td>
</tr>
<tr>
<td>Number of beneficiaries, thousand</td>
<td>466</td>
</tr>
<tr>
<td><em>Old-age</em></td>
<td>331</td>
</tr>
<tr>
<td><em>Disability</em></td>
<td>87</td>
</tr>
<tr>
<td><em>Survivors</em></td>
<td>48</td>
</tr>
<tr>
<td>System dependency rate: all beneficiaries/contributors</td>
<td>39%</td>
</tr>
<tr>
<td>System dependency rate: old-age pensioners/contributors</td>
<td>28%</td>
</tr>
<tr>
<td>Old-age population dependency rate: population at retirement age+/population age 15 to retirement age</td>
<td>10%</td>
</tr>
<tr>
<td>Coverage rates:</td>
<td></td>
</tr>
<tr>
<td>Contributors, percent of working age population</td>
<td>34%</td>
</tr>
<tr>
<td>Pensioners age 65+, percent of population at age 65+</td>
<td>91%</td>
</tr>
</tbody>
</table>

\(^2\) The Social Fund also collects contributions for and transfers them to the Health Insurance and Health Care Funds (the combined contribution rate to the two funds is 2.25 percent). These cash flows are excluded from the analysis of the national pension system finances.

\(^3\) All benefit payments financed from the state budget, except for the basic pension, are excluded from the analysis. Energy compensation and benefits paid to privileged groups are considered in the social assistance chapter. Military are covered by a separate pension system: non-contributory, defined benefit, with a generous benefit formula. Currently, there are about 15 thousand pensioners, their average monthly pension in 2011 was 5,272 soms and the total payments amounted to 1,053 million soms, or 0.4 percent of GDP. It is likely that the cost of the military system will grow as longevity increases, however, in-depth analysis and financial projections would require more detailed data which have not been made available to the World Bank team.
### Table 2. Main Indicators of the National Pension System, 2011

<table>
<thead>
<tr>
<th>indicator</th>
<th>value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average monthly wage of contributors, soms</td>
<td>6,980</td>
</tr>
<tr>
<td>Economy wide average monthly wage, soms**</td>
<td>9,221</td>
</tr>
<tr>
<td>Average monthly old-age pension, soms</td>
<td>3,000</td>
</tr>
<tr>
<td>Average old-age pension as percent of average contributor wage</td>
<td>43%</td>
</tr>
<tr>
<td>Average old-age pension as percent of average economy wide wage</td>
<td>33%</td>
</tr>
<tr>
<td>Contributions paid, mln soms (percent of GDP)</td>
<td>15,036 (5.5%)</td>
</tr>
<tr>
<td>PAYG component</td>
<td>13,886 (5.1%)</td>
</tr>
<tr>
<td>FFDC component</td>
<td>1,150 (0.4%)</td>
</tr>
<tr>
<td>Benefit payments, mln soms (percent of GDP)</td>
<td>16,395 (6.0%)</td>
</tr>
<tr>
<td>Financed by the Social Fund</td>
<td>13,582 (5.0%)</td>
</tr>
<tr>
<td>Financed from the state budget</td>
<td>2,812 (1.0%)</td>
</tr>
<tr>
<td>Administrative and other expenses, mln soms (percent of GDP)</td>
<td>1,201 (0.4%)</td>
</tr>
<tr>
<td>of which administrative costs (percent of Social Fund expenditures)</td>
<td>784 (5.3%)</td>
</tr>
<tr>
<td>Accumulated assets, beginning of the year, mln soms (percent of GDP)</td>
<td>2,457 (0.9%)</td>
</tr>
<tr>
<td>PAYG component</td>
<td>1,639 (0.6%)</td>
</tr>
<tr>
<td>FFDC component</td>
<td>818 (0.3%)</td>
</tr>
</tbody>
</table>

*Source: Social Fund data.*

**Notes:** *Number of families.** The difference between the average wage of contributors and the economy wide average wage stem from different data sources and methodology. The average wage of contributors is derived directly from the administrative data of the Social Fund on about 700,000 contributors. The economy wide average wage is estimated by the National Committee for Statistics using wage bill and employment data from about 400,000 employers (mostly larger companies). The differences in the methodology include, for example, taking into account sick leave and other. In the fiscal projections presented in this chapter wages of contributors are used whereas the basic pension by law is linked to the economy wide average wage.

### Summary of the Key Issues with the National Pension System

11. **The pension system of the Kyrgyz Republic faces a number of challenges going forward.** Overall, as a result of the 1997 systemic reform and efforts to improve pension system administration, the financial position of the Social Fund has improved significantly. However, the current system still faces some serious issues and requires further reforms. Based on the analysis of the current status of the Kyrgyz national pension systems, and on future trends if no changes are made, the most important issues can be summarized as follows:

- Low coverage of working age population today will result in low coverage of the elderly in the future, contributing to higher poverty rates among the elderly along with high cost of social pensions for the government.
- The current system dependency ratio, which is already relatively high, is expected to continue growing due to aging of the population thereby increasing the burden on pension system finances.
- Significant early retirement contributes to high levels of the system dependency rate.
- Inadequate contributions indexation mechanism generates low SP2 pensions, which will reduce insurance pensions relative to wage levels once SP1 pensions fade away. The basic pension fails to ensure adequate benefit levels.
• A high share of basic pension in the total labor pension makes the system highly redistributive and undermines the link between contributions and benefits, which may discourage workers from contributing to the system.

• The high contribution rate may also encourage evasion and underreporting of wages as well as have a negative impact on the labor market and broader economy.

• Basic pension financing becomes a huge burden on the government, in addition to the growing cost of social pensions.

• Financing the basic pension from the state budget may also raise some equity issues. Since the basic pension is paid only to the covered population, as coverage decreases the basic pension becomes more and more redistributive through using general revenues to pay benefits for a smaller and smaller population group.

• At the same time, in the future the Social Fund is expected to generate substantial surpluses as a result of high contribution rates and low insurance pensions.

• Farmers and other self-employed pay very small contributions which, when they retire, will generate negligibly small SP2 pensions, so these groups will have to rely on the basic pension.

12. The rapidly growing government expenditures on basic pensions and falling pension levels are the most pressing issues calling for urgent reforms. Though the Social Fund appears to be fiscally sustainable, its financial health is achieved at the expense of the shift of basic pension financing to the state budget as well as shrinking insurance pensions due to improper indexation of contributions. These troubling trends raise concerns about both fiscal and social sustainability of the system already in the near future. In addition, the high contribution rate and the weakening link between contributions and pensions may adversely affect the labor market and the economy at large.

Current Status of the National Pension System

13. Pensions account for more than half of all social spending in the Kyrgyz Republic. The national pension system expenditures in 2011 stood at 6.4 percent of GDP of which central government covered 16 percent through basic pension financing. In addition, the government spent 1.8 percent of GDP outside the national pension system: on military pensions, benefits for privileged pensioner groups and energy compensation for pensioners. Thus, the overall public pension expenditures amounted to about 22.5 billion soms, or 8.2 percent of GDP, with the government financing almost 35 percent of the expenditures. Public pension spending levels have increased over the past few years: from below 5 percent in 2007-2008 to a higher plateau of 8.6 percent in 2010 and 8.2 percent in 2011.

![Figure 1. Central Government Budget Pension Spending (Percent of GDP)](chart)

*Source: Social Fund data.*
Government’s share has been growing as well, mostly as a result of the on-going transfer of basic pension financing to the state budget. Prior to 2010 the entire cost for basic pensions was covered by contributions to the Social Fund; however, starting from 2010 the share of central government budget in financing basic pensions has been increasing by 20 percent per year, and it is expected to reach 100 percent by 2014. Figure 1 shows recent trends in the Government’s pension-related spending.

Figure 1.

14. **By international standards, pension spending in the Kyrgyz Republic is high, particularly for a young country.** Though in general countries with younger population tend to spend less on pensions, the Kyrgyz Republic stands out with its spending level at 8.2 percent of GDP and only 4.3 percent of population over 65 (Figure 3). Since pensions in the Kyrgyz Republic are not generous, the main factor driving up pension costs is high coverage of the old-age population inherited from the soviet pension system, which covered almost 100 percent of the working age population.

