



Integrating qualitative scenarios with quantitative modeling: lessons learned from recent EC foresight projects

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Challenges

- Cultural background
- Mutual credibility and trust
- «Blabla» (qualitative) Vs mechanistic (models)
- Flexibility/creativity Vs rigidity
- Interfaces
- What comes first?





Three EU foresight projects

- [PASHMINA – Paradigm Shifts Modelling and Innovative Approaches](http://www.isis-it.com/pashmina/) - <http://www.isis-it.com/pashmina/>
- [FLAGSHIP – Forward Looking Analysis of Grand Societal Challenges and Innovative Policies](http://www.isinnova.org/portfolio-items/flagship/) - <http://www.isinnova.org/portfolio-items/flagship/>
- [FRESHER – Foresight and modelling for European health policy and regulation](https://www.foresight-fresher.eu/) - <https://www.foresight-fresher.eu/>

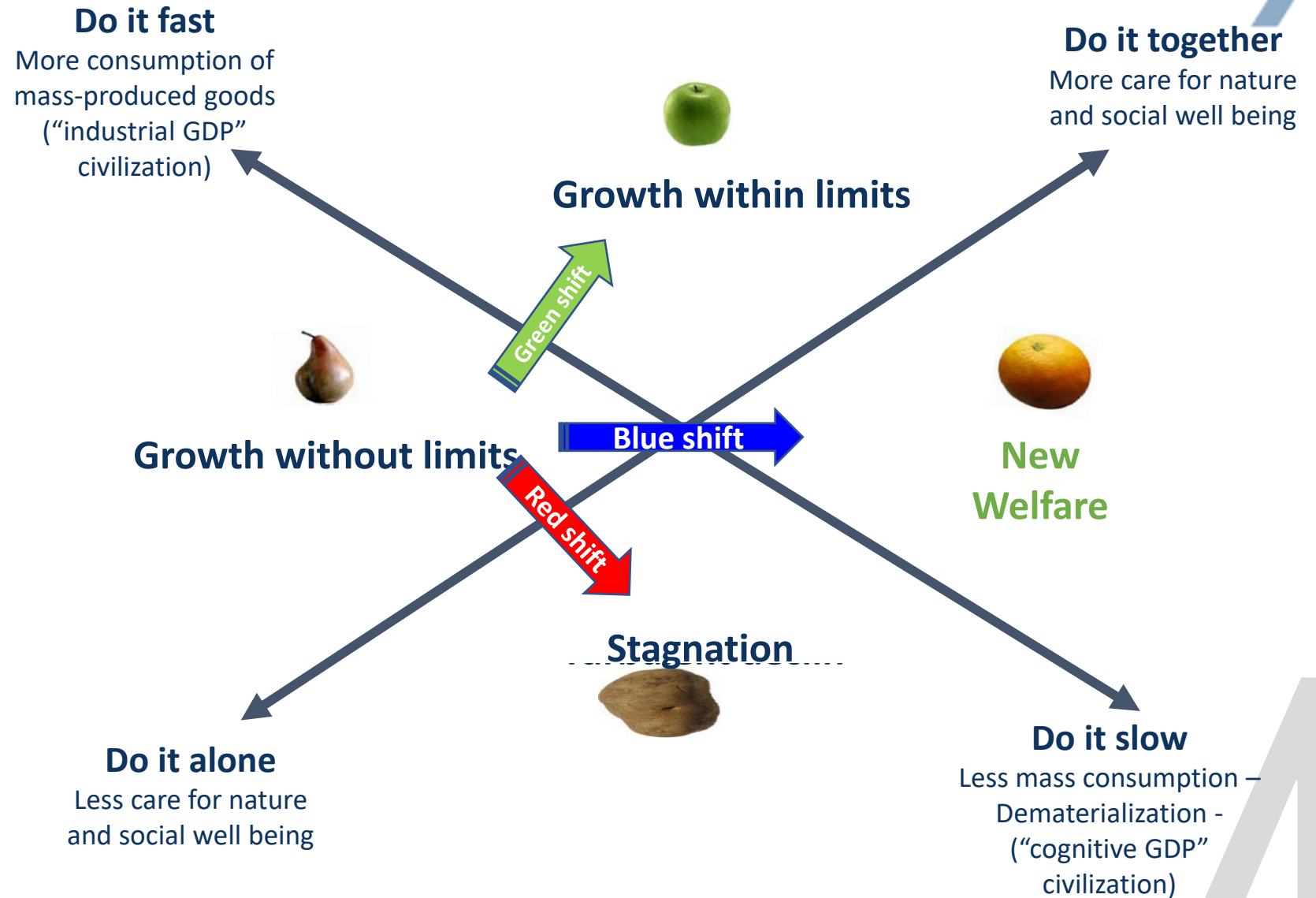
What they have in common:

