

**„DEPENDENCY RATIO CALCULATOR“  
SIMULATION TOOL FOR THE INTERACTION BETWEEN  
DEMOGRAPHY, PENSIONS AND THE LABOUR MARKET**

**OECD - Workshop on public pensions sustainability and  
disability pensions procedures and reforms**

**19.12.2011**

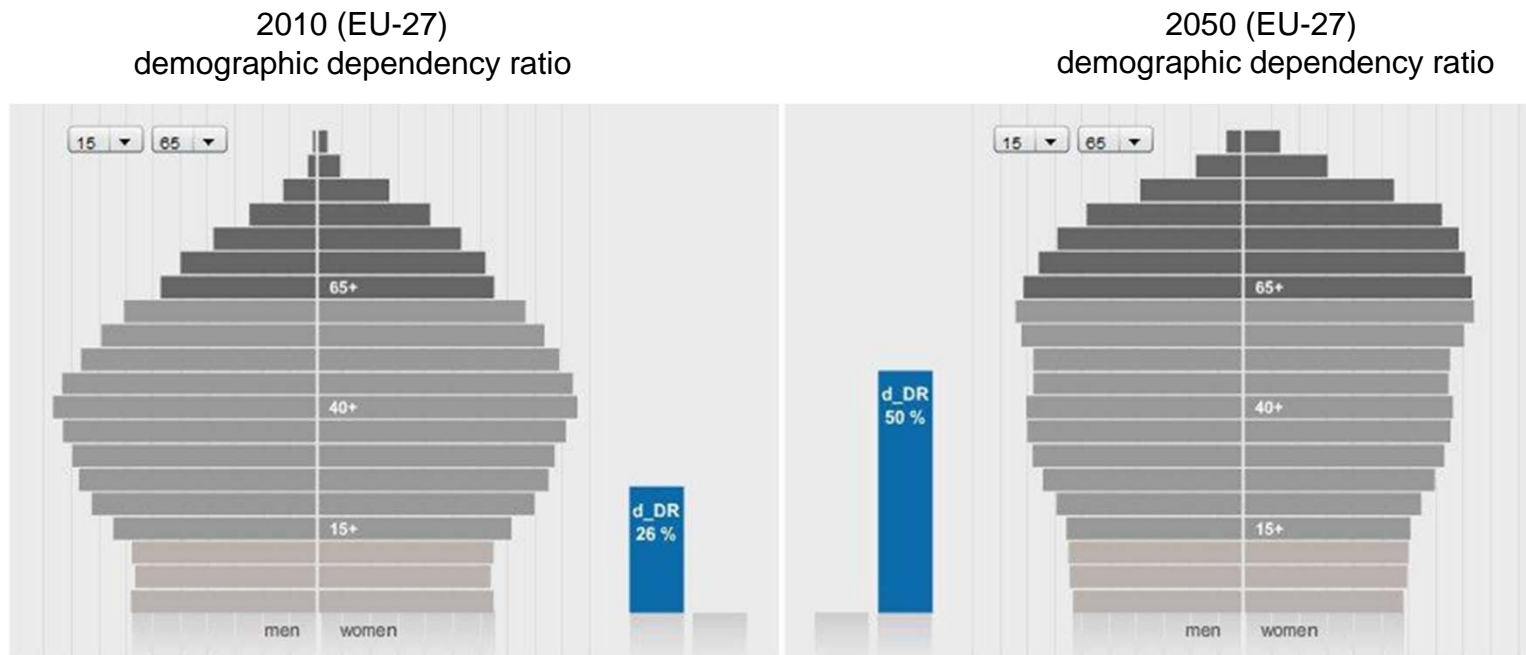
Josef Wöss / Erik Türk (AK Wien)

# TOPICS

- **DEMOGRAPHIC CHANGE**
- **DEPENDENCY RATIOS – DEMOGRAPHIC / ECONOMIC**
- **IMPACT OF LABOUR MARKETS ON ECONOMIC DEPENDENCY RATIOS AND ON PUBLIC PENSION EXPENDITURE**
- **CONCLUSIONS**