15. **A significantly higher share of the population in the Kyrgyz Republic receives pensions compared to countries with similar demographics.** The total number of pensioners is 466 thousand, of which 71 percent receive old-age, 19 percent receive disability and 10 percent receive survivorship pensions. The ratio of the total number of old-age pensioners to the population over 65 in the Kyrgyz Republic is 142 percent – much higher compared with the averages for regions dominated by countries with young population like Asia, Latin America, Middle East, Africa (Figure 4). In the Kyrgyz Republic, this indicator is well above 100 percent because, in addition to almost full coverage of the population over 65 (91 percent), there are a large number of old-age
pensioners under age 65. The latter results from lower than 65 retirement age and abundant provisions for early retirement. The statutory retirement age is 63/58 for men/women, whereas the effective retirement age is only 60/53, with a possibility for some categories (e.g. working in hazardous conditions) to retire as early as age 50 for men and 45 for women.

**Figure 4. Total Old-Age Pensioners**

(Percent of population over 65)

[Bar chart showing old-age coverage ratios across different regions.]

Source: World Bank Pension Database.

16. **High old-age coverage plays a major role in poverty alleviation of the elderly in the Kyrgyz Republic.** However, given the low participation rates in the pension system among today's working age population, old-age coverage rates are likely to substantially decrease over time thus increasing the risk of falling into poverty for future elderly.

17. **The contributors' base is very narrow.** A total of 1,184 thousand contributors are currently paying contributions to the Social Fund. This is only half of all employed, or 34 percent of the working age population. While pension system design may have some built-in incentives encouraging or discouraging people from joining the system, to a greater extent low coverage in the Kyrgyz Republic is a developmental problem, mostly driven by the high degree of informality of the labor market. A strong correlation between coverage and economic development level has been observed around the world. The 34 percent coverage rate in the Kyrgyz Republic is comparable with parts of Latin America where the average per capita income is similar to the Kyrgyz Republic. The regional average coverage rate for transition economies in Europe and Central Asia, most of which have higher per capita income, is significantly higher at 47 percent; the OECD average is almost double the Kyrgyz rate – about 70 percent. Coverage rates by region are shown in Figure 5.

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4 The statutory retirement age was increased from 60/55 to 63/58 in 1999-2007.
5 World Bank estimates for the Kyrgyz Republic show that with the poverty line set at the total median income the poverty rate among 60+ year olds is 35 percent whereas without pensions it would have been 76 percent. The poverty rate for the elderly is lower than for the non-elderly population (52 percent).
6 Here working age population is defined as population age 15 to the current statutory retirement age of 63 for men and 58 for women.
A low participation rate in the pension system of the working age population poses problems both in the short- and long run. In the short term, fewer contributors in a pay-as-you-go system mean current pensions must be financed either through higher contribution rates and/or through government subsidies. In the longer term, as mentioned above, today’s low contributor coverage will translate into future low beneficiary coverage. So, a growing share of old-age population will not be eligible for a labor pension and government spending on social pensions (which is currently insignificant) will increase greatly.

**Figure 5. Average Coverage Rates by Region**
(Percent of relevant population definition)

![Figure 5: Average Coverage Rates by Region](image)

Source: World Bank Pension Database.

With high beneficiary and low contributor coverage, the system dependency rate is quite high at 39 percent, i.e. only 2.6 contributors support one pensioner. Furthermore, while salaried workers make up around 60 percent of total contributors, they contribute 97 percent of total revenue, with the other covered workers (mostly farmers) making negligible contributions. If we take into account only salaried workers, i.e. those making substantial contributions, we get even higher system dependency ratio, about 65 percent, or only 1.5-1.6 contributors per pensioner. This puts the Kyrgyz Republic among countries with the highest levels of system dependency rates like Lithuania, Russia, Hungary, Romania, Finland, Austria, some other European countries.

Adequacy of benefits in the national pension system is another concern. In 2011, the average monthly old-age pension was 3,000 soms, or less than 80 percent of the minimum subsistence level for old-age estimated by the National Committee for Statistics. Though in 2012 it increased to 95 percent of the minimum subsistence level, still more than 60 percent of pensioners remained below the poverty line as defined by the national statistics. At the same time, if compared with World Bank poverty line estimates for the Kyrgyz Republic, the average pension does not look that low: about 140 percent of the absolute and 230 percent of the food poverty line. Relative to wages, current pension levels can be considered rather reasonable by international standards, though on a lower end: in 2011 the average old-age pension was 43 percent of the average wage of

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7 The system dependency rate is a ratio of the number of pensioners to the number of contributors in the pension system.
the covered population. However, there is a troubling trend for replacement rates to decrease, which is driven by some built-in benefit design features discussed below.

21. **Pension levels are determined by the benefit structure and indexation policy for post-retirement benefits.** Currently, benefits calculated at retirement consist of three components: (1) basic pension, (2) transition, or pre-reform portion (SP1), and (3) NDC, or post-reform portion (SP2). SP1 and SP2 together form the earnings-related part of pensions, or what the law calls “insurance” pension. In the future, an FFDC part will be added either in the form of a regular benefit or a lump sum.

22. **The basic pension component is a flat benefit paid in full to pensioners with a minimum 25/20 years of contributions (men/women).** The benefit is paid on a prorated basis to those with shorter careers. It is currently set at 1,500 soms, or about 15 percent of the average wage of contributors estimated for 2013, and increases in line with wage growth. The share of the basic pension in the total average old-age pension is large—37-38 percent—making the system highly redistributive from higher to lower income groups. This weakens the link between contributions and benefits and could discourage workers from contributing beyond the required 25/20 years and/or from reporting full wages.

23. **Proportional reductions for less than 25/20 contribution years raise some equity issues.** Some beneficiaries, mostly disabled with short careers, receive benefits below social pension (currently 1,000 soms) paid to those who never contributed. There are pros and cons for linking basic pension amount to years of contributions. Proportional reductions diminish redistribution from contributors with longer careers to those with shorter careers and provide better incentives to contribute. Giving full credit to disabled for years between when they become disabled and the retirement age (as some countries do) would take care of this category.

24. **The transition portion (SP1) is pay-as-you-go system typical of countries in ECA which is being phased-out.** It is a defined benefit component paying for pension rights accrued under the pre-reform system: 1 percent accrual rate for each year of contributions prior to 1996 applied to individual's best 5 year average wage over the same period. Individual wages used in the calculations are updated roughly in line with average wage growth. It is expected that by around 2035-2040, as the last contributors with pension rights accrued prior to 1996 will have retired, this component will disappear.

25. **The SP2 portion is notional defined contribution.** So, it is pay-as-you-go financed with pensions calculated based on contributions recorded in individual (notional) accounts over post-1996 working years as well as life expectancy at retirement. Of the total 25 percent contribution rate paid by salaried workers 20 percent is credited to individual accounts of younger workers and 22 percent for older ones (see Annex 1 for more details). Contributions are indexed by 75 percent of the average wage growth rate to take into account the time value of money. By its design, this

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8 By law, the basic pension amount is maintained at approximately 12 percent of the previous year’s economy-wide average wage reported by the National Committee for Statistics. The average wage of contributors is currently about 75 percent of the economy-wide average wage.

9 Different countries link indexation of contributions (the so called “notional interest rate”) to different indicators, e.g. average wage, wage bill, GDP, pension fund per capita revenues growth rates. To ensure financial sustainability of an NDC system the notional interest rate should not exceed the growth rate of the revenue base, i.e. insured wage bill. Given that in the Kyrgyz Republic the number of insured grows at about 2 percent annually, indexation of contributions to 75 percent of the average wage growth rate is well below the levels required for sustainability.
type of pension scheme should create a closer link between contributions and benefits providing incentives for compliance.