- the goal to produce results that are expressed (also) in quantitative terms (so as to speak to policy makers), but reflect deeper and more articulate narratives, not (or less) constrained by the inherent rigidity of model
- an approach that starts by building narrative storylines and then strives to “translate” them into inputs and assumptions that can be fed to models;
- the belief that the real value of models is not to *predict* (which is next to impossible when it comes to long term dynamics of complex systems), but to *orient*
- Interface through stakeholders’ consultation/participation





Four scenarios:
Speed Vs cooperation

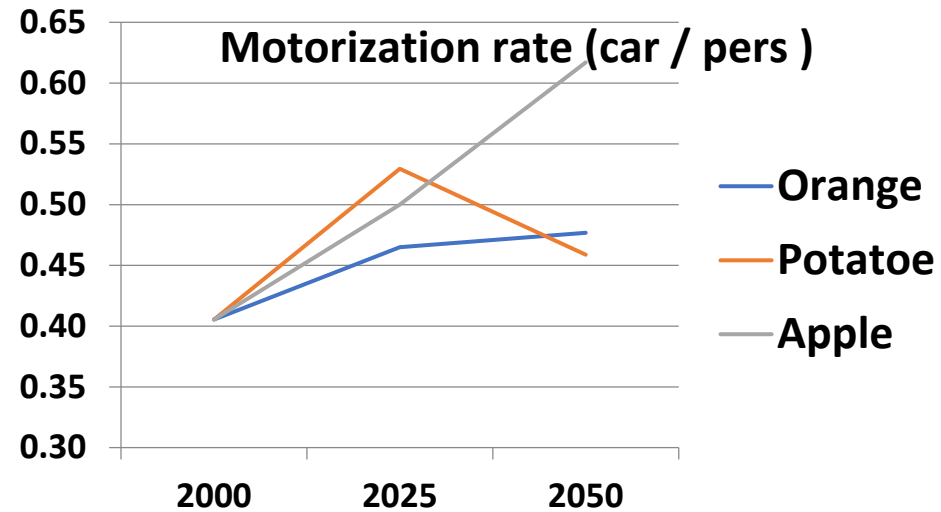


Contrasted visions of mobility development in the EU up to 2050

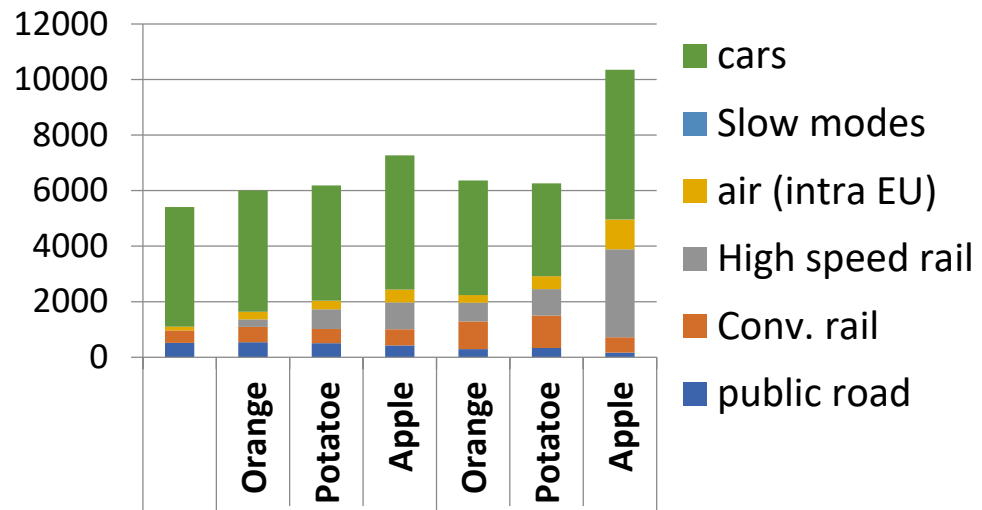
Results from VLEEM



- Motorization impacted by
 - urbanization
 - households structure
 - life styles



