



# **ADEQUATE CONTRIBUTION RATES FOR SUSTAINABLE PENSION FUNDING**

LESSONS FROM THE GERMAN DEBATE AND ACTUAL  
PRACTICE

Markus Sailer

**FRIEDRICH  
EBERT   
STIFTUNG**





# ADEQUATE CONTRIBUTION RATES FOR SUSTAINABLE PENSION FUNDING

## LESSONS FROM THE GERMAN DEBATE AND ACTUAL PRACTICE

Markus Sailer

German Pension Insurance, Berlin, FRG  
Department for Research and Development  
December 2015

- Pension funding ought to follow a comprehensive concept of sustainability. That means to strike a balance between broad and affordable coverage, adequate benefits and retaining sufficient financial reserves. In the case of Germany this means to face the challenge of an ageing population and therefore curb the trend increase in contribution rates while maintaining adequate replacement rates and raise the retirement age to account for longevity increases.
- The German statutory pension insurance is funded according to the pay-as-you-go method. Revenues are generated through mandatory and voluntary contributions to cover earned entitlements and through transfers from the federal budget to cover the redistributive part of the social insurance pension scheme.
- Based on demographic and economic projections the rate of contribution is set on an annual base in a way that ensures the liquidity of the pension insurance throughout the entire year. At the end of the year the liquidity reserve should amount between 20 and 150 percent of the expenditures covered by contributions. Otherwise the rate of contribution is adjusted accordingly.
- The determination of the rate of contribution is carried out in a process that involves continuous and structured monitoring of demographic, economic and financial developments affecting the liquidity of the pension insurance over the entire year. This monitoring includes stakeholders and independent parties as well. It is this plurality of views having a share in the process that safeguards its quality.

## 1. A Comprehensive Concept of Pension Sustainability

The German system of pension provision is made up from three pillars. The principal source of retirement income is provided by the schemes that form the first pillar. Supplementary sources of income are provided by complementary occupational schemes and private commercial insurance or investment plans. Outside the public sector enrolment into complementary and private schemes is voluntary. (Slides 2 and 3)

The first pillar of the German pension system is made up from the statutory pension insurance, the pension insurance for farmers, statutory pension plans for members of the chambered professions (lawyers, tax advisors, auditors, physicians, dentists, veterinaries, architects) and for civil servants. Of those first pillar schemes the statutory pension insurance is by far the most important. It provides coverage for employees and specific groups of the self-employed. Voluntary insurance is possible as well.

The German statutory pension insurance is funded according to the pay-as-you-go method. Contributions are levied on gross wages up to the income threshold. The payment of contributions is equally shared between employees and employers.

In face of the ageing German population the challenge of sustainable funding is to strike the balance between an adequate replacement rate for pension provision and to curb the trend increase in contribution rates. The third requirement is that the liquidity of the statutory pension insurance is ensured at all time as well (Slide 1).

The compromise for striking the balance is to allow the rate of contribution to rise until 2020 to 20 percent and until 2030 to 22 percent. The current rate of contribution is 18.7 percent of gross wages up to the income assessment threshold. During the same period of time the replacement rate net of contributions to the sickness and long-term care insurance will decline from the current 47.4 percent to 43.4 percent by 2020 and to 40.3 percent by 2030 (Slides 4 to 7).

In addition, long-term stability of the statutory pension insurance is supported by a gradual increase in the

statutory retirement age from 65 in 2011 to 67 by 2030. The statutory retirement age in 2015 is 65 years and 4 months of age (Slides 8 and 9).

## 2. Sources of Pension Funding

The statutory pension insurance is funded mainly from two sources (Slides 11 and 12):

- Mandatory and voluntary contributions
- Transfers from the federal budget.

The pension entitlement of an individual is based on life time wage earnings (standardized by the average wage of all the insured). These pensions are in principle financed by the contributions made by the active employees (Slide 10).

The transfers from the federal budget are bound to finance the redistributive part of the social insurance pension. Examples for that are the coverage of periods of unemployment and sickness, of maternity and motherhood, of pensions for widows, widowers and orphans, of pensions for the citizens of the former German Democratic Republic and some more.