26. However, the mechanism used to index contributions in the Kyrgyz system undermines incentives for compliance and results in inadequate SP2 pensions. While in other countries which have implemented NDC schemes (Sweden, Poland, Latvia, Italy, Russia, Mongolia, etc.) the indexation parameter is applied to the entire accumulated individual account balance, in the Kyrgyz pension system only current year contributions are indexed.\(^{10}\) So, de facto there is almost no update of the money value of contributions and the longer the individual pays to the NDC system the more he/she loses, especially in high inflation and high wage growth environment. This is equivalent to a long-term savings account earning practically no interest rate. Accordingly, individual account balances (notional capital) used in SP2 pension calculations at retirement generate very low replacement rates and the combined insurance pensions (SP1+SP2) decrease as SP1 is phasing out. In addition, not all contributions paid are credited to individual accounts adding to the problem of low NDC pensions. Three percentage points of the contribution rate go to the so called "solidarity" fund used by the Social Fund as a buffer fund.

27. The fourth component—FFDC—was added in 2010 diverting 2 percentage points of contributions into funded individual accounts. Different from notional accounts, accounts in the funded component work like typical savings accounts earning investment returns on accumulated balances which can be withdrawn upon retirement. Initially, the funded component was introduced for all contributors, but in 2012 it was reversed for older workers (born before 1964/1969 for men and women respectively). So far, there have been no payments from this component and the payout phase is still under discussion.

28. Overall, a very modest accrual rate in the SP1 portion coupled with inadequate indexation of contributions in the SP2 part result in low insurance pensions at retirement. Currently, an average new old-age pensioner who used to work in the formal sector gets an insurance pension (SP1+SP2) of only about 30 percent of the average wage of contributors. As will be shown in the projections section, insurance pensions of new retirees will keep falling while SP1 part gradually disappears. High contribution rates and low benefits could spur evasion, underreporting of wages and decrease of contribution density even further.

29. The issue of benefit inadequacy is even more acute for farmers and other self-employed. This group accounts for 40 percent of all contributors; farmers – 35 percent, and other self-employed – 5 percent. These groups pay very small contributions: farmers’ contributions are linked to land tax, other self-employed (e.g. patent holders) pay 8 percent of the regional average wages. On average, self-employed contribute about 1 percent of the average covered wage in the formal sector. With SP2 pensions determined entirely by contributions and the phase-out of SP1, insurance pensions that farmers can expect at retirement will become meaningless, so future retirees will have to rely only on the basic pension.

30. Indexation of post-retirement pensions is discretionary with the recent trend approximating wage growth rates. In the long run, the observed trend globally is that wages tend to grow faster than inflation. So, in general, indexing pensions in line with wages is a more

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\(^{10}\) For example, an individual's account balance at the beginning of year \(T\) is 100 units, the person contributed 10 units during year \(T\) and indexation parameter is 5 percent. Then under the Kyrgyz system rules the account balance at the beginning of year \(T+1\) will be \(110.5=100+10\times1.05\). In other countries with NDC systems where indexation parameter is applied to the entire balance it will be \(115.5=(100+10)\times1.05\).
expensive policy compared with price indexation, especially in a high real-wage-growth environment. Population aging makes this type of policy even more costly. Most developed countries and a growing number of developing countries index their pensions to prices (see table 2). This type of policy ensures that the real value of pensions is maintained but at the same time contains pension spending growth. In the Kyrgyz Republic, where wages grow at high rates, high rates of pension indexation are justified by the need to raise pensions to more adequate levels. Unless the issue of adequacy of benefits at retirement is resolved, the pressure on the government to make ad hoc adjustments of post-retirement pensions at a higher rate than inflation will continue.

Table 3. Benefit Indexation by Region
(Number of countries)

<table>
<thead>
<tr>
<th>Region</th>
<th>Number of countries</th>
<th>Prices</th>
<th>Wages</th>
<th>Mixed</th>
<th>Ad hoc / discretionary</th>
</tr>
</thead>
<tbody>
<tr>
<td>East Asia and the Pacific</td>
<td>6</td>
<td>2</td>
<td>2</td>
<td>-</td>
<td>2</td>
</tr>
<tr>
<td>Eastern Europe and Central Asia</td>
<td>28</td>
<td>10</td>
<td>5</td>
<td>8</td>
<td>5</td>
</tr>
<tr>
<td>Latin America and the Caribbean</td>
<td>24</td>
<td>6</td>
<td>2</td>
<td>1</td>
<td>15</td>
</tr>
<tr>
<td>Middle East and North Africa</td>
<td>12</td>
<td>2</td>
<td>1</td>
<td>-</td>
<td>9</td>
</tr>
<tr>
<td>South Asia</td>
<td>8</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Sub-Saharan Africa</td>
<td>18</td>
<td>8</td>
<td>2</td>
<td>-</td>
<td>7</td>
</tr>
<tr>
<td>High-income OECD</td>
<td>19</td>
<td>11</td>
<td>2</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td>World</td>
<td>115</td>
<td>39</td>
<td>14</td>
<td>13</td>
<td>40</td>
</tr>
</tbody>
</table>

Source: World Bank Pension Database.

31. **The contribution rate in the national pension system is 25 percent, which is regarded as rather high for a low-income economy like the Kyrgyz Republic.** This high contribution may cause labor market distortions and have a negative impact on economic growth at large. This rate is slightly above the 22 percent average for transition countries in Europe and Central Asia many of which are facing similar problems (high system dependency rates in particular), though in a more developed economic setting. Countries with comparable income level tend to have much lower contribution rates: the regional averages in Asia, Africa, and Latin America range between 11-16 percent. Regional average contribution rates are compared in Figure 6.

Figure 6. Average Contribution Rates by Region
(As percent of wage)

Source: World Bank Pension Database.
Still, this relatively high contribution rate is not enough to finance benefit payments even though benefits are not generous. As shown in Table 1, the Social Fund is currently almost balanced, running only slight deficits. However, if the basic pension continued to be fully funded by the Fund, the deficits would have been substantial – exceeding 1 percent of GDP.

3. Projections of the Fiscal and Social Impact for the National Pension System: No-reform Scenario

This section presents the baseline projections assuming there are no changes in the design of the current system. Financial projections for the national pension system of the Kyrgyz Republic were produced with the World Bank’s Pension Reform Options Simulation Toolkit (PROST) model. The projection period covers 2011 to 2080: pension systems analysis—because of their nature—requires long term projections spanning the lifetime of a generation. Data was provided by the Social Fund. The main assumptions used in the projections and a brief description of PROST methodology are contained in Annex 2.

The demographic environment, population aging in particular, has a huge impact on pension systems. Under the demographic assumptions described in Annex 2, the Kyrgyz population is projected to continue to grow from the current 5.4 million to about 7.8 million in 2050 and 8.7 million by 2080. At the same time, the old-age population will grow faster due to declining fertility rates and increasing longevity. As a result, the old-age population dependency ratio quadruples during the projection period going from 10 percent to 30 percent in 2050 and further to 40 percent by 2080. So, the number of working age persons supporting one elderly will drop from 10 to 3.5 and 2.5 respectively. These are common trends around the world, however—and similar to other countries with a young population—the Kyrgyz population is expected to age faster than in countries with an already older population.

In addition, pension system demographics are influenced by the economic environment and some factors related to the pension system itself, like system design and history. Low contributor and high beneficiary coverage rates, significant number of early retirees and disabled result in a substantially higher system dependency rate (39 percent) compared with the 10 percent old-age population dependency ratio. In the future, though contributor coverage rates are assumed to remain stable and beneficiary coverage rates are

![Figure 7. Dependency Rates](source: Staff projections using PROST.)

11 Here calculated as population at the statutory retirement age of 63/58 and above divided by working age population of age 15 to 63/58.
projected to decline, the system dependency rate is expected to grow driven by population aging. As shown in Figure 7, both system dependency rate indicators almost double over the next four decades and continue to grow further in line with the old-age population dependency ratio. So, the burden on each contributor will increase from supporting 0.39 pensioners now to 0.75 in 2050 and 0.81 by the end of the simulation period.

