Macroeconomics II

Lecture 14

Social structures and the Welfare State

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Functional income distribution

The Welfare State

Social security systems

Readings:

Louçã e Mortágua (2021), Manual de Economia Política, ch. 8

Functional vs personal income distribution

GDP: value of the output of an economy in a year

(<u>economic value</u> created = <u>income</u> generated)

income

income generated by whom? (production factors)

income due to whom? (owners of the production factors) / **property rights**

income redistributed to whom? (economic and social rights) / **redistribution**

functional income distribution (between social classes)

primary distribution of income to holders of production factors (Labor and Capital)

personal income distribution (between households/individuals)

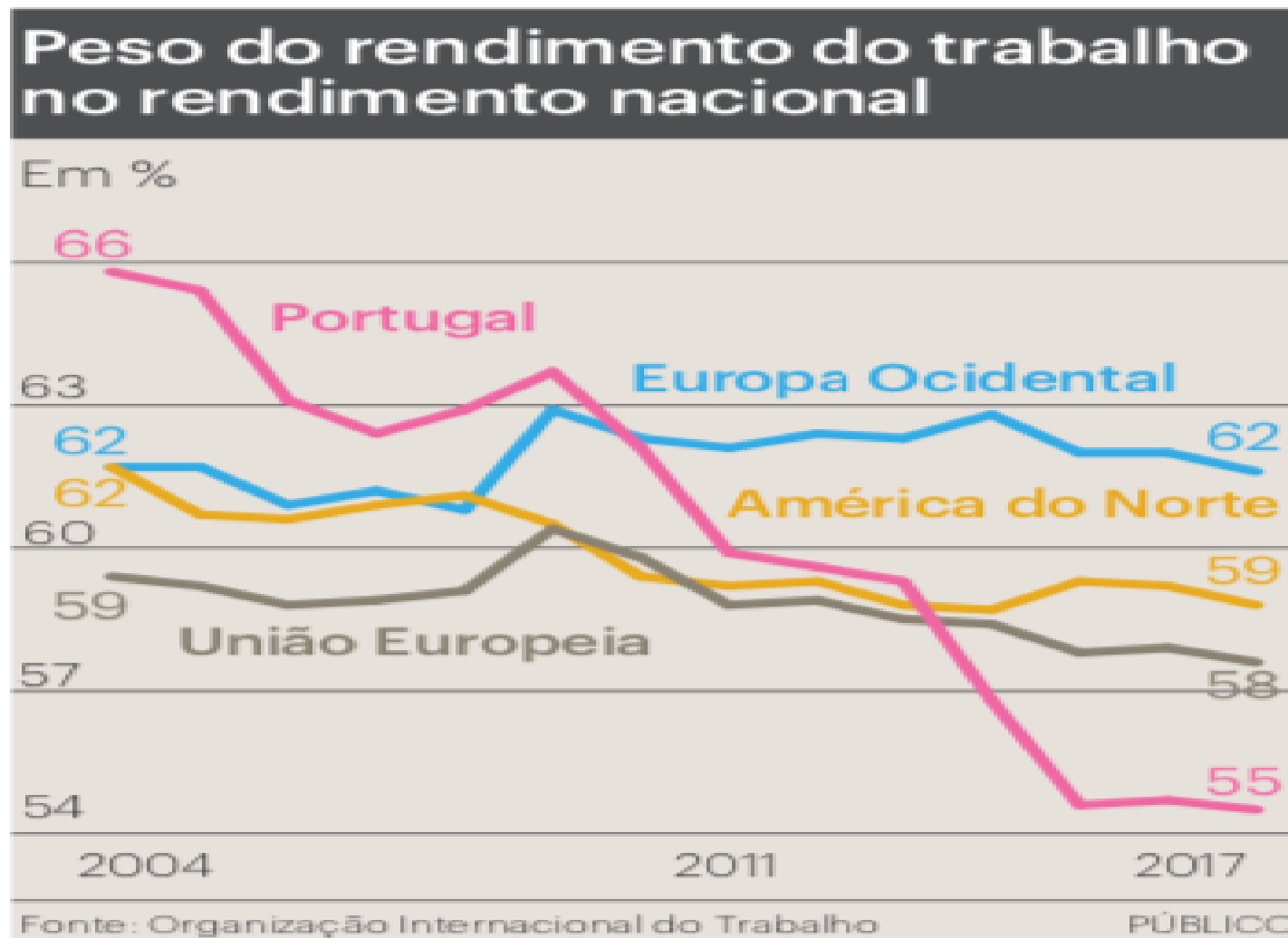distribution of income to holders of production factors

