29 NOVEMBRO | CENTRO CULTURAL DE BELÉM

















### PLAN OF THE TALK

- 1. BASICS PAY-AS-YOU-GO AND FULLY FUNDED SYSTEMS
- 2. SHOCK 

  DEMOGRAPHY
- 3. MEASURING PUBLIC FINANCIAL SUSTAINABILITY 

  GENERATIONAL ACCOUNTING
- 4. INTERGENERATIONAL FAIRNESS HOW TO DEFINE IT?





### PAY-AS-YOU-GO SYSTEM

- SYSTEM RUN BY THE STATE
- AGGREGATE LEVEL: PENSIONS ARE PAID OUT OF CURRENT CONTRIBUTIONS
- INDIVIDUAL LEVEL: A WORKER PAYS CONTRIBUTIONS NOW AND LEGISLATION GIVES HIM A CLAIM TO A PENSION IN THE FUTURE THE LEGISLATION IS FAIRLY PRECISE BUT SUBJECT TO CHANGES
- REDISTRIBUTION ACROSS GENERATIONS IS COMMON





#### **FULLY FUNDED SYSTEM**

- SYSTEMS RUN BY THE STATE OR PRIVATE SECTOR
- PENSIONS ARE BASED ON SAVINGS
- AGGREGATE AND INDIVIDUAL LEVELS: A WORKER CONTRIBUTIONS ARE INVESTED IN ASSETS THE RETURN OF WHICH WILL PAY THE PENSION
- CONTRIBUTIONS CAN BE ADJUSTED TO MATCH LIABILITIES OR LIABILITIES CAN BE DEFINED BY AVAILABLE FUNDS
- LESS PRONE TO REDISTRIBUTIONS ACROSS GENERATIONS





#### TRANSITION FROM PAYG TO FF

		Generation			
Period	А	В	С	D	
1	€1	-€1			
2		€1	-€1		
3			€1	-€1	
4				€1	

SOURCE: ORSZAG 1999 P.9

#### **TABLE EXPLANATION**

EACH GENERATION PAYS 1 WHEN WORKING AND RECEIVES 1 IN PENSION (PAYG)

#### REMARK

GENERATION A HAS A NET TRANSFER FROM GENERATION B, AN EXAMPLE OF INTERGENERATIONAL REDISTRIBUTION

#### **EXERCISE - TRANSITION FROM PAYG TO FF IN PERIOD 2**

#### 1. FINANCED BY PUBLIC DEBT

ASSUME GENERATION B PENSION IS FINANCED BY DEBT AND C SAVES 1 AND THE REAL RETURN IS 10%. HIS PENSION WILL BE 1.1 MINUS THE SERVICING COST OF THE DEBT RAISED TO FINANCE B PENSION

#### 2. FINANCED BY TAXATION

ASSUME GENERATION B PENSION IS FINANCED BY TAXATION AND T IS THE PART OF TAX INCREASE THAT DECREASES SAVINGS BY C WHO SAVES NOW 1-T. HIS PENSION WILL BE 1.1\*(1-T)

