

PAYGO vs Funded pensions : What's new?

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Structure of this presentation

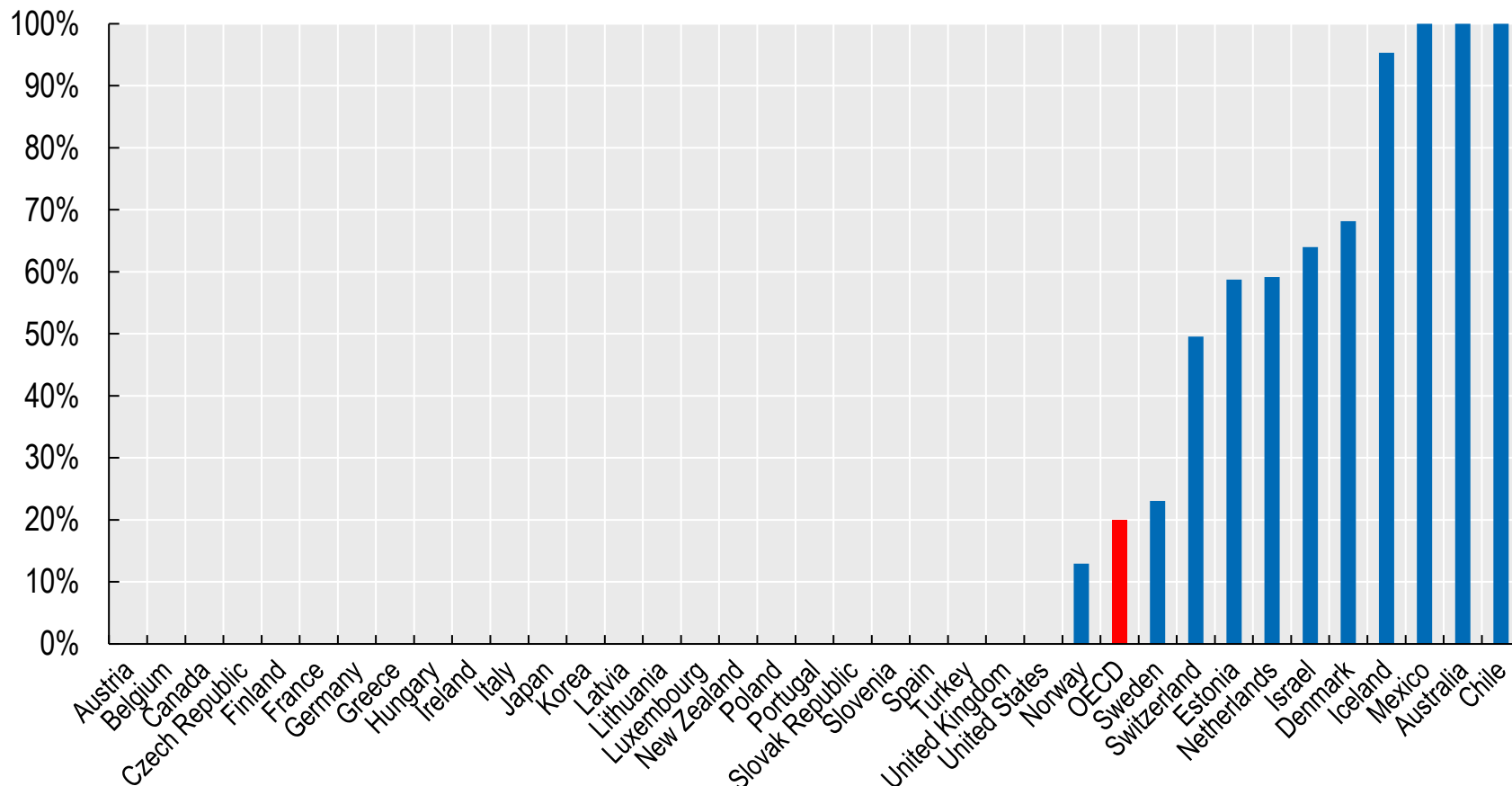
PAYGO vs Funded: What's new?