36. **Benefits at retirement, as expected, will continue to decrease relative to wages over the next two decades as SP1 pensions phase out.** Figure 8 shows the average replacement rates for new old-age retirees as percentage of the contributor average wage as well as changes in the composition of pensions at retirement over time. By the time SP1 part disappears around 2035-2040, the average defined benefit pension (basic+SP1+SP2) for new old-age retirees in the formal sector is projected to drop to 30-35 percent, partly also driven by the diversion of 2 percentage points of the contribution rates to the funded component. In the long run, pensions coming from the funded component—even under quite optimistic assumption of 3 percent real rate of return—may potentially add about 4 percentage points, so the combined replacement rates from all components may reach 35-40 percent. However, in the medium term average replacement rates for new retirees in the formal sector are projected to remain well below a minimum of 40 percent recommended by ILO for developing countries. Farmers’ pensions at retirement stabilize at 16 percent of the average contributor wage once everybody with pre-1996 pension rights retires. Thus, the average old-age pension at retirement drops from the current 40 percent of the average contributor wage to 25 percent by 2030 and remains below 30 percent in the longer run.

37. **Here we assume that the current policy to maintain the basic pension a constant share of the average wage continues, so 15 percentage points of the projected average replacement rates is basic pension.** While the insurance component shrinks, the share of the basic pension increases over the next two decades: from 36 percent to about 45 percent-50 percent for salaried workers and from 57 percent to about 95 percent for farmers. Since basic pensions are financed from the state budget, contributors in the formal sector end up paying a high contribution rate of 25 percent for a 17 percent replacement rate in the medium term or 22-24 percent in the long run.

![Figure 8. Average Replacement Rates for New Old-Age Pensioners](chart)

*Source: Staff projections using PROST.*
38. **The dynamics of the average replacement rates for all existing old-age pensioners are driven by benefits calculated at retirement and post-retirement indexation policy.** In the baseline scenario, the pension indexation policy is assumed to continue to be in line with wage growth rates. The dominating factor in the short- to medium term is the fall of replacement rates for new retirees with the phase out of SP1. In the long run, once all old-age pensioners receiving SP1 quit the system, the relative value of average pensions stabilizes, maintained by the wage indexation policy. Figure 9 presents the projected average replacement rates, excluding the funded component, for all existing old-age pension recipients. Eventually, combined SP2 and basic pensions stabilize at low levels of about 25 percent of the average contributor wage. SP2 pension alone in the longer run can only provide an average pension of 10 percent, which is about the current level of the social pension relative to the average wage. The share of the basic pension increases from the current 37 percent to about 60 percent.

39. **Since the income position of old-age pensioners relative to the working population is projected to deteriorate substantially, the system is unlikely to remain socially sustainable over a long period.** The pressure on the government for ad hoc benefit adjustments may increase. In addition to adequacy, there is an issue of perverse incentives provided by the benefit structure. As mentioned above, the current structure is highly redistributive and the share of its redistributive component — the basic pension — is projected to increase dramatically over time. That could further weaken the link between contributions and benefits, and, in conjunction with the high contribution rate, make the system even less attractive for workers.

40. **Overall, the Social Fund is expected to remain financially sustainable over the whole simulation period.** Figure 10 shows the projected cash flows of the pay-as-you-go (PAYG) component of the Social Fund: contributions paid to the PAYG part and Social Fund expenditures, which include payments of SP1 and SP2 pensions (as well as some portion of basic pensions in 2011-2013) and administrative expenses. Starting from 2014, basic pension payments are not part of Social Fund expenditures as they are financed from the state budget. The annual current balance here is calculated as the difference between contributions and expenditures, excluding any potential investment income from accumulated assets in the pay-as-you-go component.

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12 Benefits from the funded component are excluded here for 2 reasons: (1) farmers and self-employed do not participate in the funded component; (2) contributions paid to the funded component by salaried workers are small, and benefits will most likely be paid out as lump sums. Even if accumulated balances are annuitized the expected outcomes are very uncertain because of the uncertainty of investment returns.
41. **The major factor driving the dynamics of the Social Fund financial position over the next few years is the transfer of the basic pension financing to the state budget which slows down the growth of Social Fund expenditures.** The Fund starts generating surpluses that peak in 2014, the first year when basic pension is supposed to be fully paid for by the state budget. The reversal of the 2 percent contribution rate of older workers from the FFDC component back to PAYG system in 2012 has an additional positive effect on the Social Fund finances. The short-term projections of the Social Fund cash flows are presented in Table 3. FFDC component is excluded from the analysis of the system finances since its revenues and expenses are segregated from the PAYG component and, with benefits paid out as lump sums, it is expected to be financially sustainable. Over the period between 2014 and early 2020s, contributions—although they continue to grow in money terms—decline as a share of GDP (see economic assumptions in Annex 2). On the other hand, the counteracting effects of fast-increasing number of beneficiaries and decreasing average replacement rates result in fairly stable levels of Social Fund expenditures relative to GDP. Therefore, surpluses decrease and practically disappear by around 2020.

Table 4. Pay-You-Go System Finances, 2012-2016 projections

<table>
<thead>
<tr>
<th></th>
<th>Actual</th>
<th>Projected</th>
</tr>
</thead>
<tbody>
<tr>
<td>Social Fund revenues</td>
<td>13,886</td>
<td>18,102</td>
</tr>
<tr>
<td>Contributions to PAYG</td>
<td>13,886</td>
<td>18,102</td>
</tr>
<tr>
<td>Social Fund expenditures</td>
<td>14,786</td>
<td>18,873</td>
</tr>
<tr>
<td>Pension payments financed by Social Fund*</td>
<td>13,582</td>
<td>17,551</td>
</tr>
<tr>
<td>Admin. costs and other expenses</td>
<td>1,201</td>
<td>1,322</td>
</tr>
<tr>
<td>Social fund annual balance</td>
<td>(899)</td>
<td>(770)</td>
</tr>
<tr>
<td>Government spending on basic pension</td>
<td>2,812</td>
<td>5,973</td>
</tr>
<tr>
<td>Government share of pension payments (percent)</td>
<td>17</td>
<td>25</td>
</tr>
</tbody>
</table>

*Source: Social Fund data and staff projections using PROST.*

*Note: *SP1, SP2 and remaining share of basic pension.

42. **In the longer run, the system generates substantial surpluses.** The contribution revenues remain more or less stable as percentage of GDP due to the assumed constant contributor coverage rates and labor share of GDP. At the same time, the Social Fund expenditures relative to GDP decrease while the growth of the number of beneficiaries slows down and the effect of falling replacement rates begins to dominate. As a result, surpluses reach 2 percent of GDP by 2040s and stabilize once replacement rates become constant. Because the PAYG system in its current form pays low benefits compared with what pension system members contribute, it becomes overfunded. However, it may not be sustainable from the social standpoint.
43. While the Social Fund is projected to run surpluses, government expenditures on basic pensions grow fast (Figure 11). They triple just over the next 3 years: from the current 1 percent of GDP to 3.1 percent in 2014, then continue to increase reaching 5 percent in 2050 and 6 percent in the longer run, driven by aging of the covered population. In less than 3 decades, basic pension payments are projected to exceed the levels of insurance pension payments financed by the Social Fund (compare Figure 11 with the projected Social Fund expenditures in Figure 10). If all benefit payments were financed by contributions the Social Fund would have run deficits amounting up to 4 percent of GDP.

44. Government spending on social pensions also increases substantially. In addition to basic pensions paid to the covered population, the government – as mentioned in the previous section – will also face the need to deal with an increasing share of the uncovered old-age once the current working age population evading participation in the national pension system reach the retirement age. The number of older persons claiming social pension is projected to rise substantially in about 25-30 years, by when the cohorts with pre-transition pension rights will have mostly retired, and then continue to grow in line with increasing longevity. Projections indicate that eventually, about 40 percent of the elderly will rely on the social pension. If the social pension (currently 1,000 soms) remains the same relative to basic pension, its cost to the government may reach 1 percent of GDP in 2050 and 1.8 percent by the end of the projection period bringing up the total government spending on basic and social pensions to 6.2 percent and 7.6 percent of GDP respectively (Figure 11).