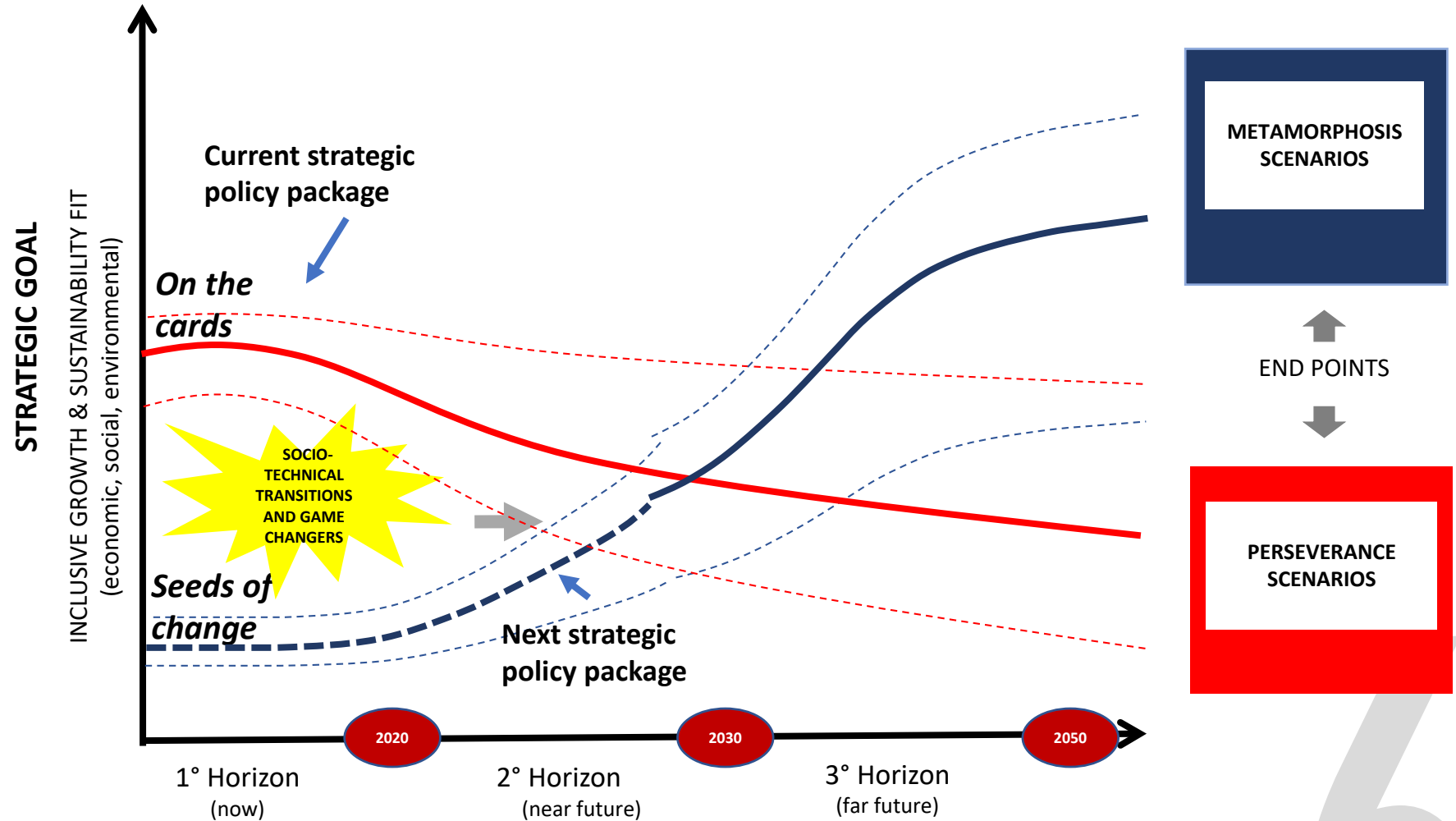
- Drivers of pass. traffics
 - elasticity speed / GDP
 - transport time budget
 - motorization