- Role of funded schemes in financing pensions today
- Traditional trade-offs between PAYGO and funded schemes
- History and transition costs. Several countries recently faced the big challenges triggered by shifting from PAYGO to funded pensions
- Importance of “dynamic efficiency” condition to generate these trade-offs
- Context of persistently low interest rates exacerbated by the Covid crisis puts into question whether dynamic efficiency still holds
- Large uncertainty limits the ability to draw drastic conclusions
- The remaining case for diversification



Share of funded schemes in future theoretical pension entitlements

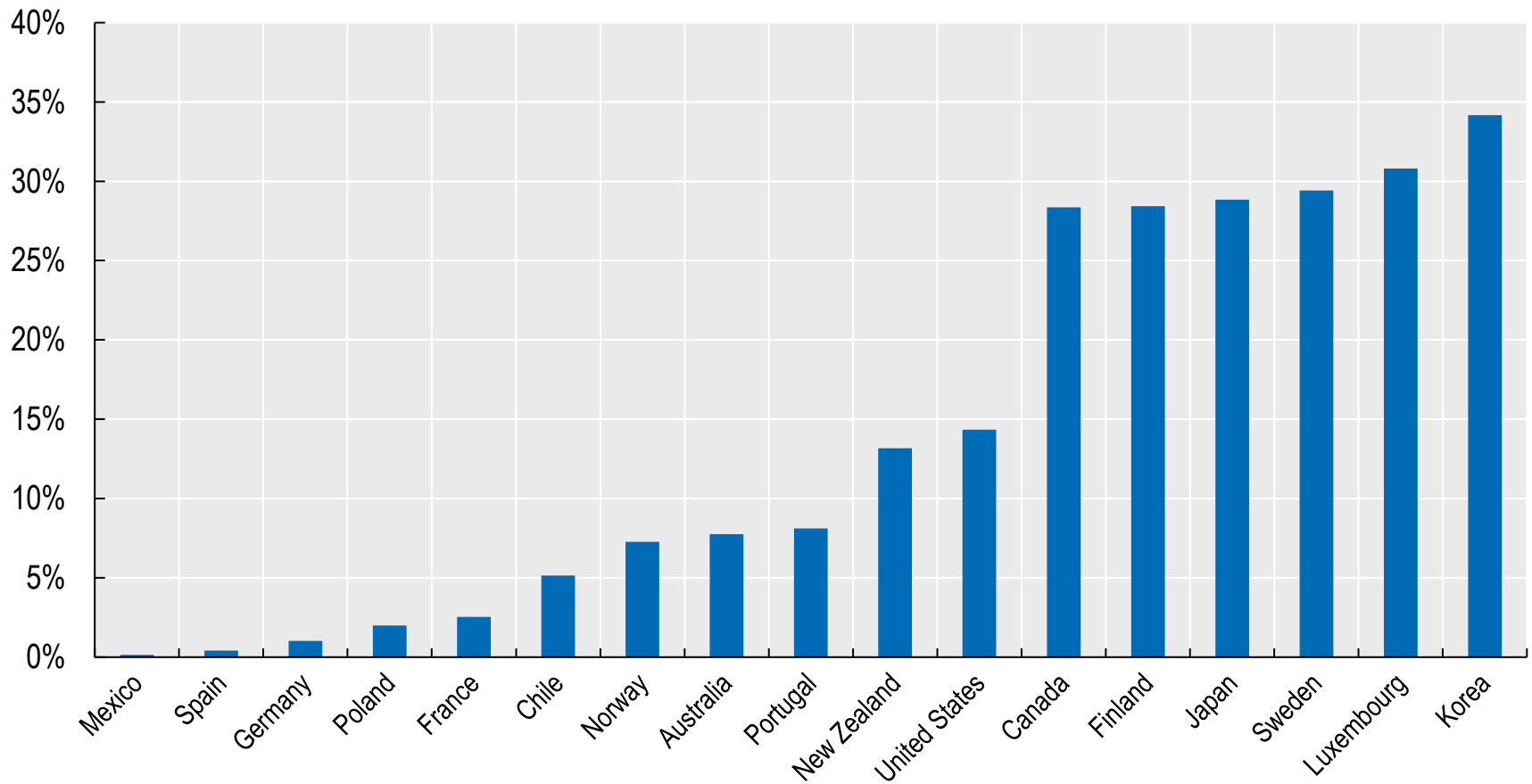
Mandatory schemes, average-wage full-career workers