+ redistribution of income (taxes, transfers) / Welfare State

= distribution of **disposable** income among individuals/households
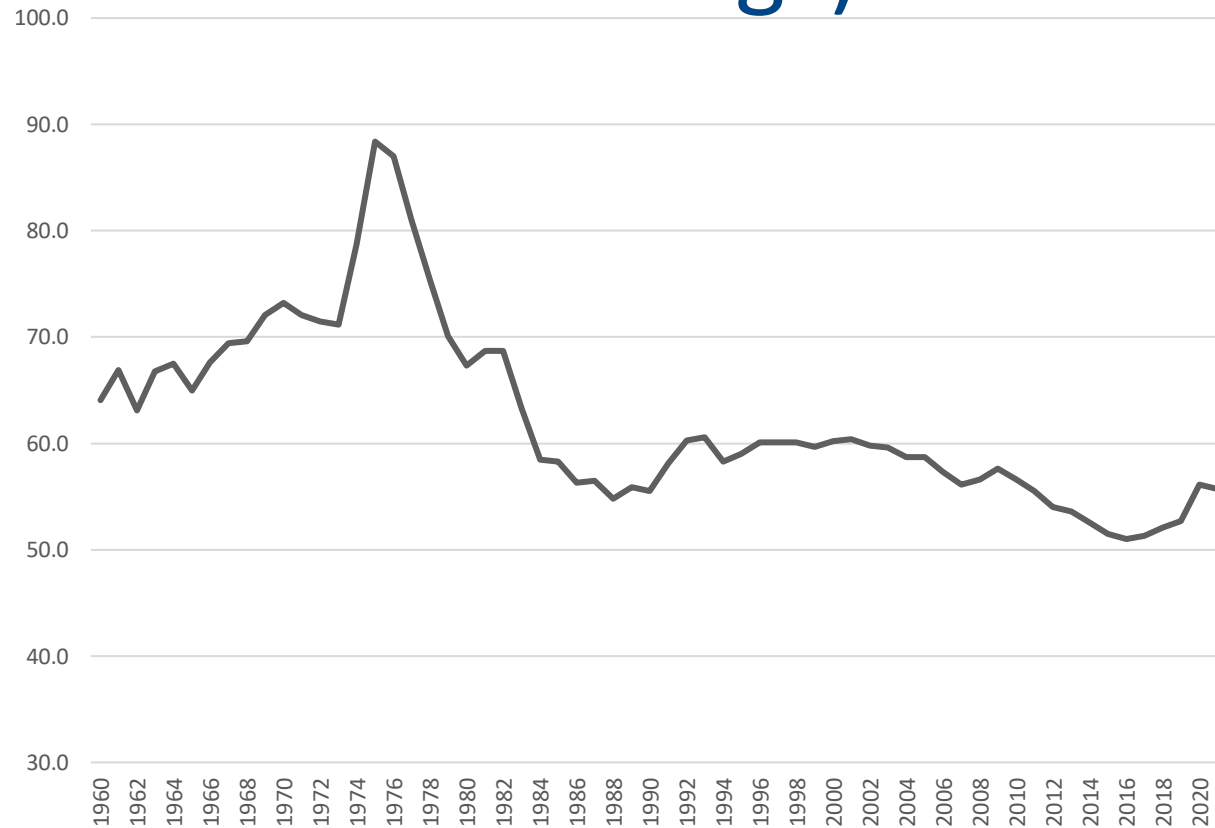
Income distribution in Portugal

Comparison Portugal-other European countries, wage share at factor costs

Peso do rendimento do trabalho no rendimento nacional

Em %

Portugal

Europa Ocidental

América do Norte

União Europeia

66
63
62
62
60
59
59
57
58
62
59
55
54

2004   2011   2017

Fonte: Organização Internacional do Trabalho   PÚBLICO

Portugal, adjusted wage share at market prices (different indicators can lead to slightly different findings)

Adjusted wage share (% of GDP at market prices), Portugal, 1960-2020. Source: AMECO

Is the functional income distribution constant? If not, what causes it to change?

functional income distribution is a crucial concept of income distribution, which relates economic output and growth to the production factors which account for it.

