P R O S T Application in Tanzania:
impact of reform on NSSF

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Demographic and economic context

- **Demographics**
  - Young population, old age population dependency rate=10%
  - High fertility rate: 5.4 children per woman
  - Life expectancy at birth=58.6/60.7
  - Life expectancy at retirement (age 60)=17.0/18.4

- **Economy**
  - High GDP growth rates (about 7% real)
  - Relatively high inflation (6%-8%)
  - High labor force participation rates for both men and women
Pension system in Tanzania

- Fragmented: 5 mainland pension funds + Zanzibar Social Security Fund
- NSSF (private sector) and PSPF (public service) cover 75% of active members
- Very low coverage: all funds cover less than 5% of the labor force
- Funds offered different benefits until the system was harmonized in July 2014
- We will show how PROST was used to evaluate the impact of Harmonization on NSSF
NSSF: main performance indicators in 2013

- System dependency rate \( \leq 2\% \) - very low because of young population, system immaturity, high rate of early withdrawals
- Average pension = 30\% of average wage of NSSF contributors
- Expenditures = 0.8\% of GDP
- Very high administrative costs (18\% of contributions)
- Generates surpluses, accumulated assets = 4.6\% of GDP
NSSF design: before Harmonization

- Partially funded DB, converted from a provident fund in 1998
- Pre-1998 pension rights paid out as DB pension
- Contribution rate=20%
- Benefits:
  - Old age
  - Invalidity
  - Survivorship
  - Withdrawals
  - Health insurance
  - Short-term benefits (maternity, funeral grant)
• Retirement age=60
• Benefit formula:
  ➢ Accrual rate=2% for first 15 years, 1.5% for each year above
  ➢ Maximum replacement rate=67.5%
  ➢ Reference wage=average of best 5 years over last 10 years, not valorized
  ➢ Lump sum=24*reference wage
• Pension indexation: recommendations from actuarial valuation reports (recent trend close to wage growth)
NSSF design: effect of Harmonization

- Benefit formula:

<table>
<thead>
<tr>
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<th>New rules</th>
<th>Old rules</th>
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<tbody>
<tr>
<td>Accrual rate</td>
<td>2.07%</td>
<td>2% for first 15 years, 1.5% for each year above (effective=2.12%)</td>
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<tr>
<td>Reference wage</td>
<td>Average of last 3 years,</td>
<td>Average of best 5 years over last 10 years, not valorized</td>
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<td>not valorized</td>
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<tr>
<td>Commutation/lump sums</td>
<td>Up to 25%, commutation</td>
<td>No commutation, lump sum=24*reference wage</td>
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<td>factor=12.5</td>
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- New formula applies to all members to pre- and post-reform years of contributions
- Harmonized pension indexation policy (assumed inflation)
Main assumptions used in projections

Demographics:
- UN population projections for Tanzania
- Total fertility rate decreases from 5.4 to 2.6 children per woman by 2080
- Life expectancy at birth increases from 58.6/60.7 to 73.4/77.3 for men/women by 2080
- Life expectancy at retirement (age 60) increases by 3.9/5.5 years for men/women by 2080

Economy:

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<tbody>
<tr>
<td>Real GDP growth rate, %</td>
<td>7.1%</td>
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<td>7.0%</td>
<td>6.9%</td>
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<td>4.1%</td>
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<tr>
<td>Inflation, %</td>
<td>7.3%</td>
<td>6.3%</td>
<td>5.9%</td>
<td>5.3%</td>
<td>5.1%</td>
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<td>4.9%</td>
<td>5.0%</td>
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</tr>
<tr>
<td>Real wage growth rate, %</td>
<td>3.9%</td>
<td>3.9%</td>
<td>3.8%</td>
<td>3.7%</td>
<td>3.6%</td>
<td>3.5%</td>
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<td>2.0%</td>
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Coverage: no expansion
Interest rate on PF investments=inflation rate
Projection results
System dependency rate
Average pension of new old age pensioners
(before commutation, % of contributors average wage)
Average pension of new old age pensioners (after commutation, % of contributors average wage)
Average pension of all existing old age pensioners (% of contributors average wage)

- Old rules
- Harmonization
Government annual obligations to finance deficits (% of GDP)
Summary of projection results

- System dependency rate grows fast from current <2% to 17% as DB system matures and longevity increases
- Early withdrawals put a strain on cash flows; in the longer run fewer people are eligible for regular pension
- Benefits at retirement: full benefits around 50%, slightly lower after Harmonization; regular pensions (after commutation) decrease after Harmonization to <40% due to commutation
- Post-retirement pensions most affected by Harmonization due to less generous indexation: go down from 45% to 30%, would be higher if commutation were not allowed
- Overall, benefit levels on average are quite adequate
Summary of projection results (cont.)

- Harmonization results in cost savings, mostly due to changes in pension indexation policy.
- Finances look healthy in the short- to medium term due to low initial system dependency rate and high contribution rate.
- However, in the longer run, as the system dependency rate grows, annual current balance turns negative: in around 2052 under the old rules, 2068 after Harmonization.
- Assets projected to deplete in around 2061 and 2077 respectively.
- Overall, over the projection period the system is insolvent under the old rules, may become solvent after Harmonization if the future interest rate on PF investments is at least >1 p.p. above inflation.
Some remaining issues

- Relatively high contribution rate (20%) may have negative effect on labor markets and broader economy, encourage evasion and under-reporting of wages
- Very high administrative costs largely due to competition among funds; funds merger is being considered which may help reduce them but other measures may be needed
- Early withdrawals remain a big issue in NSSF; so far has proven to be difficult to resolve
- In the longer run, there is an imbalance between the contribution rate benefit levels and retirement age
- More broadly, fragmentation and very low coverage are major issue