Source: OECD Pension Model and Country profiles in Pensions at a Glance (2019). Some countries including Canada, Finland and Japan partially fund their mandatory DB pensions (see next slides). For example, related pension assets roughly account for 20% of liabilities in Canada and Finland. Public funds are also significant in Korea and the United States, but based on current legislation they are projected to be depleted in the forthcoming decades.

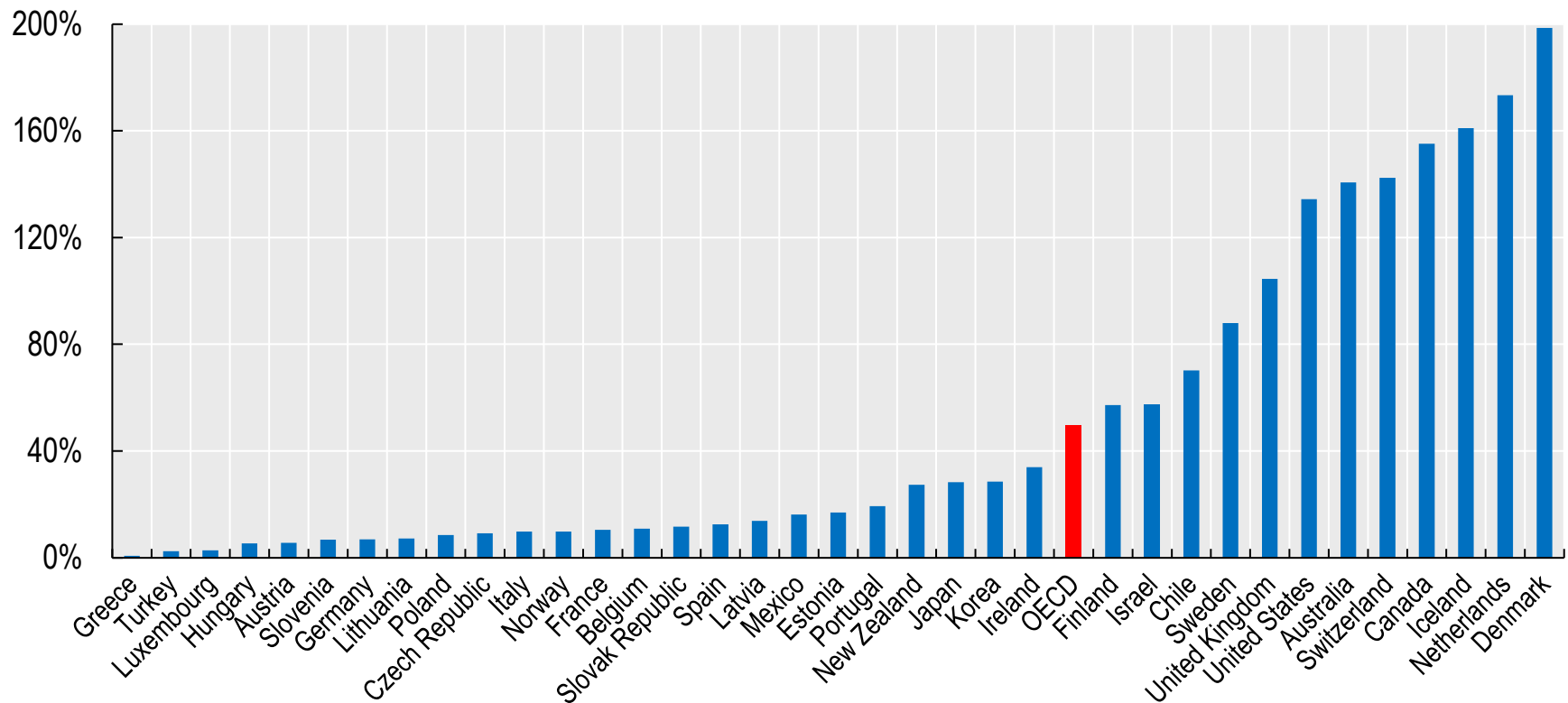


Public pension reserve funds as % of GDP



Size of accumulated assets in pension funds versus implicit PAYGO liabilities

- Assets in funded and private pension plans, % of GDP



Source: Chapter 9 in Pensions at a Glance (2019)