From perseverance to metamorphosis: making the most of the *seeds of change*



Two scenarios built around three horizons

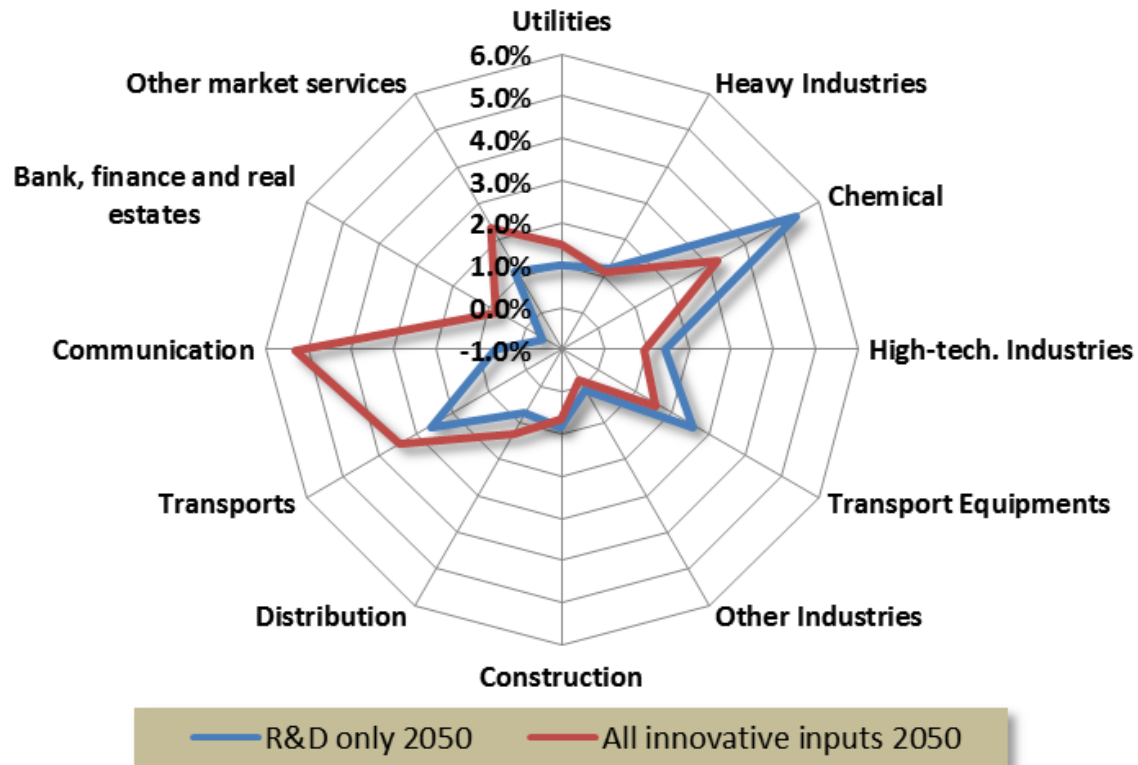


Perseverance vs Metamorphosis: impact on productivity

Results from the NEMESIS model

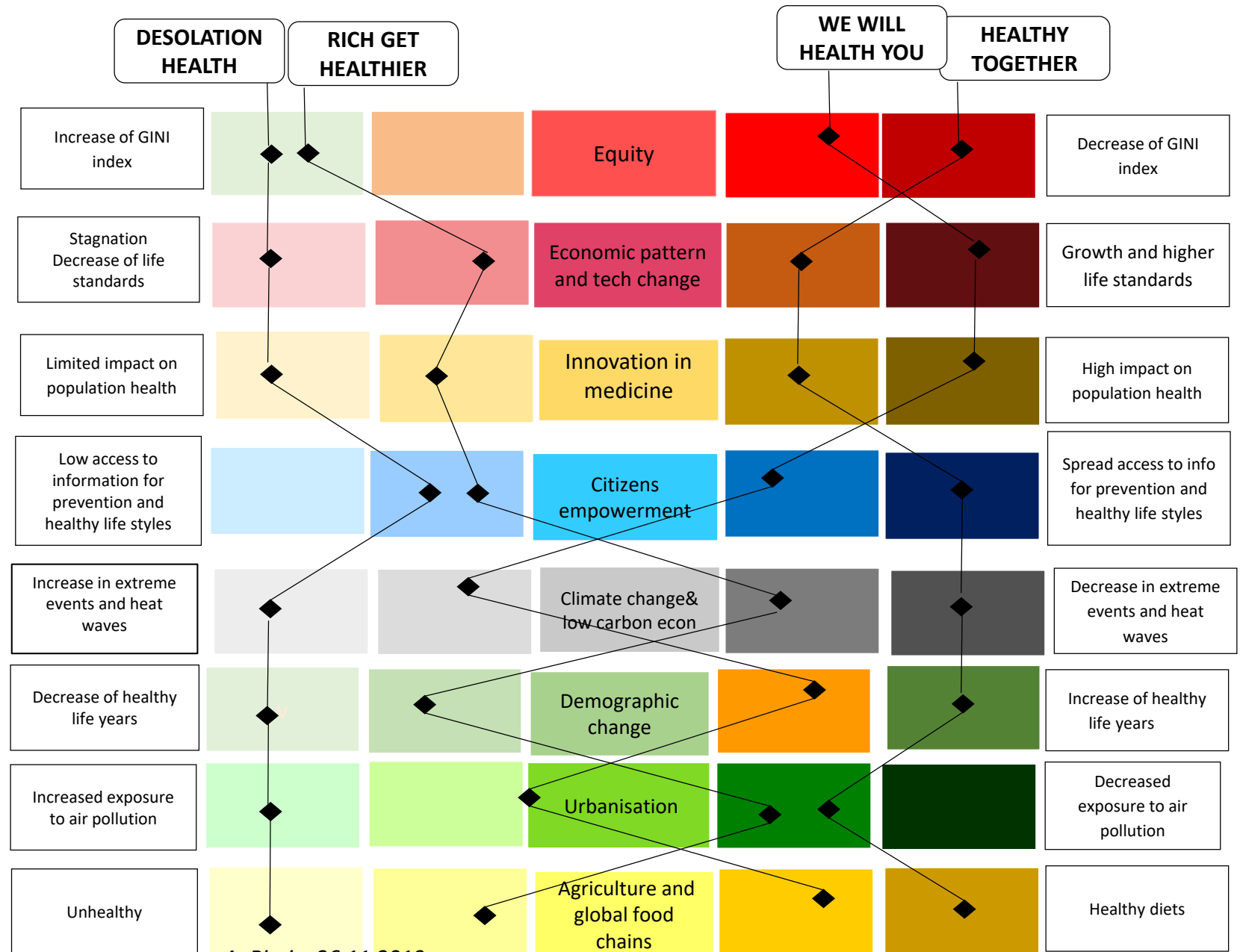


European sectoral labour productivity gains in both innovation policies in 2050



- Lumped R&D funding favours sectors more exposed to international competition
- Whereas, ICT and other intangibles are more performant to boost labour productivity in services sectors (less exposed)

FRESHER: FOUR SCENARIOS BUILT AROUND 7 CRITICAL UNCERTAINTIES




























Trends	Current level in Europe	Healthy together	We will health you	The rich get healthier	Desolation health
Equity	Gini index: 0.31 in 201; Income quintile share ratio: 5.2 in 2015	↑↑↑	↑↑	↓↓↓	↓↓↓
Technological change and economic innovation	GDP growth: 2.2% (2015), 1.8% (2016), 1.6% (2017); Unemployment rate: 10.2% in 2014	↑↑	↑↑↑	↓	↓↓↓
Innovation in medicine	R&D investments: 2.2% of GDP in 2014; Private share: 56%; Public share: 32%	↑↑	↑↑↑	↓↓	↓↓↓
Citizen empowerment	Health literacy rate: 48% population with poor health literacy and 52% with sufficient or excellent health literacy; Access to internet: 62% population daily ²	↑↑↑	↑	↓	↓↓
Climate change and decarbonisation	GHG emissions (only transport sector): +21% between 1990-2012; Global mean surface temperature: +0.85°C between 1880-2012	↑↑↑	↓↓	↑↑	↓↓↓
Demographic Change and migration	Healthy life years at 65: 8.16 (men and women) in 2014; Healthy life years at birth: 61.8 (women); 61.4 (men) in 2014	↑↑↑	↑↑	↓↓	↓↓↓
Urbanisation	PM2.5: 16.9 micrograms per cubic meter in 2012 PM10: 24.9 micrograms per cubic meter in 2012	↑↑	↓	↑↑	↓↓↓
Agriculture and global food chains	Consumption of fruits: 62.2% of pop weekly in 2008 Consumption of vegetables: 62.4% of pop weekly in 2008	↑↑↑	↑↑	↓	↓↓↓