# Dependency Ratio Calculator

## DEMOGRAPHIC DEPENDENCY RATIO 2010–2050 (EU-27)

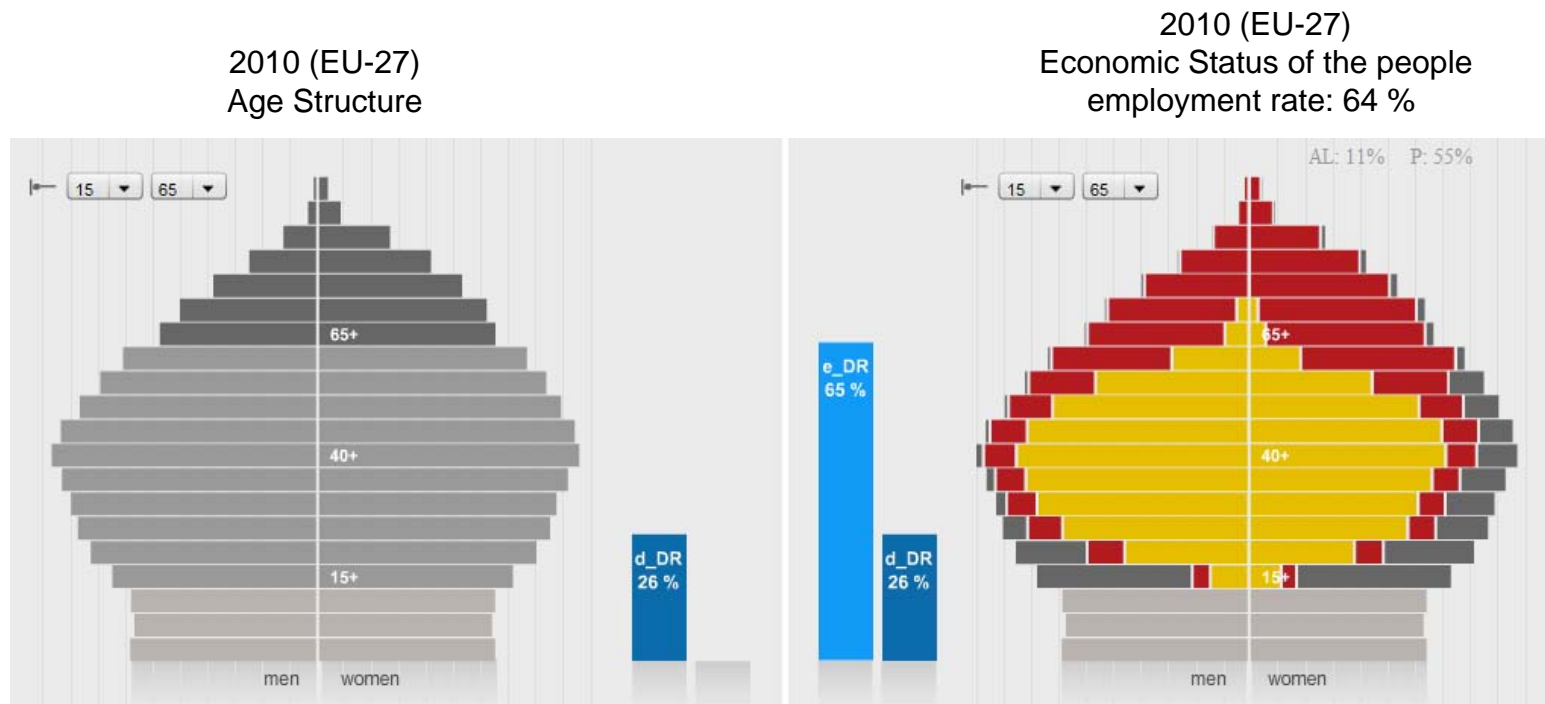


d\_DR = demographic dependency ratio: population 65+ relative to 15-64

Source: AK-Wien / Dependency Ratio Calculator (data: europop 08)

# Dependency Ratio Calculator

## DEMOGRAPHIC vs. ECONOMIC DEPENDENCY RATIO 2010 (EU-27)



d\_DR = demographic dependency ratio: population 65+ relative to 15-64

e\_DR = economic dependency ratio: pensioners (old-age, early retirement, disability) and unemployed relative to people in employment

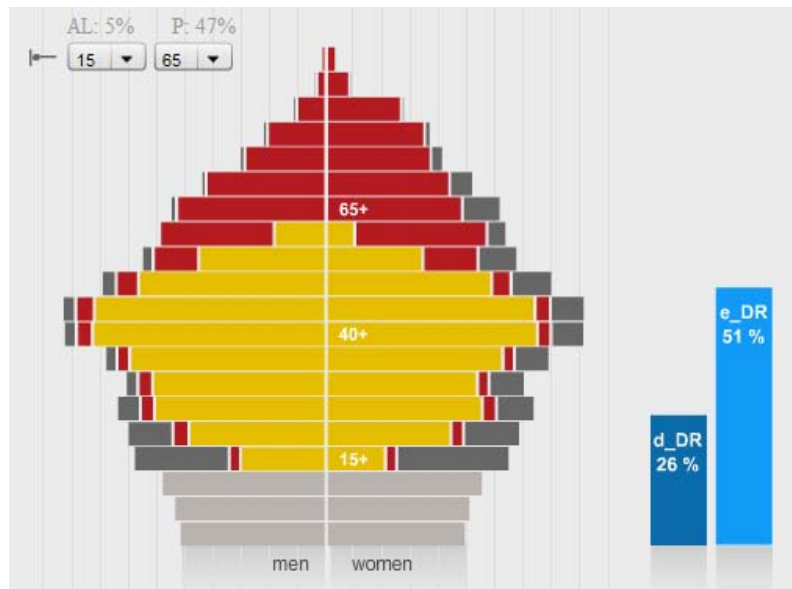
people in employment
  pensioners and unemployed
  neutral - housewives/housemen etc. (right picture)

