Towards Sustainable, Adequate and Safe pension - Louvain-la-Neuve, Nov 9, 2018
The Pension Commission 2020-2040

- Pension Commission set up (April 2013)
- Commission report (June 2014)
- Governmental programme (September 2014)
- Complement Commission report (April 2015): arduous work and part time pension
- Joint nota Pension Commission and Administration on technical implementation and transition (June 2017)
- Micro-simulation on the winners and losers from the (partial) transition for the private sector (Sept 2017) and the self-employed (Nov 2017)
Dependency ratio in Belgium

Source: CEV & Federal Plan Bureau
Belgium and EU compared: public pension spending

- Public pensions in % GDP, Belgium
- Public pensions in % GDP, EU

Graph showing the comparison between public pension spending in Belgium and the EU from 2013 to 2060.
1. **Définition commune année carrière entre régimes** (compteur kilométrique identique)

2. Valeurs des points dans chaque régime qui assurent équivalence ancien et nouveau système au moment transition

3. Convergence vers une valeur commune des points (devise commune)

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**Benefit ratio**

**Pension cost**

Financial and social sustainability

- **BE**
- **EU**

- **Public pensions in % GDP, Belgium**
- **Public pensions in % GDP, EU**
- **Public pensions in % GDP, BR2013, Belgium**
- **Public pensions in % GDP, BR2013, EU**
- **Benefit ratio Belgium**
- **Benefit ratio EU**

Graph showing the comparison of pension costs and benefit ratios between Belgium (BE) and EU, with projections from 2013 to 2060.
1. Définition commune année carrière entre régimes (compteur kilométrique identique)

2. Valeurs des points dans chaque régime qui assurent équivalence ancien et nouveau système au moment transition

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Pension Commission Proposition

- Financial sustainability (pension cost)
- Social Adequacy (benefit ratio)
- Automatic adjustment (eco and demo changes)
  - pension adjustment
  - contribution adjustment
  - Retirement age adjustment
  - Career requirement adjustment
Structural reform

- **common rules** governing the three pension regimes (private sector, self-employed, public sector)

- A generalized point system

- **Automatic adjustment mechanisms**: build up into the pension system to manage economic and demographic changes
Equivalence rule

Defined benefit

\[
P = \sum_{t=0}^{T} a_t w_t (1 + r_t)^{T-t}
\]

Point system

\[
P = \sum_{t=0}^{T} \frac{w_t}{k_t} v_t (1 + r_t)^{T-t}
\]

NDC

\[
P = \frac{1}{A_T} \sum_{t=0}^{T} \pi_t w_t (1 + r_t)^{T-t}
\]

\[a_t = \frac{v_t}{k_t}\]

\[v_t = \frac{\pi_t}{A_T}\]
Snapshot of the Point system

- Pension benefit

Individual Points account
Point value
Age conversion
Individual points account

- The amount of points earned each year is

\[ \text{points} = \frac{w}{\bar{W}} \]

- The wage \( w \) is the annual gross wage limited by
  - Wage ceiling (% average wage)
  - Wage floor (% average wage)

- The average wage (\( \bar{W} \)) is specific to each regime

- Different points for different regimes

- Points earned are collected in individual account
### Different regimes = different benefits

<table>
<thead>
<tr>
<th>Cohort retiring in 2016</th>
<th>Men</th>
<th>Women</th>
</tr>
</thead>
<tbody>
<tr>
<td>Public sector</td>
<td>2.677</td>
<td>2.414</td>
</tr>
<tr>
<td>Private sector</td>
<td>1.531</td>
<td>918</td>
</tr>
<tr>
<td>Self-employed</td>
<td>1.041</td>
<td>284</td>
</tr>
</tbody>
</table>

Source: SF Pension
point system with career mix

Self-employed

Private sector

Public sector

8 points

15 points

20 points
Point value

- The point value is computed every year based on
  - Target replacement rate ($\delta$)
  - Average wage ($\bar{W}$)
  - Reference career ($N$)

\[
\text{point value} = \frac{\delta \bar{W}}{N}
\]

Automatic indexing of the Value of the point to the wage and career changes
Age conversion

• Uniform career requirement

\[
\text{Normal retirement age} = \text{starting age} + \text{reference career (N)}
\]

• Start working at 20 years and \( N = 43 \) years
  - normal age = \( 20 + 43 = 63 \)
  - Age conversion <1 if retirement before 63
  - Age conversion >1 if retirement after 63

\[
\text{Age conversion} = \frac{e(\text{normal retirement age})}{e(\text{effective retirement age})}
\]
Age conversion (early starters)

Reference career (N)

Starting working age

malus

Age min

Normal age

Age max

bonus

Retirement age
Age conversion (late starters)

Reference career (N)

Starting working age

Age min

Normal age

Age max

No malus bonus

Retirement age
Pension indexation (after retirement)