- Size of implicit liabilities: not uncommon to see estimates of around 200% of GDP



Pension financing: traditional trade-off between PAYGO and funded schemes

- Individuals who have contributed have tended to get higher pensions from funded schemes than under PAYGO – to be discussed in greater detail
- Individuals who have not contributed get nothing from funded schemes while, under PAYGO, revenues are available from the first contributors
- These revenues can be used in many different ways: financing public spending, lowering (counterfactually) taxes, paying a pension gift to people who have not contributed. In short, PAYGO generates winners initially
- Actuarial equivalence: generated revenues from the first generation(s) of PAYGO contributors is actuarially equivalent to the pension losses (with PAYGO relative to funded) of future retirees. There is no direct intrinsic value in choosing to invest contributions in financial markets
- In essence, a redistribution matter: with PAYGO, financial losses (implicit tax) for future pensioners and/or for funded pension providers finance the gift to the generation initially benefiting from PAYGO



Other arguments in favour of developing funded schemes

- #1: Funded pensions increase private savings
 - however, partial substitution effects at individual level while public savings might be negatively affected (related to transition costs discussed below) with ambiguous effects on total savings
 - even when assuming higher total savings, increased savings is welfare improving ... when there is undersaving (consistent with high enough interest rates or rates of return) - however, savings glut, secular stagnation, etc.
- #2: Development of financial markets: this argument applies better to countries with under-developed financial markets. Even in that case, optimising returns might imply investing mostly in international markets
- #3: Less political risks with funded schemes. However, pension reversals show that funded schemes might be subject to political risks as well
- #4: Returns are uncertain in both PAYGO and funded, and the nature of underlying risks differs widely. Diversification of pension assets, of financing sources and of types of risks is positive



History: PAYGO, demographic dividend, funded schemes as complement

- Historically, pensions have initially been organised as PAYGO
- Demographic dividend: fast population growth and high ratio of contributors-to-retirees
- A number of countries (including CAN, CHE, DNK, NLD, UK, USA), succeeded in developing funded occupational schemes in addition to PAYGO
- Building up funded schemes is easier when working-age to old-age population ratios are high: relatively low contribution rates are enough to finance a good level of PAYGO pensions
- On average in the OECD, population growth was:
 - 20% between 1950-1965, 7% between 2005-2020
 - is projected to equal 2% between 2020-2035



Moving from PAYGO to funded

- Numerous countries in LA and CEE moved away from PAYGO to funded pensions, entirely or partially
- Shifting part of contributions from PAYGO to funded pensions generates the traditional trade-off
- Possible gains by future pensioners are offset by losses suffered by those who must finance entitlements which accrued under PAYGO
- Financing accrued PAYGO entitlements and at the same time accumulating additional savings in pension funds generate so-called transition costs
- When contribution rates are high, when ageing is already advanced and public finance pressure is tight: this is more difficult



« Transition costs »

- Transition costs rise as implicit liabilities gradually become explicit
- Notion of transition costs might be misleading: neither small nor through a short period. The total size amounts to total implicit liabilities, to be financed over several decades (length of a career)
- Financial burden driven by these large “transition costs” can be difficult to accept politically
- This is sometimes seen as being limited to accounting issues magnified by ill-designed fiscal rules
- But implicit debt is not the same as explicit debt. Countries can live with large implicit debt if related to sustainable pension arrangements, while financing explicit debt through financial markets might generate exposure to large macroeconomic risks
- Many countries in Latin America and CEE reversed course
- Recent reform proposals in Chile and Estonia



PAYGO pensions

- Internal rate of return:
 - rate of return financing the highest pension promises in a financially sustainable way
 - equal to the growth rate of contribution base
 - i.e. equal to the growth rate of the wage bill (stable contribution rate)
 - well proxied by the growth rate of GDP, g
- Upon inception, first streams of contributions generate both extra revenues and implicit liabilities
 - they can finance pensions for the first generation(s) of retirees who have only partially contributed (“gift”)
 - they can be used to build up reserves, reduce debt, finance other spending, etc.