Given that all income (at factor costs) is either labour income (wages) or capital income (profits, rents or interest), we can express total income as the sum of total labour income (which os the average wage times the employed population) plus total capital income (which is the average return on capital times the capital stock):

$Y = w.L + i.K$

If we assume a neoclassical Cobb-Douglas production function, $Y = K^\alpha L^{1-\alpha}$, and assuming that the price of the production factor = marginal productivity of that factor, we get:

$\alpha = (i.K)/Y$ $\qquad\qquad 1-\alpha = (w.L)/Y$

What drives the changes in the functional income distribution?
(that is, the share of wages in GDP?)

share of wages: $S_w = (w.L)/Y$ where w is nominal average wage; and w.L (=W) total wages paid

$= w.L/Y_c.P$ (Y_c, GDP constant prices; P, price index)

$= (w/P)/(Y_c/L)$ (w/P, real average wage; Y_c/L, labour productivity)

$= w^r/y$ (w, real wage/labour productivity, at a constant price)

$$r(S_w) = r(W^r) - r(y)$$

The share of wages is <u>constant</u> during a certain period if and only if the average growth rate of the **real wage** is <u>**equal**</u> to the average growth rate of **labour productivity;**

if the average growth rate of real wage is <u>**larger**</u> (*less*) than the growth rate of labour productivity, the share of wages in GDP <u>**increases**</u> (*reduces*);

The *Welfare State* and economic growth

*"A concept of government in which the state or a well-established network of social institutions plays a key role in the p**rotection and promotion of the economic and social well-being of citizens**. It is based on the principles of **equality of opportunity, equitable distribution of wealth, and public responsibility for those unable to avail themselves of the minimal provisions for a good life***. The general term may cover a variety of forms of economic and social organization."* (Encyclopedia Britannica)

The *Welfare State* is a social construction that assures **social citizenship rights** and constitutes a **space for bargaining and negotiation** of different (and divergent) interests as well as the potential for conflict among them, **within a framework of plural political representation** of such distinctive interests.

The *Welfare State* and economic growth – some key questions

What are the **economic effects** of the *Welfare State*? What are its effects on economic growth? Is it a constraint to economic growth? Is it a facilitating factor?

Is the *Welfare State* **economically sustainable**? Due to the redistributive mechanisms that supports its functioning (namely, intergenerational transfers), do demographic trends compromisse its sustainability? What is **the impact of economic growth** on its sustainability?