45. The consolidated public pension spending will increase to almost 12 percent of GDP. The consolidated public pension spending on benefits to the covered by the national pension system (basic+SP1+SP2) and social pensions is presented in Figure 12. Government’s share will grow from 35 percent in 2014 (when the state budget assumes full responsibility for financing
the basic pension) to 65-66 percent by 2050 and remain stable after that. This estimate excludes government expenditures on military and privileged group pensions as well as energy compensation for pensioners, which all together currently stand at 1.8 percent of GDP. If those are maintained at least at current levels, the total public pension spending (government and Social Fund) may increase from the current 8.2 percent to 11-12 percent in 2050 and 13-14 percent in the following several decades, so the overall pension system will become very costly and at the same time pay low benefits.13

4. Possible Reform Options

46. There are various possible approaches to reforming the Kyrgyz national pension system. This section presents some broad options that can be further fine-tuned based on the government’s preferences and social policy choices with respect to the target replacement rates, acceptable retirement age, and contribution rate.

47. The main objective of the proposed reforms is adequacy of benefits, better incentives to contribute, maintaining financial sustainability of the PAYG component and containing the cost of the system to the government. Reforms 1-3 is a reform package for the insurance component (SP1+SP2) modeled in three steps by adding changes in different parameters on an incremental basis to show the effects of each policy variable on benefits and finances. This package addresses the issue of benefit adequacy while maintaining financial sustainability of the PAYG component. Reform 4 aims at containing government spending on pensions for the covered and uncovered population; to some extent, it also addresses the coverage issue.

Reform 1:
- Contribution indexation is applied to the entire balance and is equal to the average wage growth rate.

Reform 2:
- Same changes as in Reform 1;
- Post-retirement pensions are fully indexed to inflation.

Reform 3:
- Same changes as in Reform 2;
- Statutory retirement age is gradually raised in line with life expectancy changes (to 68 for both genders by 2080, or roughly by 1 year every 13-14 years for men and every 7 years for women, so that the average life expectancy for both genders at retirement age maintains at around 16.5 years14);
- Current actuarial coefficients are replaced with coefficients based on estimated actuarially fair annuity factors.

13 Public pension spending of about 15 percent of GDP is comparable with the highest levels currently observed in countries like Italy, for example. However, in Italy beneficiary coverage rates are much higher and benefits are much more generous than what is projected for the Kyrgyz pension system by 2080.

14 Changes in life expectancy at the retirement age will be different for each gender as the initial retirement age for women is lower by 5 years. Thus, for men the average life expectancy at the retirement age will increase from 13.1 in 2011 to 14.6 by 2080 whereas for women it will decrease from 20.4 to 18.1 respectively.
Reform 4, variants (a), (b):
- Same as the no-reform scenario with respect to the insurance and funded components;
- Basic and social pensions are eliminated and replaced with a demogrant, a universal flat benefit with eligibility based solely on age and residency;
- Eligible age set at 65;
- Disability pensioners receiving pensions from the Social Fund also receive the demogrant regardless of age, whereas survivor pension recipients become eligible for the demogrant only upon reaching the eligible age;
- Demogrant amount initially set at the basic pension level, further indexed to wage growth in variant (a) and inflation in variant (b).

48. **All parametric reforms in the contributory system have a positive effect on pensions at retirement.** Figure 13 illustrates the effects of the reform on the average replacement rates for new old-age pensioners (full pension from all components). Just correcting the contribution indexation mechanism (Reforms 1 and 2) doubles SP2 pensions compared with the base case in the longer run, so the average replacement rate for new retirees may reach 60 percent of the average wage. Reform 3 makes the insurance portion of pensions at retirement even higher bringing the average full pension up to around 70 percent of the average wage by 2050. Here, initially the average replacement rates grow due to more favorable actuarial coefficients. Later on the impact of increasing retirement age kicks in: as workers retire later they contribute for longer periods and accumulate larger notional capital, then at retirement their pension is calculated using more favorable actuarial coefficients set for older ages. Under Reform 4, insurance and FDC pensions are the same as in the base case but new retirees will not get the demogrant at retirement, it will be added to their pension only upon reaching age 65.

49. **In Reforms 1-3 higher pensions at retirement generate higher post-retirement pensions even with a move to price indexation.** The projected average post-retirement pensions (excluding the funded component) and their composition are shown in Figures 14a, b, c, d, and e for each reform scenario. Reform 1 boosts post-retirement pensions through increasing pensions at retirement while keeping wage indexation. In Reform 2, though pensions at retirement are the same as in Reform 1, less generous price indexation reduces post-retirement pensions as compared with Reform 1, but still they remain higher than in the no-reform scenario. The raising of the retirement age in Reform 3 helps achieve almost the same levels as in Reform 1 despite price indexation of pensions.
In Reform 4 insurance pensions at retirement and post-retirement are the same as in the no-reform scenario, however total benefits are lower because only pensioners age 65 and older receive the demogrant. Even with wage indexation in Reform 4a benefits are projected to decrease to very low levels of about 20 percent on average, which may be socially and politically unacceptable. If the demogrant is indexed to prices (Reform 4b) benefits become even lower. So, the demogrant option—if considered—should be combined with some parametric reforms in the insurance component that would increase insurance pension levels, similar to the proposed Reforms 1, 2, and 3.

Figure 14. Average Replacement Rates for All Existing Old-Age Pensioners
(Percent of average wage in the formal sector)

Source: Staff projections using PROST.
51. **The target pension level is a policy choice.** There is a wide range of replacement rates provided by mandatory pension systems across countries. Some countries mandate higher replacement rates, some lower but leaving room for voluntary pensions. For example, in Europe and Central Asia the average pension as percentage of the average wage varies from 70-80 percent (Italy, Luxemburg, Spain) to as low as 13 percent (Georgia), averaging between 40-50 percent – see Figure 15. When considering a target replacement rate, one should also take into account not only gross but also net replacement rates, i.e. the ratio of net pensions to net wages. As pensions in the Kyrgyz Republic are exempted from the income tax, net replacement rates are higher than the gross ones, especially for higher wage earners. If replacement rates expected under reform scenarios are substantially higher than the target levels, there is some room for further adjustments aimed at containing system costs. These options could include reducing the contribution rate, inflation-indexing the basic pension or even means-testing it, etc.

![Figure 15. Average Old-Age Pension in Europe and Central Asia](image)

*Source: World Bank Pension Database.*

52. **Higher benefits come at a cost, however some reforms mitigate this effect.** As presented in Figure 16, addressing only the issue of pension adequacy under Reform 1 makes the Social Fund financially unsustainable and requires government intervention to cover deficits: the annual current balance turns negative in few years after the reform and deficits grow to 0.8 percent of GDP by 2025, then further up to 1.5 percent of GDP in the longer run. To offset this negative effect, Reform 2 proposes a switch from the current policy of indexing pensions in line with wage growth to less expensive inflation indexation. Under the latter, post-retirement pensions are protected against the risk of inflation and their real value is maintained; at the same time it helps contain system expenditures making the system financially sustainable.
53. **Raising retirement age in Reform 3 has a multiple effect on Social Fund finances.** On the one hand, pensions become higher, pushing expenditures up. On the other hand, increasing the retirement age suppresses the growth of the system dependency rate (Figure 17) by reducing the number of old-age pensioners receiving benefits and simultaneously increasing the number of contributors.\(^{15}\) So, pensions are higher but they are paid to a smaller number of pensioners, and contribution revenues are also higher since people contribute longer to the system. As shown in Figure 16, the overall effect of Reform 3 is a significant improvement of system finances compared with both Reform 1 and Reform 2. Similar to Reform 2, the system becomes financially sustainable

\(^{15}\) Assuming that all or significant part of those who have to postpone retirement until they reach the new retirement age continue contributing to the system. In an extreme case where all these people stop contributing (e.g., become unemployed, drop out of the labor force) there still will be a positive effect on the system dependency rate via reduced number of pensioners.
and even generates significant surpluses; but at the same time pensions at retirement are substantially higher in Reform 3.