Dynamic efficiency

- Central issue to analyse economic growth as well as the welfare impact of public debt
- A relatively abstract concept ...
- Represented as $r > g$: financial market rates are greater than economy growth rate
- Economy is dynamically efficient:
 - stock of capital is below its optimal level given by the golden rule ($r = g$)
 - overall benefits driven by higher savings and investments: more investment leads to more output and more consumption over time
- Dynamic inefficiency: over-accumulation of capital, too much savings
- A relatively abstract concept ... that currently resonates: savings glut hypothesis, secular stagnation, depressed interest rates, etc.



Do funded pensions generate higher benefits?

- Rate of return: return on financial pension assets, net of various fees, r
- Financial returns in funded schemes exceed internal returns in PAYGO schemes if $r > g$, i.e. if there is dynamic efficiency
- In that case, funding finances higher *future* pensions than PAYGO (on average)
- $r - g$ is closely related to an implicit tax when contributing to PAYGO pensions
- Funding (at least FDC) generates no implicit liabilities, but no gift either
- Actuarial equivalence means that over time (i.e. discounted values of) implicit taxes amount to paying back the initial gift(s)
- No free lunch: there is no direct intrinsic value in choosing to invest contributions in financial markets



Unusual features of dynamic inefficiency

- Dynamic inefficiency (over-accumulation of capital) raises puzzles
- Current generations can consume excess capital without hurting future generations (Pareto improvement)
- With $r < g$, debt finances itself: issuing debt can lead to Pareto improvements
- No trade-off and introducing PAYGO pensions is Pareto superior: gift for the first generation while future retirees have higher pensions than under funded schemes
- Speculative bubbles might flourish



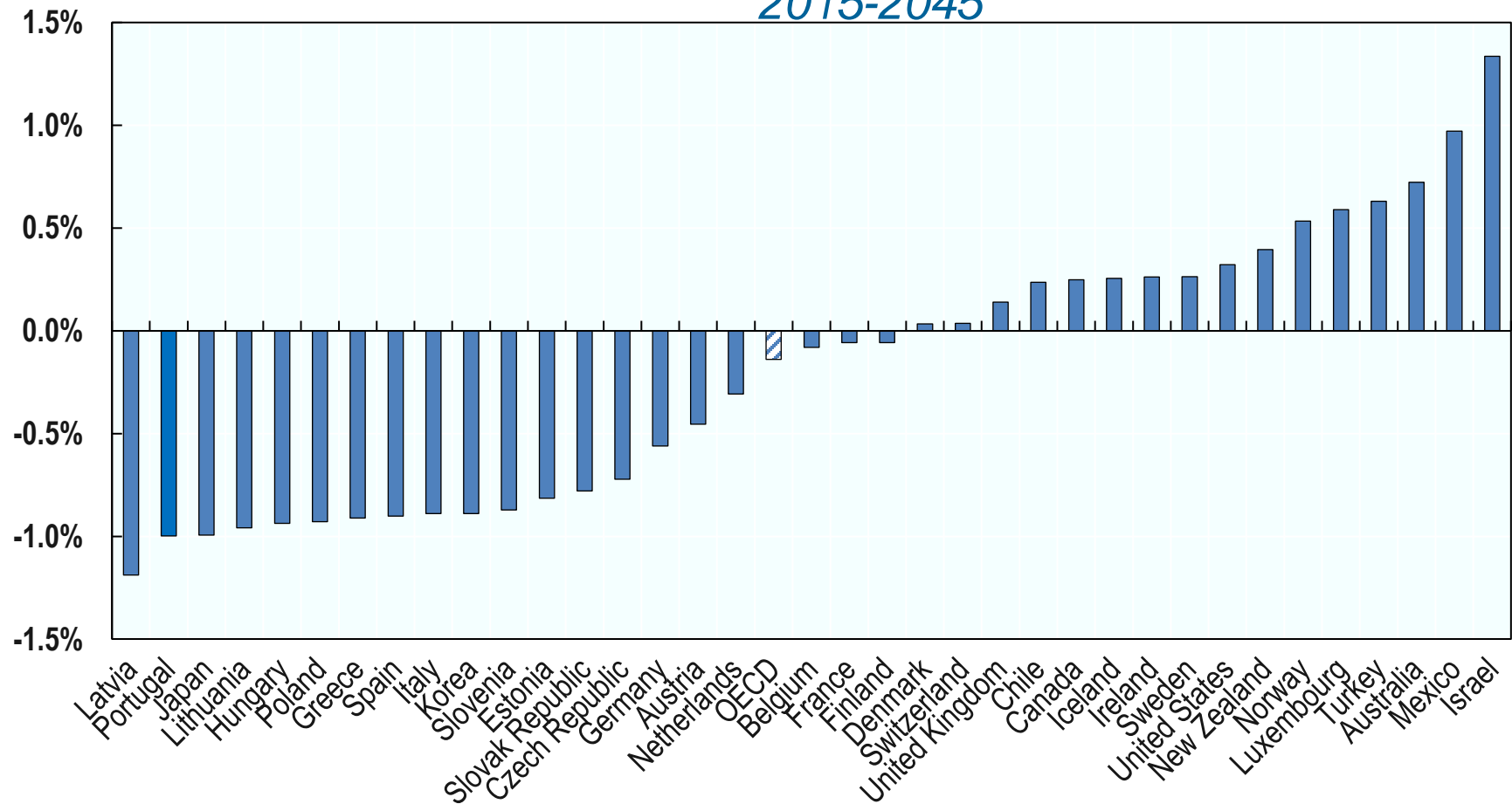
What is the impact of a low interest-rates environment ?