A. Ricci – 26.11.2019

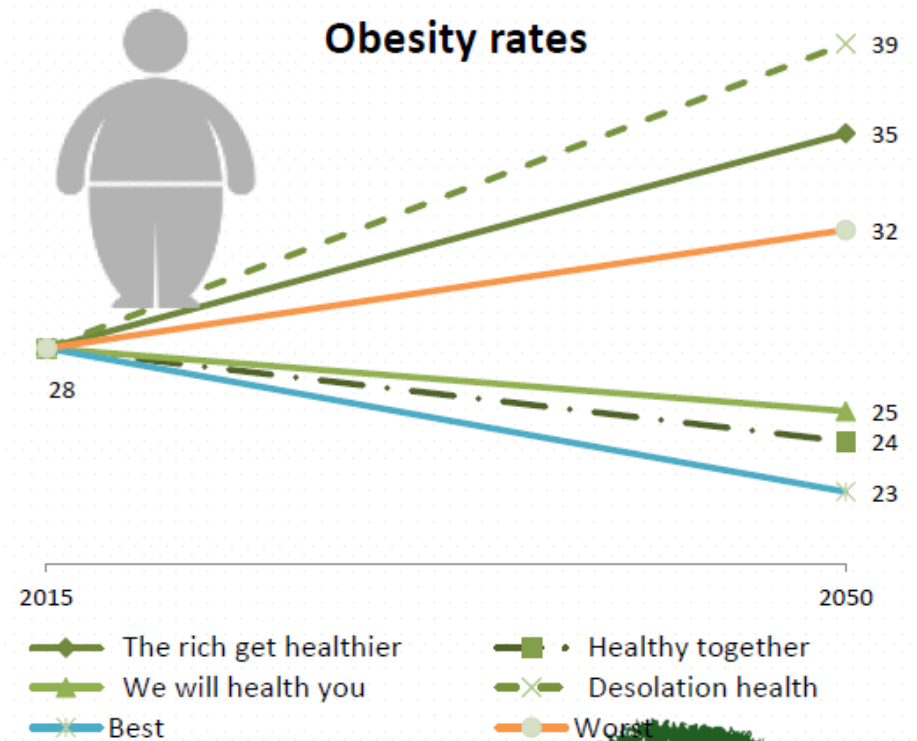
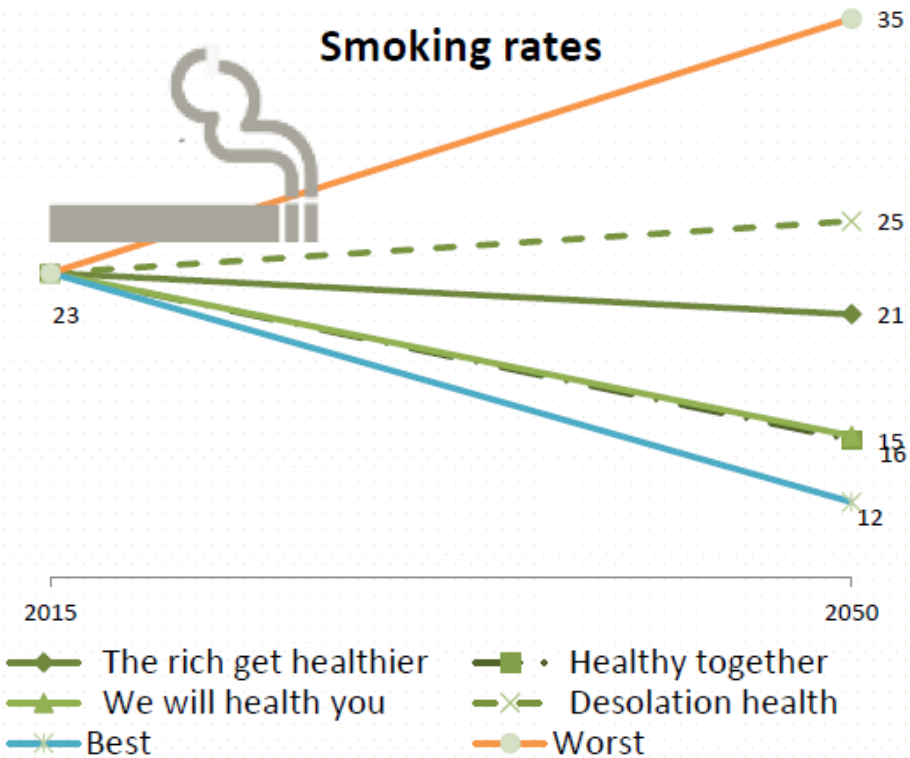
Trends evolution under FRESHER Scenarios