Source: AK-Wien, Dependency Ratio Calculator (database: Eurostat – europop 08 / Labour Force Survey 2011; EU-Commission – Ageing Report 2009; own calculations)

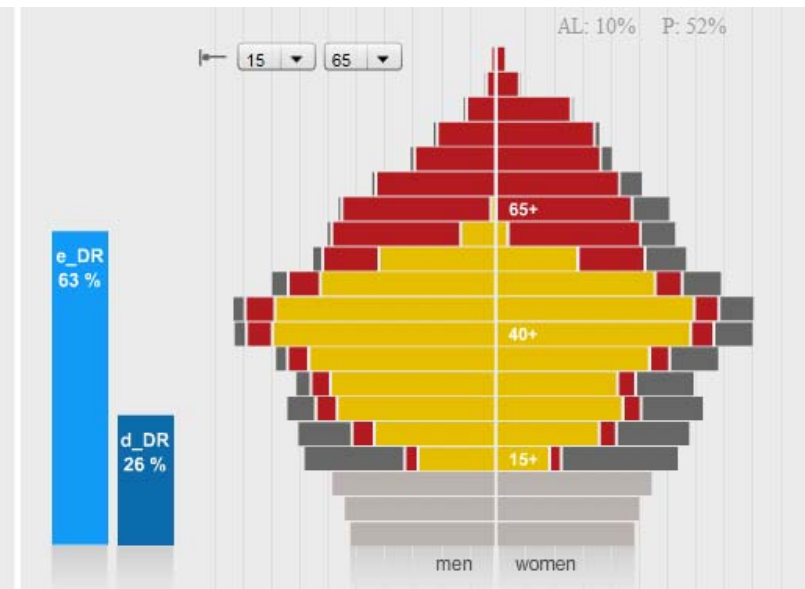
# Dependency Ratio Calculator

## COMPARISON OF LABOUR MARKET STATUS WITH AND WITHOUT MINI-JOBS 2010 (Austria)

2010 (Austria)  
Economic Status of the people  
Eurostat Data (incl. Mini-Jobs)  
employment rate: 72 %



2010 (Austria)  
Economic Status of the people  
national statistics (excl. Mini-Jobs etc.)  
employment rate: 65 %



d\_DR = demographic dependency ratio: population 65+ relative to 15-64

e\_DR = economic dependency ratio: pensioners (old-age, early retirement, disability) and unemployed relative to people in employment

people in employment
  pensioners and unemployed
  neutral - housewives/housemen etc.

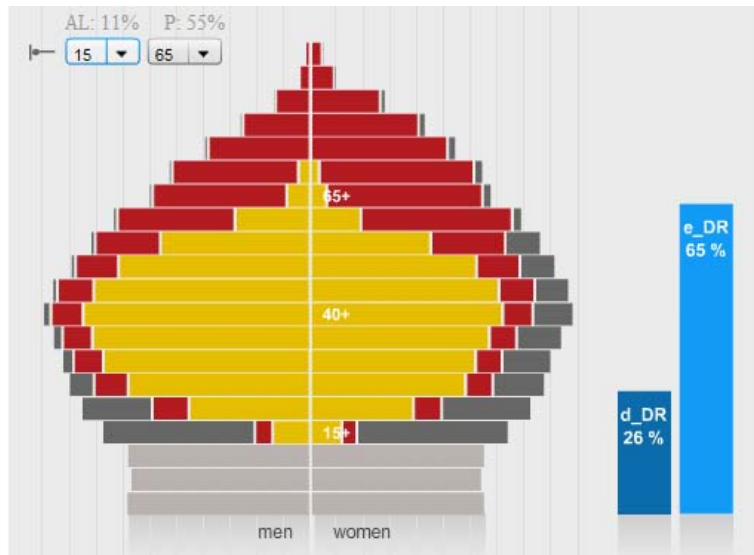
Source: AK-Wien, Dependency Ratio Calculator (database: Eurostat – europop 08 / Labour Force Survey 2011; EU-Commission – Ageing Report 2009; national statistics taken from HV, WIFO, BMASK, AMS, STAT; own calculations)