- Solvency issues of funded DB schemes appear as the NPV of future liabilities increases with discounting at low rates. Risks of low rates have typically not been hedged and the cost of carrying such risks has not been factored in by funded DB promises
- Lower pension benefits in funded DC schemes, but not necessarily lower replacement rates
- $(r - \text{wage growth})$ is crucial for replacement rates while g can be proxied by $(\text{wage growth} + \text{employment growth})$
- Key question relates to the determinants of financial rates as what matters for this presentation is $r - g$
- When e.g. focusing on impact of ageing on labour supply, then it is likely to affect both r and g



Sharp projected decline in the size of the working-age population in some countries

Average annual growth in the working-age population (20-64), 2015-2045





What is the impact of a low interest-rates environment ? (*continued*)

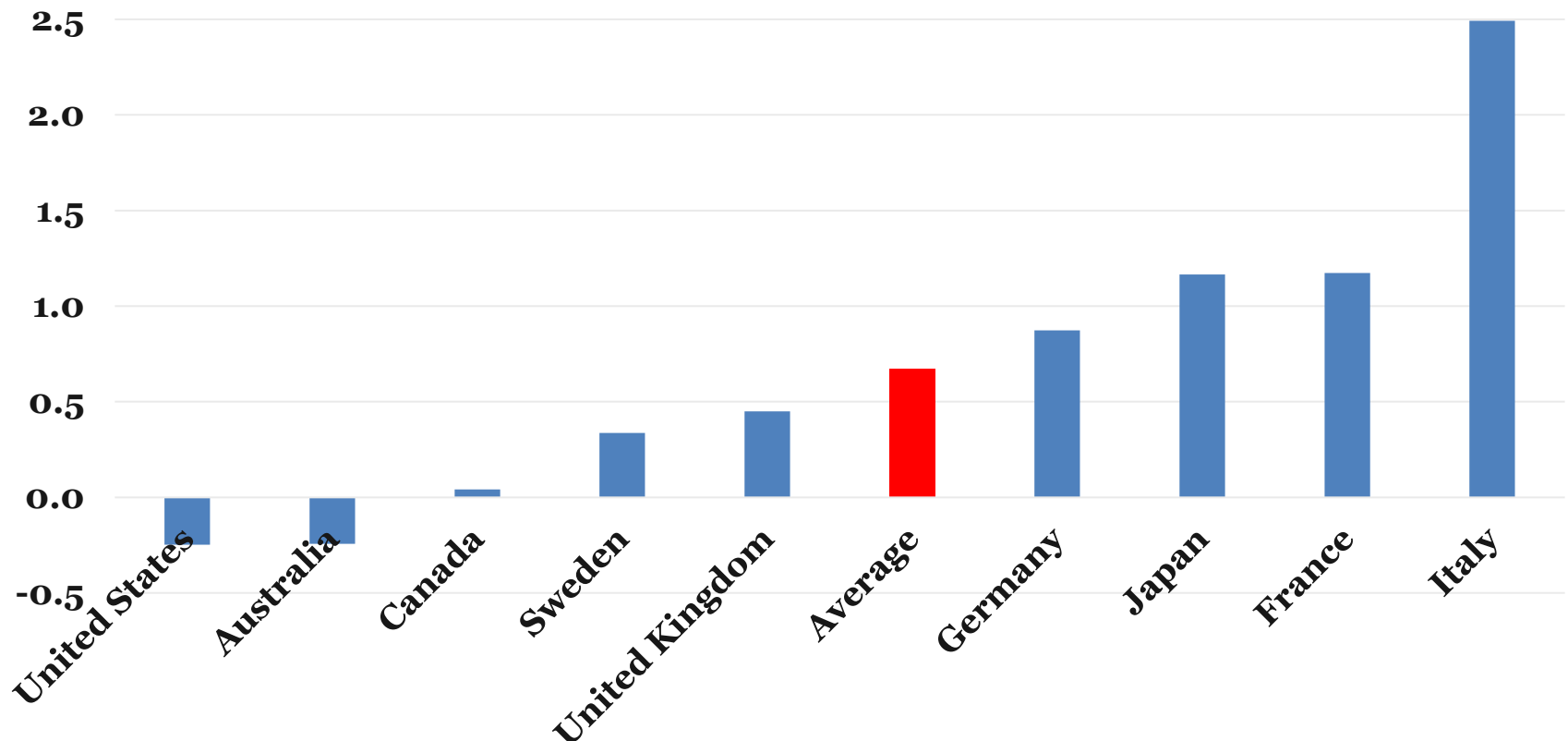
- [...]
- Key question relates to the determinants of financial rates as what matters for this presentation is $r - g$.
- When e.g. focusing on impact of ageing on labour supply, then it is likely to affect both r and g
- If resulting from a structural shift in financial market equilibrium, due to e.g. persistent changes in monetary policies or the impact of ageing on savings behaviours, then $r - g$ might (have) decline(d) in the medium turn or “permanently”



Dynamic efficiency?