The origins of the Welfare State

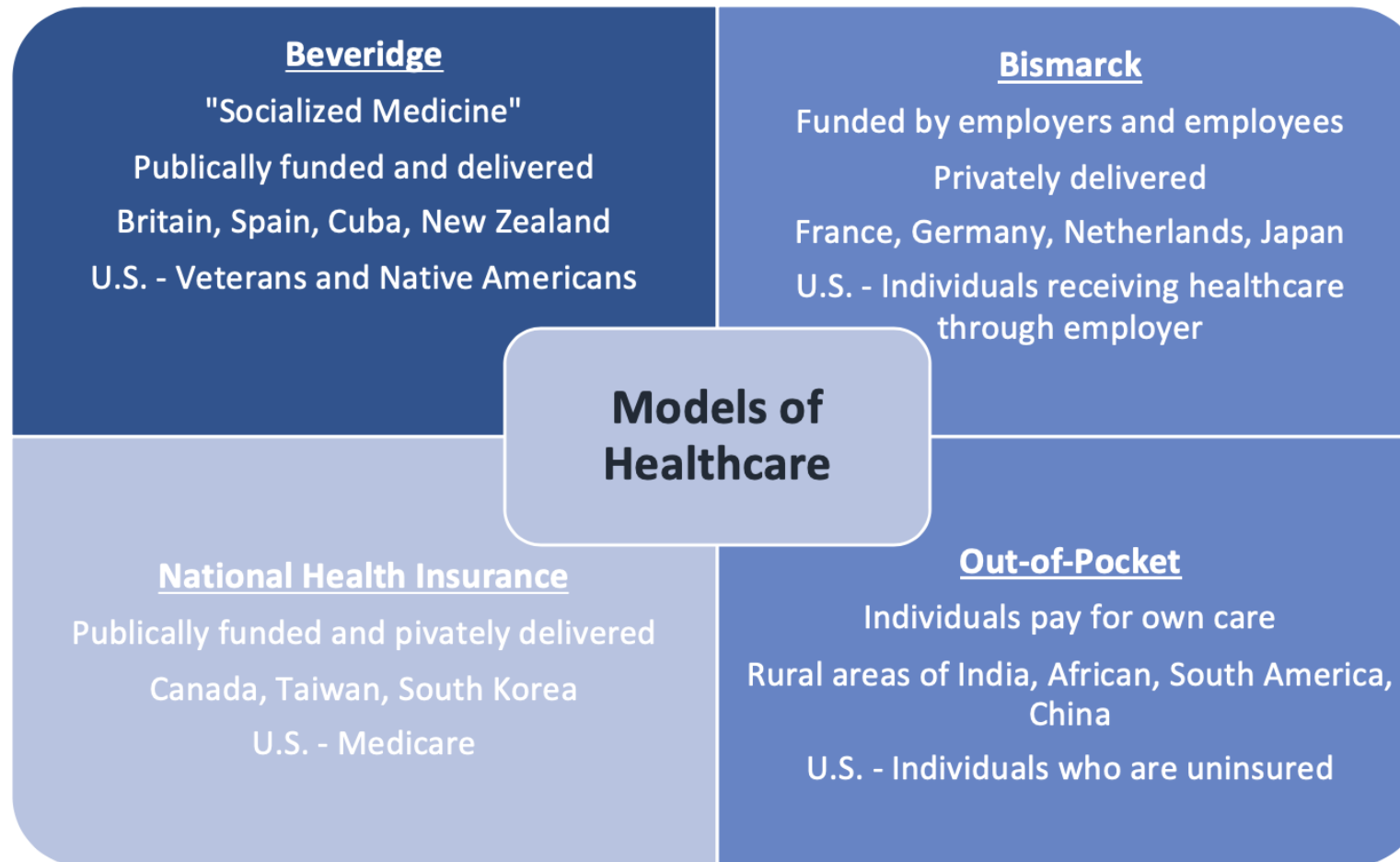## Dates of creation of various national social programs

Country	Employment insurance	Sickness benefit	Old age pensions	Unemployment insurance	Family support	Healthcare / insurance
Germany	1884	1883	1889	1927	1954	1880
United Kingdom	1887 (1) 1906 (2)	1911	1908	1911	1945	1948
Sweden	1901	1910	1913	1934	1947	1962
Canada	1930	1971	1927	1940	1944	1972
US	1930	-----	1935	1935	-----	-----
France	1898 1946 (**)	1930	1905 (1) 1910 (2)	1905 (1)	1932	1945
Italy	1898	1928 (1) 1943 (2)	1919	1919	1936	1945

Fonte: KUDRLE & MARMOR (1984:83)
(1) Following Hugh Heclo; (2) following Peter Flora
(**) Required as forceful

Social protection: the case of healthcare

Beveridge

"Socialized Medicine"

Publically funded and delivered

Britain, Spain, Cuba, New Zealand

U.S. - Veterans and Native Americans

Bismarck

Funded by employers and employees

Privately delivered

France, Germany, Netherlands, Japan

U.S. - Individuals receiving healthcare through employer

Models of Healthcare

National Health Insurance

Publically funded and pivately delivered

Canada, Taiwan, South Korea

U.S. - Medicare

Out-of-Pocket

Individuals pay for own care

Rural areas of India, African, South America, China

U.S. - Individuals who are uninsured

Social protection: the case of old age pensions

Aim: ensuring a regular flow of income during the lifecycle;

Social security protects this regular flow against the risk of unanticipated events which may cause breaks in this regular flow throughout life (unemployment, sickness, old age, etc);

large share in total social public expenditures;

old age pensions are ruled by quite diverse principles in the EU, but all have the same objective: to transfer resources from an early stage in life (when income is earned from economic activity) to a later stage of life (when there are no earnings from economic activity);

Different types of pension systems

Three main alternatives:

1. Public system

2. Private system

3. Public systems + private partnerships (including different combinations, such as the current Portuguese system or the Swedish model)