In 2014 total revenues were Euro263.5bn, of which 76.2 percent were contributions, 23.2 percent were transferred from the federal budget and 0.6 percent were interest revenues earned on liquidity reserve. Expenditures totalled at 260.4bn Euro. The balance of Euro3.1bn raised the liquidity reserve to Euro35bn.

## 3. Determination of the Rate of Contribution

In the framework of the German statutory pension insurance the adequate rate of contribution must fulfil three conditions. First, the revenues emerging under the fixed rate of contribution must ensure liquidity of the pension insurance throughout the entire current year. Second, it must ensure that at the end of a current year, the liquidity reserve does not fall below of 20 percent of the monthly expenditure covered by contributions. Third, the liquidity reserve should not exceed 150 percent of the monthly expenditure covered by contributions.

For the decision on the rate of contribution the following rule applies (Slide 13):

- If at the current rate of contribution the liquidity reserve is within the corridor of 20 to 150 percent of expenditures funded by contributions, then the rate remains unchanged.
- If the liquidity reserve is forecasted to fall below its lower boundary, then the rate of contribution is increased to a rate that raises the revenues to a level which is within the statutory corridor.
- If at the current rate of contribution the liquidity reserve exceeds the upper boundary, then the rate of contribution is lowered to a level that reduces the excess liquidity.

The determination of the rate of contribution is carried out in a structured and continuous process. In this process three modules are used. The demographic module, the economic module and the financial module of the statutory pension insurance.

The demographic module reflects the long-term development of the German population. For the purposes of the pension insurance the demographic features specific to the insured and pensioners of the statutory pension insurance are added. Those include specific features of mortality and retirement behaviour and shifts in statutory pensionable age (Slide 14)

The economic module provides forecasts on the number of employees, on the number of unemployed and on average wage growth as well as on average unemployment benefits.

Based on those forecasts the rate of contribution is then determined by the financial model of the pension insurance.

The financial model produces detailed forecasts of the revenues, expenditures and the liquidity reserve conditional on the rate of contribution. The revenues are disaggregated into revenues from contributions and transfers from the federal budget (Slide 15).

The development of the revenues from contributions is derived from the change in employment and increase in average wages and the rate of contribution

The transfers from the federal budget are rule based and linked to changes in gross wages, change in the rate of

contribution to the pension insurance, and the revenues of value added tax (VAT).

The expenditure side is detailed into expenditures on pensions, on allowances for the pensioners' contributions to sickness funds, on rehabilitative measures and on administrative expenditures. Finally from the balance of revenues and expenditures the development of the liquidity reserve is derived.

#### **4. Governance**

The determination of the rate of contributions is carried out in a continuous and structured process that involves various participants, independent parties and stakeholders as well (Slides 16 to 19).

The demographic scenario is developed under the auspices of the Federal Statistical Office. A comprehensive scenario forecast is carried out every five years. But there is an annual update using the most recent development of the previous year.

The economic forecast is drawn up twice a year by a group of independent German and international economic research institutes. The federal ministry of the economy in cooperation with the federal ministry of finance, the federal ministry of labour and social affairs, the federal ministry of health and the federal ministry of transport continuously updates and refines those forecasts to set the parameters for budgetary planning.

The financial parameters for the statutory pension are forecasted by a standing working party that meets at least four times per year. The members of the working party are representatives of the statutory pension insurance, the federal ministry of labour and social affairs and the supervisory office for social insurance.

In the November meeting of the working party the rate of contribution for the following year is determined.

The determined rate is put into a legal prescription by a government regulation. However, in case of planned changes in the pension policy a discretionary decision may be made to set the rate of contribution at a different level. Such a procedure requires a law voted on by the Federal Parliament.

Together with the formal publication of the rate of contribution for the following year a midterm forecast for the three years following afterwards and a long term forecast for the following fifteen years is published.

## 5. Remarks and Conclusion

The German example can provide a number of conclusions and lessons for the management of pension schemes (Slide 20).

First the sustainability of the German statutory pension insurance is established in a continuous process of monitoring. Thus financial risks within the pension insurance are realized at an early stage and can be dealt with in due time.

Second, it is easier to ensure long-term sustainability in a changing demographic and economic environment,

when the burden of adjustment is distributed to more than one parameter. Besides rates of contribution the benefit level – in terms of the replacement rate – and the retirement age ought to be adjusted.