long-term government bond rates as r

$r-g$, average over 1992-2018, %



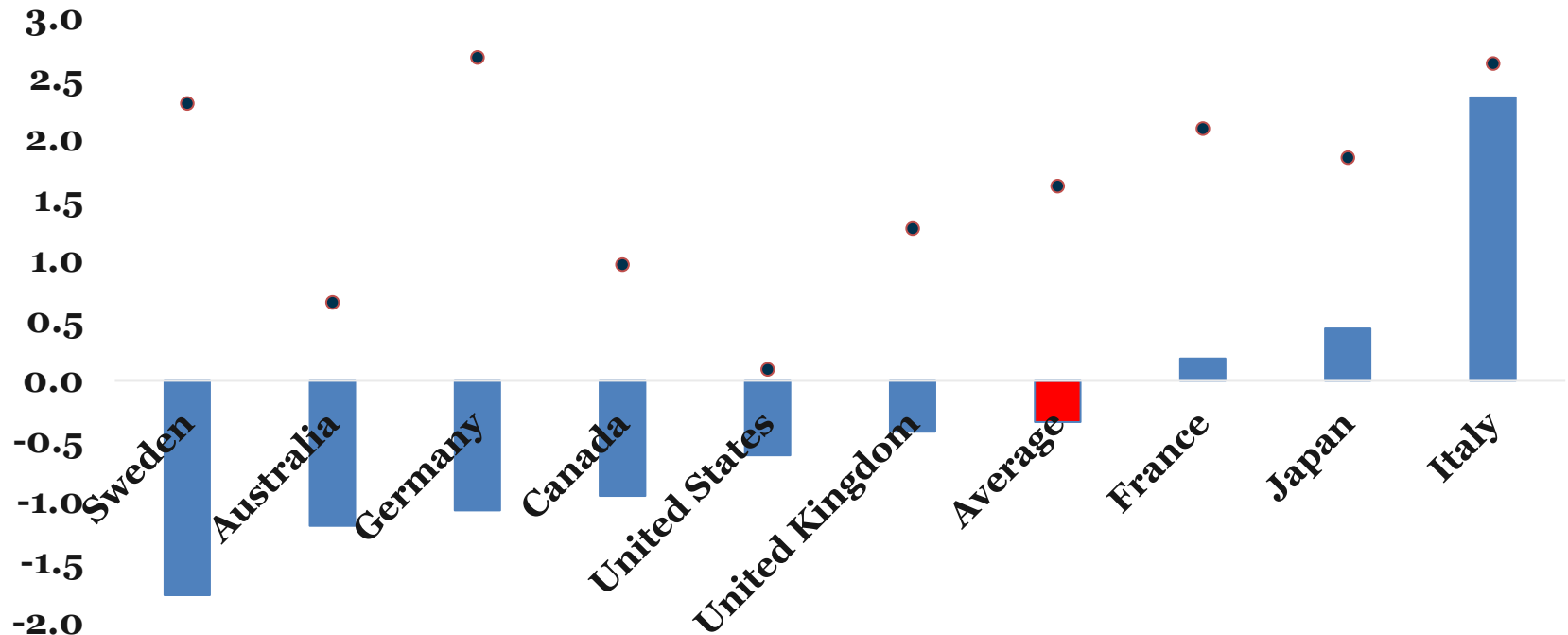


Dynamic efficiency?

long-term government bond rates as r

r has declined faster than g

■ $r-g$ 2006-2018 ● $r-g$ 1992-2005





Which r ?

- Risk-free rates, r^* ?
- Rates of return on risky assets $r^\#$: large range of assets?
Domestic vs international?
- Allocation of pension assets applies to various classes of risks
- Blanchard (2019) shows that both r^* and $r^\#$ matter
- If inefficiency ($r^* < r^\# < g$) then PAYGO is Pareto superior
- But developed economies have tended to move from dynamic efficiency ($g < r^* < r^\#$) to something more ambiguous ($r^* < g < r^\#$?) which introduces some elements of inefficiency but without totally clear outcomes



The case for diversification

- Allocation of pension assets applies to various classes of risks
- People are risk averse: both expected returns and volatility matter
- Even if there is dynamic efficiency (high returns), even if we abstract from the trade-off – i.e. even if we focus only on future retirees - there is a strong case for an optimal mix of PAYGO and funded
- This is because there is uncertainty and because future pensioners like all human beings are risk averse
- Diversification generates gains as underlying risks differ in nature
- In this situation, dynamic efficiency situation writes as $Er^{\#} > g$. Even in that case, where the trade-off is ignored, PAYGO should be included, with its share being all the bigger with:
 - small excess returns, $Er^{\#} - g$
 - large aversion to financial risk
 - high volatility in financial markets
 - low uncertainty about long-term growth g



Conclusion

- No free lunch: with dynamic efficiency, the choice between funded and PAYGO is essentially a distributional matter, generating winners and losers and raising equity issues across generations
- The most compelling reason to support a mixed system relates to the benefits generated by risk diversification
- Shifting from PAYGO to funded generates large, first-order transition costs that might be difficult to endorse politically depending on the wider economic context
- Persistently low interest rates have brought some elements of dynamic inefficiency, which limits the attractiveness of funded schemes
- However, uncertainty is large, and the situation can revert back to a more “normal” setting generating the usual trade-offs

Contact

Pensions at a Glance 2019
OECD et G20 Indicators

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