# Dependency Ratio Calculator

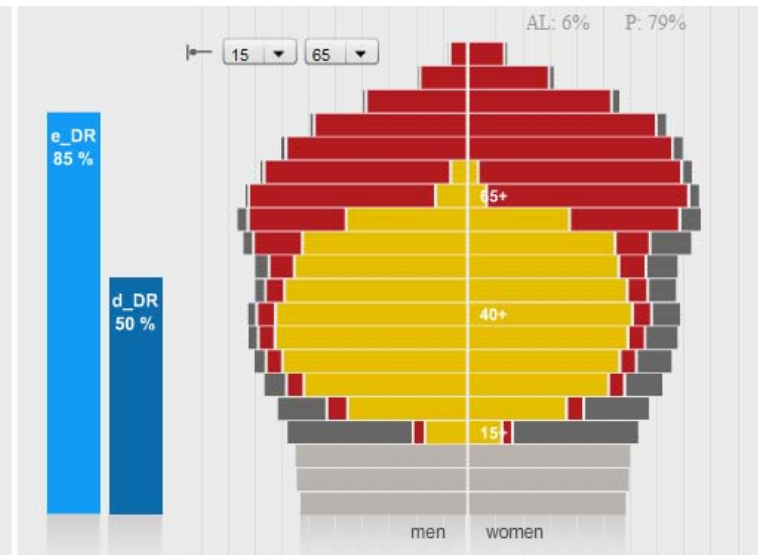
## ECONOMIC DEPENDENCY RATIO (EU-27)

### 2010 (current situation) - 2050 („standard“-scenario)

2010 (EU-27)  
Economic status of the people  
employment rate: 64 %



2050 (EU-27)  
Economic status of the people  
„standard“-scenario; employment rate: 70 %



d\_DR = demographic dependency ratio: population 65+ relative to 15-64

e\_DR = economic dependency ratio: pensioners (old-age, early retirement, disability) and unemployed relative to people in employment

people in employment
  pensioners and unemployed
  neutral - housewives/housemen etc.

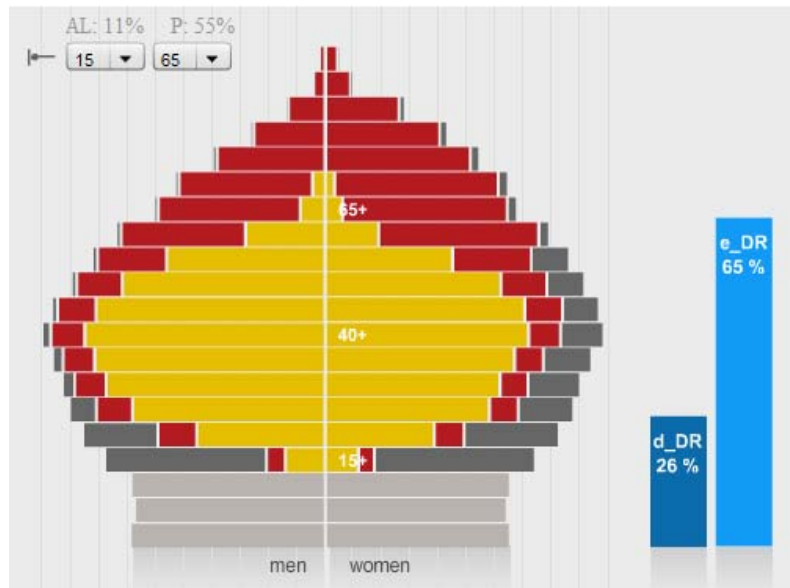
Source: AK-Wien, Dependency Ratio Calculator (database: Eurostat – europop 08 / Labour Force Survey 2011; EU-Commission – Ageing Report 2009; own calculations)