1. Public system

- Contributions are made to a single national public fund, managed by the State

- The fund is responsible for the payment of pensions

- It may use its reserves to buy public debt bonds (national or of other countries) or other assets (property, stock, bonds)

- Usually a pay-as-you-go system ("repartição"): current workers pay for current pensioners
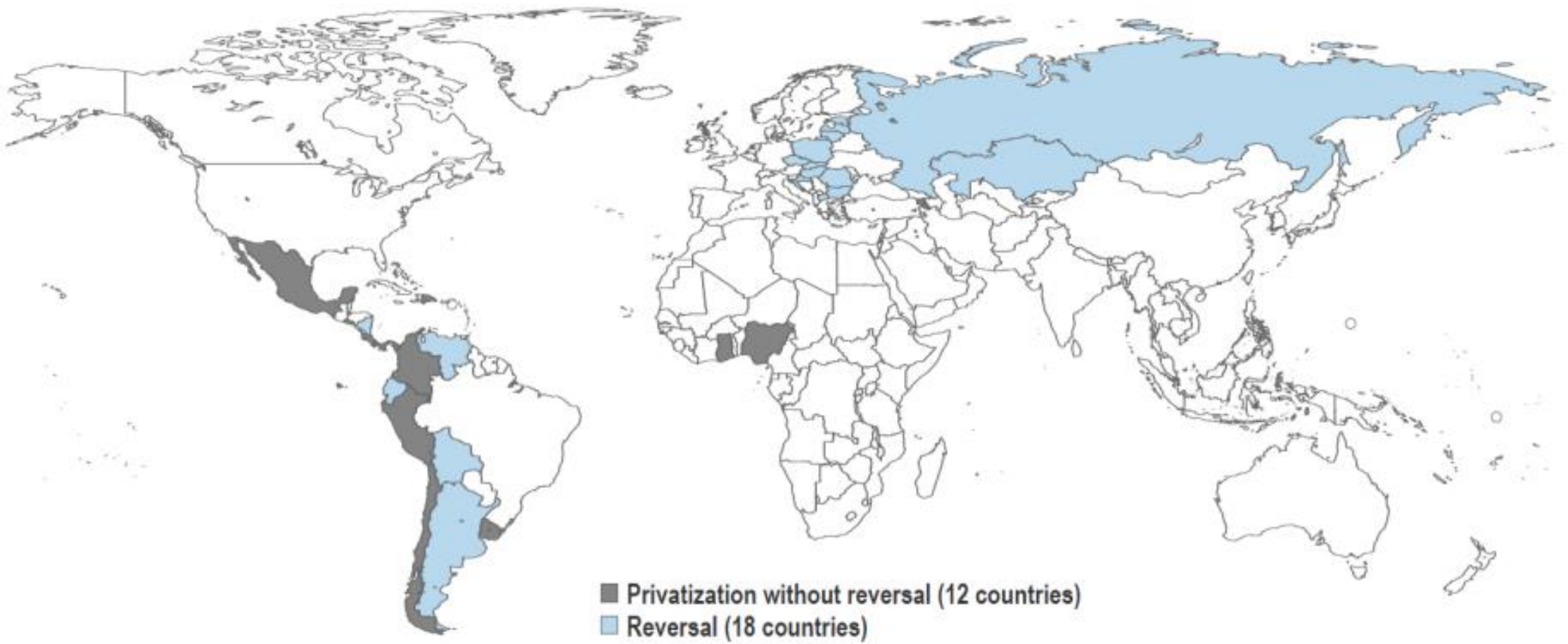
2. Private system

- Contributions are made to individual accounts in a variety of pension funds
- Funds managed by private firms and invested in financial markets
- No or little solidarity/redistribution
- Usually a fully-funded system ("capitalização"): no direct transfer from current workers to current pensioners

Main problems of private fully-funded systems:

- greater inequality

- greater financial market risk

- lower coverage rates

- higher administrative costs/commissions

- risk of requiring public bailouts

Figure 1. Countries that privatized social security mandatory pensions and that reversed privatization, 1981–2018

Privatization without reversal (12 countries)
Reversal (18 countries)

3. Mixed (public plus private) systems (1+2)

e.g., Portugal

Two main public funds: the general social security system + the civil servants' system (now closed)

Financed by workers (11% of the wage) and firms (23,75% of paid wages) plus the budget through a share of VAT, corporate tax and other taxes ("Adicional ao IMI").