Third, besides that rule based management is preferable, there must be some room for discretionary policy measures in case of major unforeseeable events. How much room for discretionary action is tolerable is difficult to specify in advance.

Fourth, it has proven useful to include external and independent expertise into the determination of financial parameters.

Fifth, there is a current debate if the lower threshold of the liquidity reserve should be increased to e.g. 40 percent of the monthly expenditure covered by contributions. The results of the debate remain to be seen.

## DIMENSIONS OF SUSTAINABILITY

- Coverage which is affordable
- Adequate Benefits
- Sustainability of financial reserves

1

## The German Pension System: Coverage

Third Pillar	Private Pension Insurance							
Second Pillar	Occupational Pensions						Chambered Professions	Civil Servants
First Pillar	Farmers' Pension Provision	Statutory Pension Insurance						
		Insurance of Craftspeople	Insurance of Artists and Publicists	Insurance of Vulnerable Groups of the Self Employed	Voluntary Insurance	Miners	Employees	
Zero Pillar	Means tested Income Maintenance at Subsistence Level							

Schematic diagram without legal implications

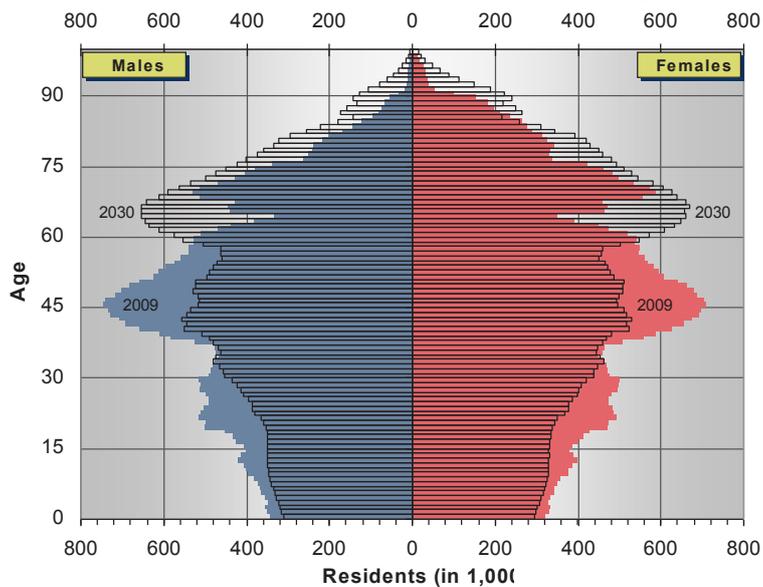
2

## COVERAGE IN THE STATUTORY PENSION INSURANCE

- Predominantly Employees
- Special Groups of Self-employed  
(Craftsmen, private Teachers, Artists, Fishermen and others)
- Recipients of Wage Compensation such as Unemployment Benefit
- Voluntary Insurance is possible
- Civil Servants, Professional Soldiers and Judges are not insured in the National Compulsory Pension Scheme