# Dependency Ratio Calculator

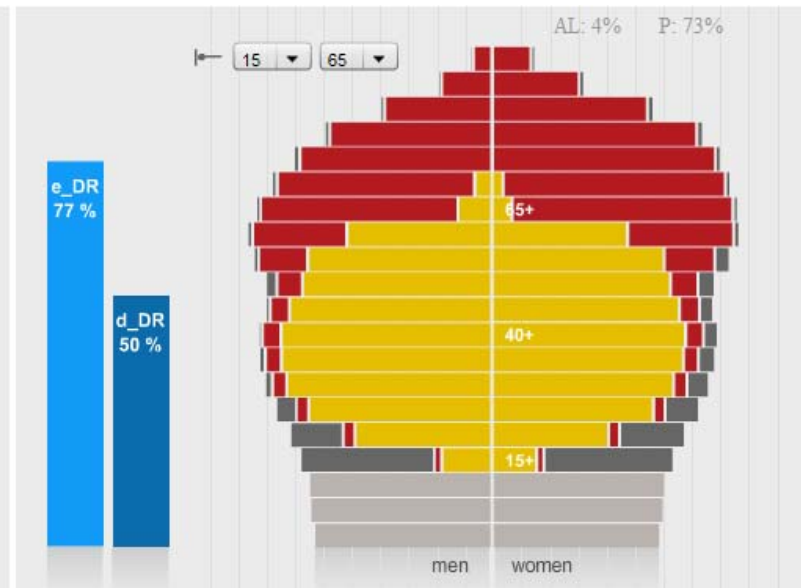
## ECONOMIC DEPENDENCY RATIO (EU-27)

### 2010 (current situation) - 2050 („EU2020plus“-Scenario)

2010 (EU-27)  
Economic status of the people  
employment rate: 64 %



2050 (EU-27)  
Economic status of the people  
„EU2020plus“-Scenario“; employment rate: 76 %



d\_DR = demographic dependency ratio: population 65+ relative to 15-64

e\_DR = economic dependency ratio: pensioners (old-age, early retirement, disability) and unemployed relative to people in employment

people in employment
  pensioners and unemployed
  neutral - housewives/housemen etc.

Source: AK-Wien, Dependency Ratio Calculator (database: Eurostat – europop 08 / Labour Force Survey 2011; EU-Commission – Ageing Report 2009; own calculations)

# Dependency Ratio Calculator

## EVOLUTION OF PENSION EXPENDITURE

### „Standard-Scenario“ versus „EU2020plus-Scenario“

#### DECOMPOSITION IN 4 MAIN DRIVERS

**EU27 2010 (M) standard / EU27 2050 (M) standard**

Decomposition of pension expenditure 1 2 3

	Pens./ GDP	=	Dem. Dep.	*	Cov. Ratio	*	Empl. Rate	*	Benefit Ratio
2010	10.9%	=	26%	*	138%	*	1.53	*	20%
2050	12.2%	=	50%	*	111%	*	1.4	*	16%
Contr.	1.3	=	10.1	*	-3.4	*	-1.37	*	-4.2
Δ	12%		92%		-19%		-9%		-22%

**EU27 2010 (M) standard / EU27 2050 (M) 2020+30**

Decomposition of pension expenditure 1 2 3

	Pens./ GDP	=	Dem. Dep.	*	Cov. Ratio	*	Empl. Rate	*	Benefit Ratio
2010	10.9%	=	26%	*	138%	*	1.53	*	20%
2050	11.3%	=	50%	*	112%	*	1.29	*	16%
Contr.	0.4	=	10.1	*	-3.2	*	-2.68	*	-4
Δ	3%		92%		-18%		-16%		-22%

% p.

% p.