The amount of the old-age pension depends on age at retirement, contributions during active life, etc, following a standard rule

Plus some other important private funds (e.g. banking employees)

Plus private funds from insurers and financial firms

Two kinds of pension systems in terms of intergenerational transfers

PAYG: (*pay as you go*) social security system ("*repartição*" in Portuguese)

the workers pay a part of their wages to the SS system; the SS system transfers <u>all this amount</u> to the old people (retired), according to specific rules, <u>not necessarily related</u> to the amount the retired have previously paid during working life (there are "social pensions");

that is: a part of current workers' income is transferred directly to the retired: intergenerational transfers.

Fully Funded social security system ("*capitalização*" in Portuguese)
·workers pay a part of their wages to the SS system, which accumulates financial funds, which are capitalized in financial markets;
·The SS system pays old-age pension to the retired population <u>according</u> to the amount that they previously contributed to the system, as subsequently capitalised; no intergenerational transfers.

Impact of <u>productivity</u> and <u>ageing</u> on pension systems

Let us start by decomposing GDP per capita:

$Y/N = Y/L \cdot L/N$ where N is total population, L is working population

If P* is the working-age population (say, 15 to 66 years), then

$$Y/N = Y/L \cdot L/P^* \cdot P^*/N$$

or GDP per capita equals the **average labour productivity** times the **employment rate** times the **share of the working-age population.**

Thus,

$$r(Y/N) = r(Y/L) + r(L/P*) + r(P*/N)$$

Therefore, if the employment rate is **constant** (for simplicity, though not always true), then the **growth of GDPpc** is the **sum** of the **growth of labour productivity** and **the growth of the weight of the working age population in the total population.**

... meaning that if there is **ageing** by x% (i.e. a reduction in the weight of working age population in total population), then **labour productivity should grow more than x% to get positive GDP per capita growth.**

Equilibrium in PAYG systems

revenue of the SS system in year t

Revenue = $w_t \cdot L_t \cdot b_t$ (contributions paid by the workers and firms to the SS system)

expenditure of the SS system in year t

Expenditure = $P_t \cdot Nr_t$ (pensions paid by the SS system to the retired)

A balanced Social Security account in year t requires the following equality (revenue = expenditure):

$$w_t \cdot L_t \cdot b_t \ = P_t \cdot Nr_t$$

In which:

w_t   average wage in year t

L_t   number of workers in year t

b_t   workers´ and firms' total rate of contribution to Social Security

P_t   average old-age pension in year t

Nr_t   number of pensioners in year t

In a balanced PAYG system, the equilibrium condition is:

$$w_t . L_t . b_t = P_t . Nr_t$$

Solving for Pt and rearranging, we get: $P_t = w_t.(L_t/Nr_t).b_t$ (i.e., the financially sustainable pensions level depends on the age structure, employment, productivity, income distribution and contributions rate).

The *dynamic* equilibrium condition is:

$$r(w_t) + r(L_t) + r(b_t) = r(P_t) + r(Nr_t)$$

<u>In an ageing scenario</u>, in which Lt decreases and Nrt increases, <u>the key condition</u> for the system to remain sustainable without the need for adjustments in the level of pensions or the rate of contribution is for <u>the average wage to increase sufficiently</u>. Assuming a constant functional income distribution [recall: in which r(w)=r(Y/L)] , this requires <u>sustained increases in labour productivity</u>.

Variant: If the pensions system is additionally financed by the Public Budget through taxes

Finally, we can have an extended model:

$(w_t.L_t.b_t).(1+PB_t) = P_t.Nr_t$, PB_t being the rate of increase of the income of the pension system as provided by the Budget through taxes (e.g. VAT, or IVA in Portugal), or budgetary contributions defined by law, in year t. In that case,

$P_t = w_t.(L_t/Nr_t).b_t.(1+PB_t)$

i.e. the value of the pension additionally depends on the budgetary contribution, and the dynamic equilibrium condition becomes

$$r(w_t) + r(L_t) + r(b_t) + r(1+PB_t) = r(P_t) + r(Nr_t)$$

Meaning that the **growth of wages and/or public financing** are required to **compensate for the growth in pensions as well as for demographic ageing.**