3

## The number of old people is rising, the number of younger people is declining



4

## DEPENDENCY RATIO

### Age-groups 65+ / 15–64

2005	2010	2015	2030	2050
32	34	35	45	57

Data: Statistisches Bundesamt

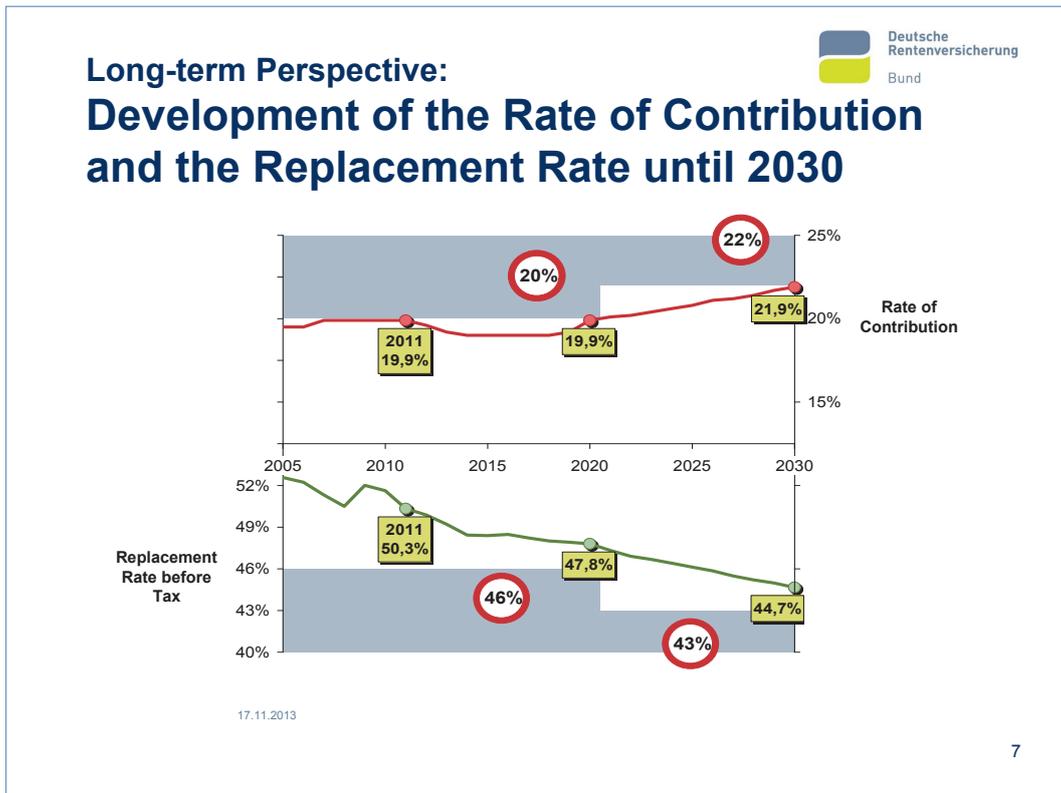
5

## contribution rate and the replacement rate

Variable	Target Value		
	2015	2020	2030
Contribution rate	18.7%	20%	22%
Replacement rate	47.4%	43.4%	40.3%

↪ **Change from a defined benefit scheme to a defined contribution scheme**

6



## RETIREMENT AGE

- Current retirement age is 65 plus 4 month
- Early retirement is possible, with an actuarial deduction of 3.6% for every year before regular retirement age (2 years: 7.2%)
- Retirement age is gradually increasing from 65 (2011) to 67 (2031)

Deutsche Rentenversicherung  
Bund

8

## Retirement age increase

Year of increase	Age group	Shifting in months	Year of retirement
	1946	0	2011
1	1947	1	
2	1948	2	
3	1949	3	
4	1950	4	
5	1951	5	
6	1952	6	
7	1953	7	
8	1954	8	
9	1955	9	
10	1956	10	
11	1957	11	
12	1958	12	2024
13	1959	14	
14	1960	16	
15	1961	18	
16	1962	20	
17	1963	22	
18	1964	24	2031

9

## ENTITLEMENT TO A PENSION

$$Pension \approx CPV \times \sum EP_{year}$$

$$EP_{year} = \frac{individual\ income_{year}}{average\ income_{year}}$$

CPV: Current pension value    EP: Earnings point

- ↳ Close connection between average income over the life-cycle (until retirement age) and individual replacement rate
- ↳ Income-related pension scheme instead of tax-financed basic pension

10

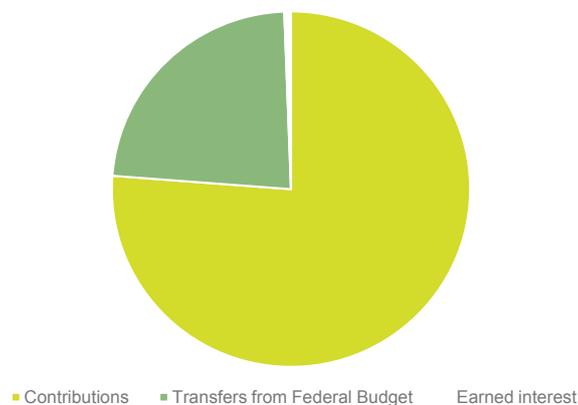
## SOURCES OF FUNDING

- Pay-as-you-go system ("PAYG")  
(sustainable reserve of 20%-150% monthly expenditure)
- Contribution proportional to gross salary  
(current contribution rate 18.7%)
- Contribution ceiling to the amount of double average gross salary
- Employee and employer each pay one half of contribution
- Additional tax-financed subsidy (~25% of expenditure)
- Interest earned on liquidity reserve