54. **Coupled with high replacement rates, surpluses generated under Reforms 2 and 3 allow for some further adjustments.** For example, the system can be made more affordable for contributors and the economy (via lower contribution rate) and/or for the government (via reducing basic pension costs as previously discussed). Reform 4 does not affect Social Fund finances but has a significant impact on the cost of the pension system to the government.

55. **Increasing the retirement age reduces the cost of the system to the government.** The projected government liabilities with respect to the national pension system are presented in Figure 18. Under Reform 1, because of deficits, the cost of the system to the government increases substantially, reaching 5 percent of GDP already by 2025, going up further to 6 percent in 2050 and above 7 percent by 2080. Under Reform 2, the projected government costs are the same as in the base case since the annual current balance stays in the positive area throughout the projection period, the government only needs to pay for basic pensions and the projected number of pensioners is the same as in the base case. Under Reform 3, there are also no projected deficits as in Reform 2 but the number of pensioners is smaller which results in budget savings reaching 1 percentage point of GDP.

![Figure 18. Cost to the Government: Basic and Social Pension or Demogrant + PAYG Deficit Financing](image)

Source: Staff projections using PROST.

56. **Reform 4 can achieve a more significant reduction in government pension spending.** The magnitude of savings will depend on the demogrant indexation policy. The two variants of indexation policy considered in this study—Reforms 4a and 4b—are rather extreme cases that would show an upper and lower bound. Wage indexation of the demogrant (Reform 4a) is more expensive, hence reduces government spending to a lesser extent but provides higher benefits compared with price indexation (Reform 4b). Other variants of indexation policy can be modeled to help find an acceptable cost-benefit balance.

57. The consolidated public spending and its composition under each reform scenario is presented in Figure 19 a, b, c, d, and e below.
Figure 19. Consolidated Public Pension Expenditures  
(Percent of GDP)

Source: Staff projections using PROST.
58. **It is worth mentioning a fundamentally different approach to pension reform used in some countries.** All options considered above assume that the national pension system remains contributory and earnings-related as understood to be the government’s preferences. However, under similar circumstances—pensions becoming more and more compressed, fast growing share of the non-contributory component (increasing share of the basic pension for the covered population, increasing share of the uncovered population claiming social pensions)—some countries, e.g. Georgia, decided to make their system noncontributory. Under this system everybody receives a modest flat benefit upon reaching a certain age, financed from the general budget, i.e. a demogrant-only option. The focus of such a system would be on poverty alleviation among the elderly rather than facilitating consumption smoothing in old age. But there are some potential pros for this approach: (i) full coverage of the elderly while the costs are contained; (ii) reduction of labor market distortions and improvement of country competitiveness through elimination of the high payroll tax; (iii) room for voluntary savings for those who want a higher pension; (iv) simplicity and low administration costs. Different variants of non-contributory system parameters as well as the transition path should be explored further if this approach is chosen.

**Main Results of Proposed Reforms**

59. The main outcomes of the proposed broad reform options are presented in Table 5 and can be summarized as follows:

- **Reform 1** addresses the issue of benefit adequacy and also improves incentives to contribute by strengthening the link between contributions and insurance pensions. However, the Social Fund becomes financially unsustainable and requires government financing.

- **Reform 2** contains the cost of insurance pensions while providing protection of pensioners against the risk of inflation. Social Fund finances remain healthy and generate surpluses through the whole projection period.

- **Reform 3** addresses both benefit adequacy and financial sustainability issues by further increasing pensions, improving system demographics and increasing revenues. System finances improve compared with Reform 2.

- **Reform 2 and to a greater extent Reform 3** create some space for further reforms aimed at making the system more affordable and less costly, e.g. reducing the contribution rate, inflation-indexing the basic pension or means-testing it to contain basic pension costs. Lower contribution rates may also provide better incentives and possibilities to contribute to private pension funds for those who want higher pensions.

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16 As shown in the “Projections under the no-reform scenario” section, the share of the basic pension in the average pension is projected to increase from the current 37 percent to about 60 percent, the share of the uncovered elderly from less than 10 percent to about 40 percent, and the government’s share in the total spending on labor and social pensions—from 35 percent to 66 percent by around 2050.

17 In the last decade, most OECD countries have passed legislation that raises the retirement age or the minimum length of contributions required for full pension benefits, e.g. Australia, Italy, Poland, Slovenia. In many of these countries the retirement age has increased to 65-67 or above and has been equalized for men and women. Some countries—like Denmark, Greece, Hungary, Italy, Korea and Turkey—have legislated future automatic adjustment of the retirement age to changes in life expectancy.
Reform 4 to some extent addresses the issue of low coverage by offering the basic pension to everybody and providing better income protection to the uncovered population. It may be considered as a more fair arrangement since both social and basic pensions are financed from the general revenues.

Also, among all reform scenarios, Reform 4 is most effective in reducing the cost of the pension system to the government as well as in the consolidated public pension expenditures. However, it does not address the issue of benefit adequacy and, if considered, should be combined with some parametric reforms similar to Reform 3.

The reform scenarios proposed in this study are broad options which may be further fine-tuned. For example, in Reform 3 more radical measures can be introduced to reduce or even eliminate early retirement which will further strengthen system finances and reduce expenditures; combining Reform 4 with some variation of Reform 3 may help contain the cost of the system to the government while addressing the issue of benefits adequacy; different variants of demogrant indexation policy may be considered as well as an option of some reductions in the demogrant amount for those who receive regular pensions.

A fundamentally different approach implemented in some countries facing similar issues would be moving to a noncontributory system focusing on basic income support for the elderly and leaving room for voluntary arrangements.

### Table 5. Summary of Reform Results
(In percent, unless otherwise noted)

<table>
<thead>
<tr>
<th>Average replacement rate for old age pensioners*, % of average wage</th>
<th>Pension indexation</th>
<th>Retirement age, men/women</th>
<th>Total public pension expenditures**, % of GDP</th>
<th>Cost to the government***, % of GDP</th>
</tr>
</thead>
<tbody>
<tr>
<td>2030</td>
<td>2050</td>
<td>2080</td>
<td>2030</td>
<td>2050</td>
</tr>
<tr>
<td>Base case</td>
<td>34%</td>
<td>25%</td>
<td>26%</td>
<td>wages</td>
</tr>
<tr>
<td>Reform 1</td>
<td>39%</td>
<td>35%</td>
<td>36%</td>
<td>wages</td>
</tr>
<tr>
<td>Reform 2</td>
<td>33%</td>
<td>30%</td>
<td>30%</td>
<td>prices</td>
</tr>
<tr>
<td>Reform 3</td>
<td>35%</td>
<td>33%</td>
<td>37%</td>
<td>prices</td>
</tr>
<tr>
<td>Reform 4a</td>
<td>28%</td>
<td>20%</td>
<td>21%</td>
<td>wages</td>
</tr>
<tr>
<td>Reform 4b</td>
<td>25%</td>
<td>14%</td>
<td>13%</td>
<td>wages</td>
</tr>
</tbody>
</table>

*SP1+SP2+basic pension/demogrant for all existing old age pensioners, all sectors
**Excluding military pensions, special categories and energy compensation
***Basic pensions+social pensions (base case, reforms 1,2,3) or demogrant (reforms 4a,4b), PAYG deficits

Some potential general approaches to deal with the early retirement issue used in other countries could be revising the eligibility criteria for early retirement, introducing actuarially fair reductions in pensions for early retirees, additional contributions from employers in sectors with hazardous conditions. Specific measures that might work in the Kyrgyz republic require a separate discussion; Poland experience may be useful to consider.
With respect to achieving the main reform objectives the reform scenarios compare as follows.