average earned ir  prod. growth  inc. growth in %

pension level (av. change in pensio costs of unempl. |

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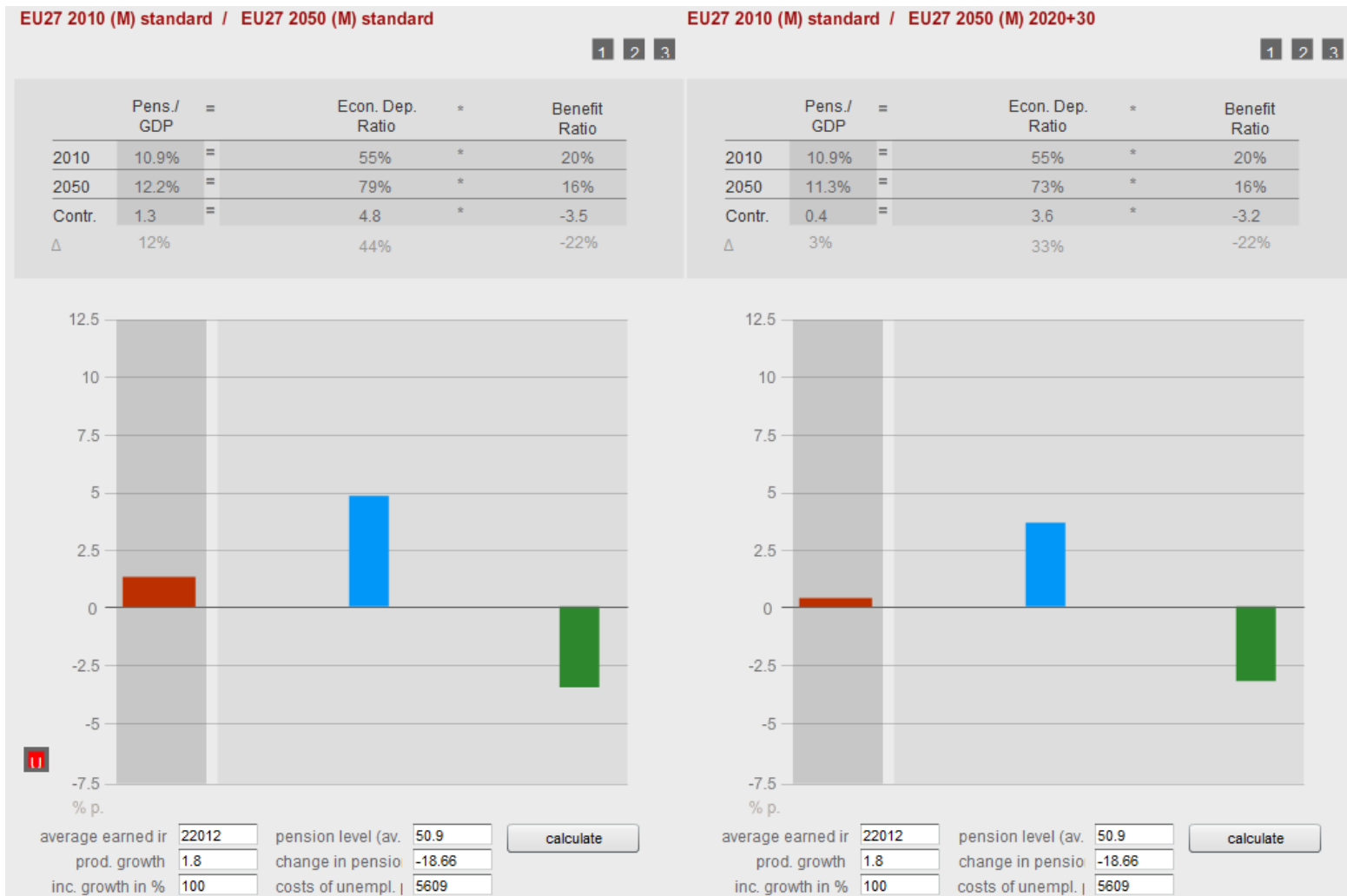