11

## STRUCTURE OF FUNDING IN 2014

Structure of Revenues



12

## DECISION RULE

- Target: Stabilization of economic development.
- Means: Stabilization of the contribution rate

Sustainable liquidity reserve between 20% and 150% of monthly expenditure

- Sustainable liquidity reserve is lower than 20%: raise the contribution rate
- Sustainable liquidity reserve is higher than 150%: lower the contribution rate
- Sustainable liquidity reserve is within the corridor: the contribution rate remains unchanged

13

## SUMMARY OF MODULES

- Demographic Module
  - Forecast of the population according to age and gender
  - Refinement according to pension insurance membership
- Economic Module
  - Forecast of employment, wage growth
  - Forecast of unemployment and level of compensation

14

## SUMMARY OF MODULES

- Financial Module
  - Forecast of contribution revenues
  - Forecast of transfers from budget
  - Forecast on expenditures: pensions, allowances for pensioners contributions to sickness funds, expenditures on rehabilitative measures, administrative cost
  - Forecast of the balance and the size of the liquidity reserve

15

## ITEMS OF FINANCIAL PROJECTIONS

- Future contribution rates
  - Annual pension adjustment rate
  - Development of future replacement rates
- }
  - Next year
  - Long-term projections (2040)
  - Impact of pension reforms
- Liquidity in the current and the following year

16

## GOVERNANCE

- Cooperation of various institutions in the monitoring and forecasting process
- Demographic scenarios coordinated by the Statistical Office
- Economic forecast:
  - Independent German and international economic research institutes
  - Governmental working party including the federal ministry of economy, the federal ministry of labour and social affairs, the federal ministry of health and the federal ministry of transport

17

## GOVERNANCE (contd.)

- Forecast of pension insurance finances and determination of the rate of contribution
  - Working party including representatives of the statutory pension insurance, the federal ministry of labour and social affairs, the supervisory office of social insurance and the German central bank.

18

## GOVERNANCE (contd.)

- Regulation issued by the Government on the rate of contribution
- Law approved by the Federal Parliament in case of “political setting” of the rate of contribution.
- Annual report on the sustainability of the statutory pension insurance

19

## SUSTAINABLE PENSION SYSTEM

1. Continuous process of monitoring to discover emerging financial problems in due time.
2. Comprehensive concept of sustainability: Coverage, adequate benefits, affordable rates of contributions, reasonable ratio of years in employment and years of retirement given the increase in longevity
3. Striking the balance between rules based and discretionary pension system management
4. Consulting with external and independent expertise has proven useful.
5. The minimum size of the liquidity reserve is subject to debate

20



## About the author

**Markus Sailer** is a fellow of the research department of *Deutsche Rentenversicherung Bund*, Berlin.

The views expressed in this publication are not necessarily those of the Friedrich-Ebert-Stiftung. The views expressed here are his own and without prejudice to the governing bodies and the board of directors of *Deutsche Rentenversicherung Bund*.

## Imprint

2016 Friedrich-Ebert-Stiftung Indonesia Office  
Jl. Kemang Selatan II No. 2A, Jakarta 12730, Indonesia

## Responsible:

Sergio Grassi | Country Director  
Rina Julvianty | Program Officer

Phone: +62 21 7193711 | Fax: +62 21 71791358  
Website: [www.fes.or.id](http://www.fes.or.id)

To order publication:  
[info@fes.or.id](mailto:info@fes.or.id)

Commercial use of all media published by the Friedrich-Ebert-Stiftung (FES) is not permitted without the written consent of the FES.

**Friedrich-Ebert-Stiftung** (FES) is the oldest political foundation in Germany. The foundation is named after Friedrich Ebert, the first democratically elected president of Germany.

The **Regional Programme in Asia** complements FES programmes and projects on the global and national level. Its approach and focus is going beyond the national level by responding to the trends of globalisation, labour mobility, regional integration and connectivity in all areas of life. The projects conducted under its framework target to build transnational networks and coalitions between individuals and organisations and promote change for more social justice, sustainable peace, economic development in the region.