### Table 6: Achievement of the reform objectives under various scenarios

<table>
<thead>
<tr>
<th>Reform scenario</th>
<th>Adequacy of benefits (average pension)</th>
<th>Incentives to contribute</th>
<th>Sustainability of Social Fund</th>
<th>Cost to the government</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reform 1</td>
<td>increase to 35-36%</td>
<td>improve</td>
<td>unsustainable</td>
<td>increase by up to 2.4% of GDP</td>
</tr>
<tr>
<td>Reform 2</td>
<td>increase to 30%</td>
<td>improve</td>
<td>sustainable</td>
<td>same as in no-reform scenario</td>
</tr>
<tr>
<td>Reform 3</td>
<td>increase to 37%</td>
<td>improve</td>
<td>sustainable</td>
<td>decrease by up to 1.2% of GDP</td>
</tr>
<tr>
<td>Reform 4a</td>
<td>decrease to 20-21%, but higher benefits for the uncovered</td>
<td>same as in no-reform scenario</td>
<td>sustainable</td>
<td>decrease by up to 2.0% of GDP</td>
</tr>
<tr>
<td>Reform 4b</td>
<td>decrease to 13-14%</td>
<td>same as in no-reform scenario</td>
<td>sustainable</td>
<td>decrease by up to 6.6% of GDP</td>
</tr>
</tbody>
</table>

5. Remaining Issues

Some important issues with the current pension system remain beyond the scope of this study and require further analysis.

**Low coverage.** As mentioned before, low coverage of the working-age population by the national pension system to a great extent is a developmental problem. Coverage expansion to the levels comparable with OECD countries can be achieved primarily through economic growth and formalization of the economy. Meanwhile, the pension system can respond to this issue in different ways, for example through a demogrant and/or developing a voluntary pension system with incentives for people to join it.

**Migrant workers.** Significant outmigration of younger workers, mostly to Russia, may cause problems in the shorter and longer term. In the shorter term, the pension system may be losing potential contributors, hence potential revenue. Normally, migrants would pay contributions to the pension system in the country where they work, but, for example, in Russia they can be eligible for a pension only if they stay there after retirement. Since most migrants tend to return to the Kyrgyz Republic in their old age, they come back without a pension and end up claiming the social pension thus increasing the burden on the state budget. However, the effect of migration on both the contributor and the old-age coverage rates is very uncertain as it’s not clear whether these workers would have actually contributed had they stayed in the Kyrgyz Republic or—had they found a job in the formal sector—they would have crowded out some current contributors into the informal sector. In any event, one obvious step would be to reach an agreement with the relevant countries regarding pensions for migrant workers. And still, the overall issue of outmigration can only be resolved through broader macroeconomic and labor market policy to boost sustainable economic growth.

**Farmer pensions.** The issue of small contributions paid by farmers and other self-employed generating very low insurance pensions may require different approaches to different groups depending on their characteristics. If farmers are mostly engaged in subsistence farming and have very little cash income making them pay higher contributions to get higher pensions may not work. In this case, the question is whether it is worth for them to participate in the national
pension system at all if what they can expect is a benefit hardly exceeding the basic pension. Other groups of self-employed whose cash income is higher may need to be treated differently. Alternatively, all self-employed, including farmers, can be given a choice: pay full contributions and get a normal pension (provided that the NDC components is fixed) or not pay at all and get a social pension.

65. **Fully funded pillar.** The new FFDC component faces many issues ranging from administration to regulatory and institutional. Some of them can be resolved fairly quickly – the Social Fund and the government are putting in a lot of efforts to improve FFDC administration and regulatory framework. But there are also issues that may take much longer to deal with, most importantly financial markets and banking system development, and overall macroeconomic stability. These are essential pre-conditions for a successful mandatory funded scheme which contributors may benefit from. So, the main questions with respect to the FFDC component are whether it is worth keeping it and, if yes, what should be done to make it effective.

66. **Administration.** There are some issues related to the system administration and broader governance, in particular, who should collect contributions and how the finances of the PAYG system should be managed. The short-lived transfer of the collection of contributions from farmers and other self-employed to the tax authorities in 2010 did not work well but the discussion of what are the pros and cons of the collection done by the Social Fund versus tax authorities is still ongoing. There is also a broader issue of pros and cons for integrating Social Fund finances into the general budget. International experience with respect to both issues varies, and a separate study should be carried out on lessons learned and what may work in the Kyrgyz Republic.

6. **Conclusions: The Way Forward**

67. **The analysis in this chapter suggests that the current system faces serious coverage, system design, and financial challenges.** The level of the public pension spending is already very high relative to GDP and its fiscal pressure will continue to grow as the population ages. With no further changes in the system inadequate benefits will become a critical issue in the near future thus making the system unsustainable from the social standpoint.

68. **Addressing these challenges will require reforms aimed at making the system financially sustainable, affordable to both the government and the working population while providing adequate benefits and protecting the elderly against poverty.** The chapter considers possible broad approaches to reform the existing pension system which can be further fine-tuned to take into account government preferences and social policy choices with respect to the target replacement rates, acceptable retirement age and contribution rate, and in a broader context, policy choices with respect to the poverty alleviation and consumption-smoothing functions of the pension system.

69. **One alternative approach would be an introduction of parametric reforms to the existing contributory system combined with reforming the basic and social pensions.** The proposed reforms ensure higher pensions for the covered population and a closer link between contributions and pension amounts, boost revenues and reduce expenditures by improving pension system demographics, provide better protection to the uncovered population, and contain the cost to the government.
70. Another alternative would be moving to a noncontributory system with a modest flat universal benefit. Under this approach the public pension system will provide only basic income and the public pension spending may be reduced dramatically; at the same time, this would create room and incentives for private savings for retirement.
### Annex 1. Main Parameters of the Kyrgyz Contributory Pension System

<table>
<thead>
<tr>
<th>Parameters</th>
<th>Basic pension</th>
<th>PAYG Defined Benefit – pension rights accrued prior to 1996 (SP1)</th>
<th>Notional Defined Contributions (SP2)</th>
<th>Fully Funded Defined Contributions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Contributions (employer/employee)</td>
<td>Fully financed from the state budget from 2014 (government’s share increases by 20% per year from 2010)</td>
<td>Employed in the formal sector: Born in/after 1964/1969 (men/women) – 15%+8% (20% credited to NDC accounts); Born before 1964/1969 – 15%+10% (22% credited to NDC accounts). Self-employed: 8% of the regional average wage. Farmers: 91.7% of the land tax</td>
<td>Employed in the formal sector: Born in/after 1964/1969 – 2% (paid by employee)</td>
<td></td>
</tr>
<tr>
<td>Retirement age (men/women)</td>
<td>63/58 (gradually increased from 60/55 in 1999-2007); many provisions for early retirement; min retirement age 50/45</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Interest rate on contributions</td>
<td>n/a</td>
<td>n/a</td>
<td>75% of average wage growth, applied only to current year contributions</td>
<td>Interest rate based on investment income of the pension fund</td>
</tr>
<tr>
<td>Benefit formula at retirement</td>
<td>Currently 12% of economy wide average wage (full benefit if 25/20 or more years of contributions; prorated if less)</td>
<td>Annual accrual rate=1% per year of contributions prior to 1996; income measure=best 5 year average prior to 1996</td>
<td>Accumulated notional account balance/actuarial coefficient calculated based on life expectancy estimates by age</td>
<td>Lump sums</td>
</tr>
<tr>
<td>Indexation of post-retirement pensions</td>
<td>Discretionary (over the last several years maintained at around 12% of the average wage)</td>
<td>Discretionary (recent trend – approximately in line with wage growth)</td>
<td>n/a</td>
<td></td>
</tr>
<tr>
<td>Disability pension</td>
<td>100% of old-age pension for groups I and II; 50% for group III</td>
<td></td>
<td>Lump sums</td>
<td></td>
</tr>
<tr>
<td>Survivor’s pension</td>
<td>50%-150% of potential group II disability pension depending on the number of dependents</td>
<td></td>
<td>Lump sums</td>
<td></td>
</tr>
</tbody>
</table>
Annex 2. Main Assumptions and Projection Methodology

Financial projections for the pension system of the Kyrgyz Republic were conducted with the World Bank’s Pension Reform Options Simulation Toolkit (PROST) model. The simulation period runs from 2011 to 2080.