# Dependency Ratio Calculator

## EVOLUTION OF PENSION EXPENDITURE

### „Standard-Scenario“ versus „EU 2020 plus-Scenario“

## DECOMPOSITION FOCUSED ON EC.DEP. RATIO / BENEFIT RATIO

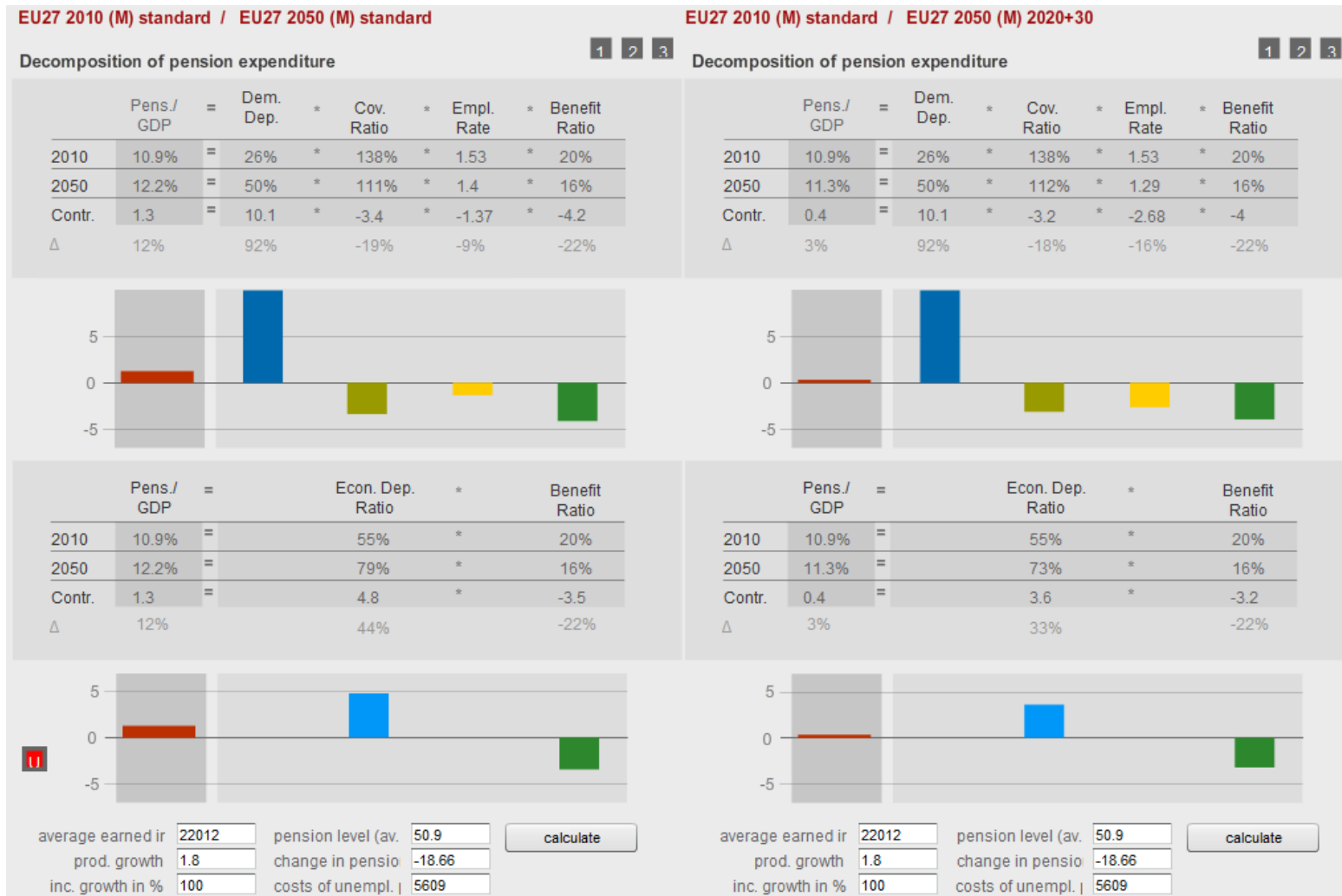


# Dependency Ratio Calculator

## EVOLUTION OF PENSION EXPENDITURE

### „Standard-Scenario“ versus „EU 2020plus-Scenario“

## DECOMPOSITION / SYNOPSIS



# DEPENDENCY RATIOS – CONFUSION BY MISTAKE?

THE ECONOMIST, 9<sup>th</sup> April 2011



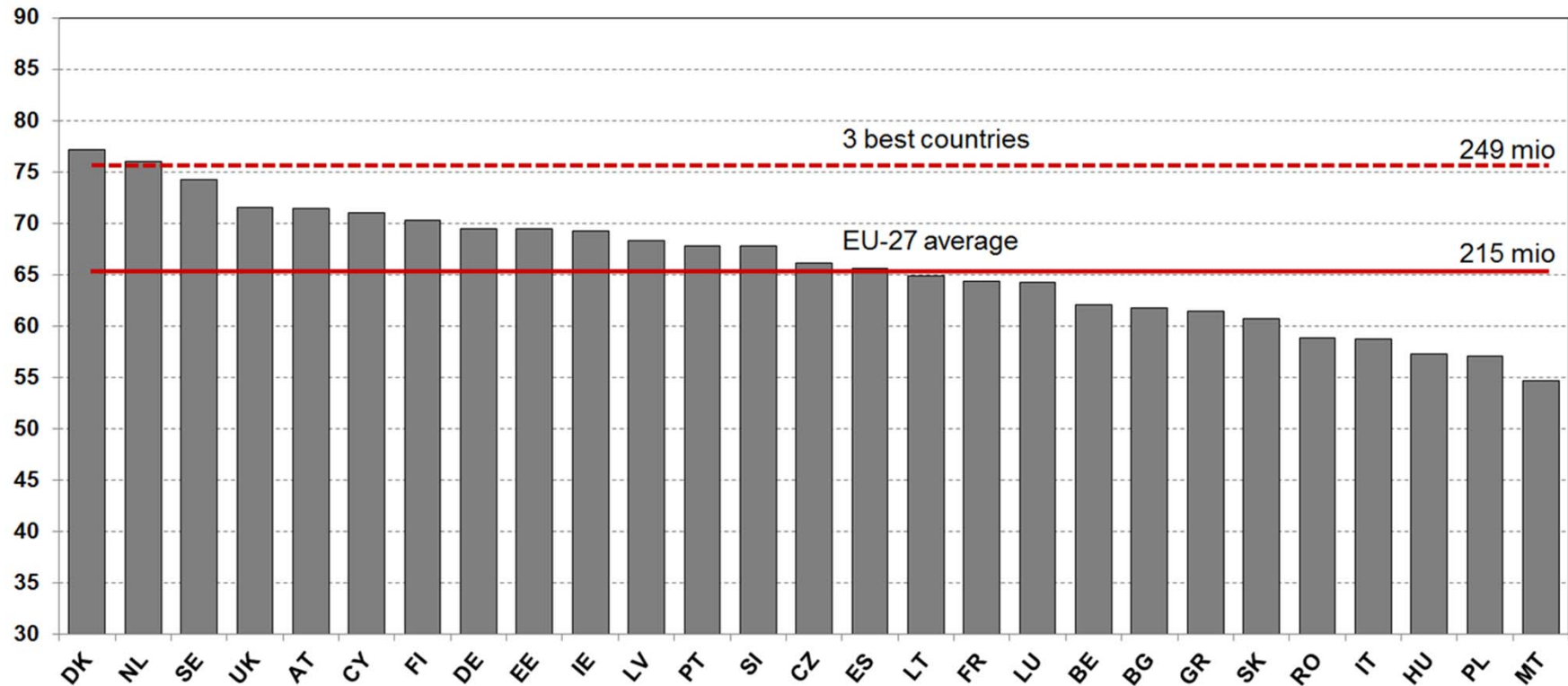
Text: „...the key figure is the ratio of workers to pensioners, known as the support (or dependency) ratio. This is deteriorating steadily in all rich countries (see chart).“