• Pension indexation on economy-wide wage growth

\[ \frac{P_t}{P_{t-1}} = \beta \frac{\bar{W}_t}{\bar{W}_{t-1}} \]

• modulo sustainability coefficient $\beta \leq 1$
  - $\beta < 1$ if deficit
  - $\beta = 1$ otherwise
Adjustment Mechanisms (beyond alternative financing)

1. Définition commune année carrière entre régimes (compteur kilométrique identique)
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Career requirement

- Contribution rate
- Sustainability coefficient
- Replacement rate

Sustainability - social - financial
indexing reference career to longevity gain (including age limits)

- Work longer for longer pension
- Longevity gain: 2/3 working time and 1/3 pension time. (Working 2 year for each year of pension)
**Budget balance**

- Balancing pension cost and pension revenue

\[ \pi_t = \frac{P_t}{W_t} D_t = \delta_t D_t \]

Where \( D_t \) is the economic dependency rate

- Increasing \( D_t \) requires adjusting benefit rate \( \delta_t \) and contribution rate \( \pi_t \)
- It is true even if constant proportion of pension cost is financed from general tax revenue (alternative financing)
Contribution and replacement rate

- Defined benefit (fixed $\delta$)

- Defined contribution (fixed $\pi$)

- Defined ratio-Musgrave rule (fixed $\delta / (1-\pi)$)

*Fixed relative position (FRP)*: Contributions and benefits are set so as to hold constant the ratio of per capita earnings of those in the working generation (net of contribution) to the per capita benefits of retirees.

(Musgrave 1981)
### Musgrave rule illustration

<table>
<thead>
<tr>
<th>Economic dependency rate</th>
<th>2015</th>
<th>2050</th>
<th>2050</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0,5</td>
<td>0,5</td>
<td>0,8</td>
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</table>

#### Defined contribution

<p>| | | | |</p>
<table>
<thead>
<tr>
<th></th>
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</tr>
</thead>
<tbody>
<tr>
<td>average pension</td>
<td>1500</td>
<td>3000</td>
<td>1876</td>
</tr>
<tr>
<td>contribution rate</td>
<td>0,25</td>
<td>0,25</td>
<td>0,25</td>
</tr>
<tr>
<td>average net wage</td>
<td>2250</td>
<td>4500</td>
<td>4500</td>
</tr>
<tr>
<td>Musgrave ratio</td>
<td>0,66</td>
<td>0,66</td>
<td>0,42</td>
</tr>
</tbody>
</table>

#### Defined benefit

<p>| | | | |</p>
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<tbody>
<tr>
<td>average pension</td>
<td>1500</td>
<td>3000</td>
<td>3000</td>
</tr>
<tr>
<td>contribution rate</td>
<td>0,25</td>
<td>0,25</td>
<td>0,4</td>
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<tr>
<td>average net wage</td>
<td>2250</td>
<td>4500</td>
<td>3600</td>
</tr>
<tr>
<td>Musgrave ratio</td>
<td>0,66</td>
<td>0,66</td>
<td>0,83</td>
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#### Musgrave rule

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<tbody>
<tr>
<td>average pension</td>
<td>1500</td>
<td>3000</td>
<td>2574</td>
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Sustainability coefficient

• One option is to adjust $\beta$ so as to match the evolution of the value of the point.

$$\frac{P_t}{P_{t-1}} = \beta_t \frac{W_t}{W_{t-1}} = \frac{v_t}{v_{t-1}}$$

• Which would imply the following rule

$$\beta_t = \frac{\delta_t/N_t}{\delta_{t-1}/N_{t-1}}$$
Transition methods

- **Successive affiliation** (Italy):
  pension for past career based on old system + pension for future career based on new system.
  (problem: slow transition process & non separability)

- **Simultaneous affiliation** (Sweden and Poland) :
  Pension for the whole career based on the old system + pension for the whole career based on the new system.
  Final pension is weighted average of the two pensions.
  (problem : operate the two systems simultaneously).
Transition trilemma

1. Définition kilométrique identique
2. Valeurs des points dans chaque régime qui assurent équivalence ancien et nouveau système au moment transition
3. Convergence vers commune des points (devise commune)

No retroactivity

No mix old & new pensions

Italia

Poland

Speedy transition

Sweden
Further information

• A strong and reliable social contract (June 2014) in French and Dutch
  https://www.conseilacademiquepensions.be/

• Schokkaert, E., P. Devolder, J. Hindriks and F. Vandenbroucke (2018),
  Towards an equitable and sustainable point system, Journal of
  Pension Economics and Finance,
  https://doi.org/10.1017/S1474747218000112

• Devolder, P., J. Hindriks, E. Schokkaert and F. Vandenbroucke (2017),
  Réformes des pensions légales: le système de pensions à points,
  Regards économique n°130.

• Devolder, P, J. Hindriks (2018), la pension à points: 5 principes pour
  plus d’équité dans les régimes de pension en Belgique. Regards
  économique n°139.