Demographic Assumptions

UN population data and 2010 demographic projections for the Kyrgyz Republic are used for assumptions about future changes in fertility and mortality rates:

- The total fertility rate is assumed to decrease gradually from the current 260 percent to about 230 percent by 2050 and further to 220 percent by 2080;
- Consistent with expectations in countries of similar levels of development, mortality rates are expected to decline over the projection period which results in projected life expectancy as shown in Table 1.

<table>
<thead>
<tr>
<th>Table A2-1. Life Expectancy at Various Ages by Gender (In years)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
<tr>
<td>Male</td>
</tr>
<tr>
<td>At Birth</td>
</tr>
<tr>
<td>At Age 60</td>
</tr>
<tr>
<td>At Retirement Age (63)</td>
</tr>
<tr>
<td>At Age 65</td>
</tr>
<tr>
<td>Female</td>
</tr>
<tr>
<td>At Birth</td>
</tr>
<tr>
<td>At Retirement Age (58)</td>
</tr>
<tr>
<td>At Age 60</td>
</tr>
<tr>
<td>At Age 65</td>
</tr>
</tbody>
</table>

Source: Staff projections using PROST.

Economic assumptions

The key economic assumptions are summarized in Table 2. Assumptions with respect to GDP growth, labor productivity and inflation rates are based on the short- and long-term macroeconomic projections for the Kyrgyz Republic produced at the World Bank. Average wage growth assumptions for 2012-2015 use projections of the Ministry of Economy; in the longer run it is assumed that wages grow in line with labor productivity.

<table>
<thead>
<tr>
<th>Table A2-2. Economic Assumptions (Percent, unless otherwise noted)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
<tr>
<td>Real GDP growth rate</td>
</tr>
<tr>
<td>6.0</td>
</tr>
<tr>
<td>Inflation</td>
</tr>
<tr>
<td>16.6</td>
</tr>
<tr>
<td>Real wage growth</td>
</tr>
<tr>
<td>10.0</td>
</tr>
</tbody>
</table>

Source: PROST input files.
Coverage

Age- and gender-specific coverage rates for contributors are assumed to remain constant. As a result, the projected total coverage rate is relatively stable at 32-35 percent of working age population with slight fluctuations due to changes in the age structure. The share of salaried workers and farmers/self-employed is also assumed to remain constant.

Indexation policy

In the base case scenario the current policy to index post-retirement insurance pensions (SP1+SP2) to wage growth is assumed to maintain throughout the projection period. Reforms 2 and 3 assume price indexation.

In accordance with the current law and practice, basic pension is indexed to average wage growth in all scenarios.

In the base case scenario, contributions credited to individual NDC accounts are indexed to 75 percent of average wage growth rate, with indexation applied only to current year contributions, as required by the current regulations. All Reforms assume full wage indexation applied to entire balances.

FFDC component

It is assumed that FFDC assets continue to be managed by the Social Fund and there are no administration and asset management fees. A rather optimistic assumption is used for the interest rate earned on individual accounts: as financial markets improve, the real rate of return gradually increases from 0 percent to 3 percent over the next decade, remaining stable at 3 percent thereafter.

General Description of PROST Methodology

PROST is a computer-based pension model designed to simulate the behavior of pension systems and assess their financial sustainability under different economic and demographic assumptions over a long time frame. The model can be adapted to a wide range of country circumstances and allows modeling of various types of pension reform options.

The model consists of an input workbook and five output modules. On the input side, the user provides country specific data on demographic, economic and pension system related parameters and assumptions about their behavior in the future. This information is entered in the input file with six embedded worksheets:

- **General**: Economic variables (GDP and wage growth, inflation, interest rate), non age-specific pension system parameters (pension fund balance and benefit expenditure in the base year, retirement age, contribution rate, pension indexation rules, etc.) and some demographic variables;

- **Population**: Base year population by age and gender along with age-specific fertility and mortality rates and immigration information.
**Labor**  
Age and gender specific labor force participation and unemployment rates as well as distribution of wages and old-age pensions across age and gender cohorts.

**Pension**  
Age and gender specific information about pension system contributors, beneficiaries, coverage and retirement rates, average years of service at retirement and replacement rates for new beneficiaries.

**Profiles**  
Information on representative individuals, such as gender, career path, individual wages, life expectancy, etc.

**Reform**  
Parameters relevant to systemic reforms to be simulated (any combination of conventional PAYG, fully funded DC and notional DC pillars), including switching pattern, how the acquired rights will be paid, contribution rates, rules for annuitization and pension payout under DC schemes and replacement rates/benefit formula in a PAYG pillar, indexation, etc.

In the most simplified way the **general calculation scheme** can be summarized in the figure below.

PROST follows single age/gender cohorts over time and generates population projections, which, combined with labor market assumptions, are used to forecast future numbers of contributors and beneficiaries. These in turn generate flows of revenues and expenditure. The model then projects fiscal balances and calculates the implicit pension debt. The required contribution rates and affordable replacement rates for zero pension fund balance in each year of the simulation period are also calculated. Finally, PROST produces outputs related to individuals – what an individual would contribute to the system and what he/she obtain under PAYG DB and multipillar schemes. This allows both intra- and intergenerational analysis.

Depending on the characteristics of the pension system and data availability, the user can choose the method for calculation of some of the variables. In particular, the number of contributors and beneficiaries can be computed in either “Stock” or “Flow” method. With the “Stock” method, for each year the stocks of contributors/beneficiaries are calculated first and then inflows (new contributors/beneficiaries) are derived as the changes of the stocks:

\[
Inflow(a,t,g) = stock(a,t,g) - stock(a-1,t-1,g) + outflow(a,t,g),
\]

With the “Flow” method, inflows are calculated first and then stocks are derived as previous year’s stocks in each age/gender cohort adjusted for the net inflow (inflow-outflow):

\[
Stock(a,t,g) = stock(a-1,t-1,g) - outflow(a,t,g) + inflow(a,t,g),
\]

Where \( a = \text{age}, t = \text{year}, g = \text{gender} \).

As PROST keeps track of contribution years of service accrued by each cohort, the calculated number of new retirees – whatever method is used – is then adjusted so that the total length of service accrued by the cohort is equal to the total length of service claimed by the cohort at the time of retirement. After the number of new retirees is adjusted, the stock is recalculated using the “Flow” method.

The user can also choose how the benefit of new beneficiaries is specified—via benefit formula or via age and gender specific replacement rates.
As mentioned above, output produced by PROST is organized in five output modules. Each of the modules contains a number of Excel worksheets and a graphical summary on key output indicators:

**Population Projection**
- Population projections and pyramids, life tables, life expectancy changes, population dependency rates, etc.

**Demographic Structure**
- Labor force and employment projections, projections of contributors and beneficiaries, demographic structure of the pension system, and system dependency rates.

**Finances of Single pillar PAYG**
- Macroeconomic trends, wage projections, pension benefit projections for the existing and new pensioners, revenue and expenditure of the pension system, required adjustments to contribution rates and replacement rates for zero current balance, and the implicit pension debt.

**Finances of Multi-pillar System**
- Pension benefit projections for new and existing pensioners under each of the three pillars (conventional PAYG, notional PAYG, and funded DC), revenues and expenditure of both PAYG and funded pillars, implicit pension debt of the PAYG system after the reform, and results of the reform (compares benefit projections and financial standing under the single pillar PAYG and multipillar scenarios).

**Individual accounts**
- Lifetime contributions and benefits and individual related summary statistics for up to six different individuals specified in the “Profiles” input sheet under PAYG system (statutory, with adjusted contribution rates and with adjusted benefits) and multi-pillar system (for those who switched to the multi-pillar system and those who remained in the PAYG system).
References