Charts: „Support ratio: The number of people of working age compared with the number of people beyond retirement age“ [65+ relative to 20-64]

# EMPLOYMENT RATES / EMPLOYMENT POTENTIAL EU-27 (2007)

Population 15-64: 329 mio



Source: Eurostat, Labour Force Survey  
(EU-Commission, Demography Report 2008)

# CONCLUSIONS (I)

- **THE AGEING OF THE POPULATIONS IS ONE OF THE MAIN CHALLENGES ACROSS EUROPE**
  
- **A CLEAR DISTINCTION HAS TO BE MADE BETWEEN**
  - **DEMOGRAPHIC (OLD AGE) DEPENDENCY RATIOS**  
(people aged 65+ relativ to people aged 15-64/20-64) and
  - **ECONOMIC DEPENDENCY RATIOS**  
(pensioners/unemployed relative to people in employment)
  
- **THE EVOLUTION OF ECONOMIC DEPENDENCY RATIOS IS MUCH MORE RELEVANT AND SHOULD BE BROUGHT TO THE FORE IN THE POLITICAL DEBATE**
  
- **LABOUR MARKET DEVELOPMENTS WILL LARGELY DETERMINE TO WHAT EXTENT THE STRONG INCREASE IN DEMOGRAPHIC DEPENDENCY RATIOS WILL TRANSLATE INTO AN INCREASE IN ECONOMIC DEPENDENCY RATIOS**

## **CONCLUSIONS (II)**

- **AN INTEGRATED STRATEGY OF EMPLOYMENT POLICY AND PENSION POLICY IS ESSENTIAL TO COPE WITH DEMOGRAPHIC CHANGE**
  
- **RAISING EMPLOYMENT LEVELS PRIMARILY REQUIRES**
  - **EDUCATION / TRAINING**
  - **RECONCILIATION OF EMPLOYMENT AND FAMILY LIFE**
  - **HEALTH PROTECTION / GOOD WORKING CONDITIONS**
  - **(RE)INTEGRATION OF UNEMPLOYED IN EMPLOYMENT**
  - **ADEQUATE JOBS FOR PEOPLE WITH REDUCED WORKING CAPACITY**
  - **ADEQUATE JOBS FOR ELDER MEN AND WOMEN**
  - **REDUCING THE GAP BETWEEN EFFECTIVE AND LEGAL RETIREMENT AGE**

# CONCLUSIONS (III)

- **RAISING EMPLOYMENT LEVELS IN ALL AGE GROUPS, WITH QUALITY-JOBS, WOULD HELP**
  - **TO CONSIDERABLY REDUCE THE FUTURE INCREASE IN ECONOMIC DEPENDENCY RATIOS**
  - **TO ALLEVIATE THE FINANCIAL BURDEN OF AGEING**
  - **TO ACHIEVE THE MAIN PENSION POLICY OBJECTIVES (SUSTAINABILITY/ADEQUACY)**
  - **TO SOLVE KEY PROBLEMS OF OUR SOCIETIES (SOCIAL EXCLUSION, PROBLEMS TO COMBINE EMPLOYMENT AND FAMILY LIFE, ETC.)**

## **CONCLUSIONS (IV)**

**“ ... RAISING EMPLOYMENT LEVELS ... IS ARGUABLY  
THE MOST EFFECTIVE STRATEGY WITH WHICH  
COUNTRIES CAN PREPARE FOR POPULATION AGEING”**

**(EU-Commission, Demography Report 2008)**