BOTH ALTERNATIVES CAN IMPLY INTERGÉNERATIONAL REDISTRIBUTION





### PAYG OR FF? - DEMOGRAPHY CONSTRAINT IS BINDING

IS ONE SYSTEM SUPERIOR TO THE OTHER? NOT EASY ANSWER

- TRANSITION COSTS
- DIFFERENCES IN RISK ON RETURNS
- ADMINISTRATIVE COSTS

HOWEVER THE ACTUAL PENSION SYSTEM IS INCONSISTENT WITH THE ONGOING DEMOGRAPHIC CHANGE (OLD

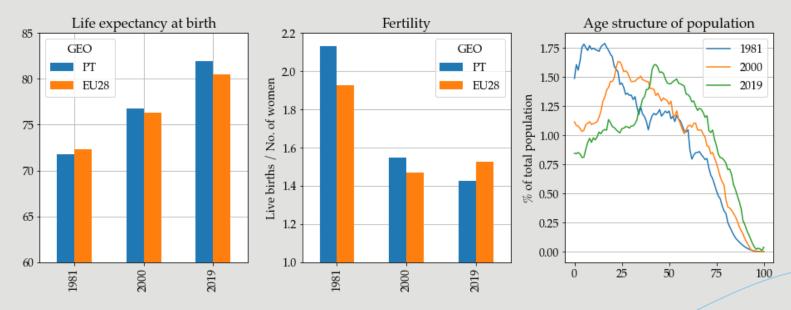
**OBSERVATION)** 







#### **DEMOGRAPHY TRENDS**

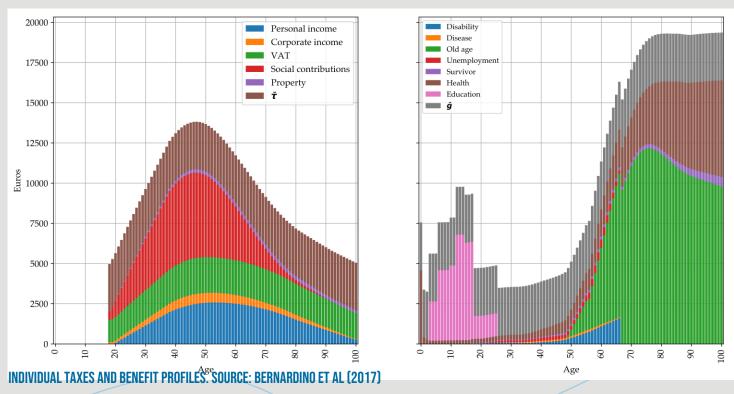


INCREASING LIFE EXPECTANCY (GOOD NEWS) AND DECLINING FERTILITY (NOT AS GOOD) IMPLY THAT THE AGE STRUCTURE WILL NOT BE COMPATIBLE WITH OUR CURRENT PENSION SYSTEM DEMOGRAPHIC PROJECTIONS ARE IMPLYING AN EVEN LARGER INCOMPATIBILITY THAN CURRENT NUMBERS





### SUSTAINABILITY USING GENERATIONAL ACCOUNTING

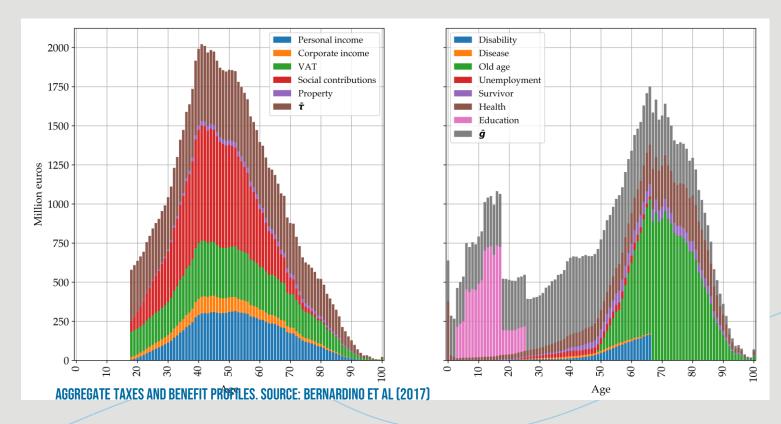








### GENERATIONAL ACCOUNTING





AGGREGATE TAX AND BENEFITS AGE PROFILE SUM INDIVIDUALS PROFILES USING POPULATION DATA TODAY POPULATION AGE STRUCTURE BALANCES TAXES AND BENEFITS



### GENERATIONAL ACCOUNTING LESSONS

- CURRENT POSITIVE PRIMARY SURPLUS RELIES ON THE PRESENT DEMOGRAPHIC STRUCTURE OF THE POPULATION
- ALL ELSE EQUAL, PROJECTED DEMOGRAPHIC TRENDS WILL BRING A NEGATIVE PERMANENT DEFICIT
- WITHOUT CHANGES ON THE TAX-BENEFIT AGE PROFILES, TO MAKE THE IBC HOLD: PERMANENT TAX INCREASE OF 18.6% (NEW ESTIMATE WITH IMPROVEMENT IN EDUCATION)
- MIGRATION DECREASES THE PROJECTED IMBALANCES, BY INCREASING THE YOUNG POPULATION THAT CONTRIBUTES
- MIGRATION IS NOT ENOUGH TO ELIMINATE THE GAP, NOT EVEN WITH EXTREME MIGRATION INCREASES, NOR
  OPTIMISTIC SCENARIOS ON MIGRANTS' FERTILITY



### INTERGENERATIONAL FAIRNESS

- FULL THEORY OF INTERGENERATIONAL JUSTICE IS COMPLEX, DEPENDS ON THE UNDERLYING CONCEPTUAL FRAMEWORK AND REQUIRES A MULTIDISCIPLINARY APPROACH
  - FOR EXAMPLE RAWLS VERSUS UTILITARIAN
  - FOR EXAMPLE LEGAL AND PHILOSOPHICAL ISSUES
- HERE SIMPLE APPROACH BASED ON PUBLIC SPENDING AND TAXES BETWEEN COHORTS
- POPULATION AGING MAKES SOBER AND INFORMED ANALYSIS OF THE INTERGENERATIONAL JUSTICE OF PUBLIC POLICIES BOTH URGENT AND TIMELY





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