EXPERTS PREDICTED THE RISK FACTORS EVOLUTION IN THE 4 SCENARIOS

- Expert's consultation, 2017
- For each scenario: Expert's prediction of the level of risk factors in 2050
- 91 valid answers (average)

	The Rich Get Healthier	Healthy Together	We Will Health You	Desolation Health
 Obesity				
 Inactivity				
 Smoking				
 Drinking				
 Hypertension				

EXPERT'S EVALUATION OF RISK FACTORS IN THE 4 SCENARIOS



Source: Expert's survey, 2017



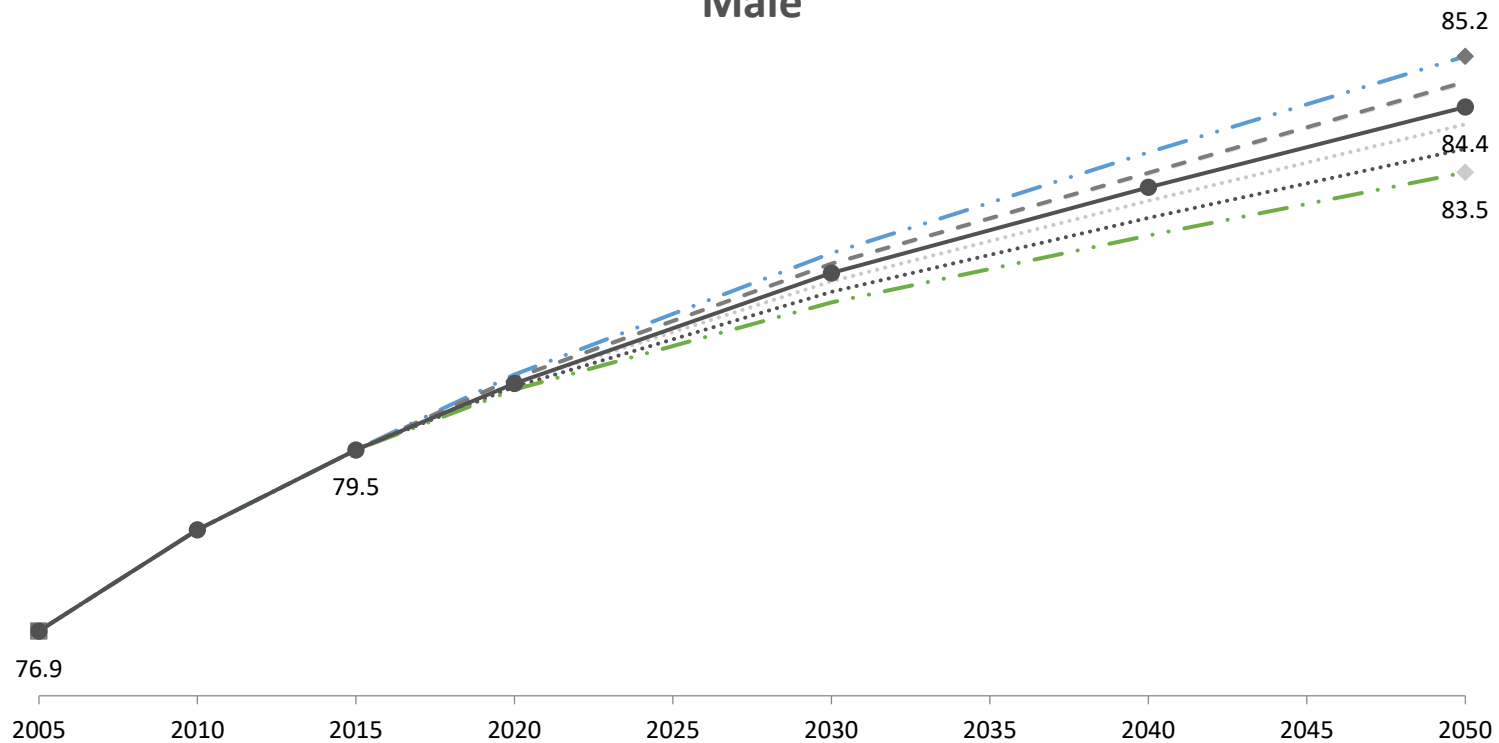
FRESHER

Final Report - 2011-2019

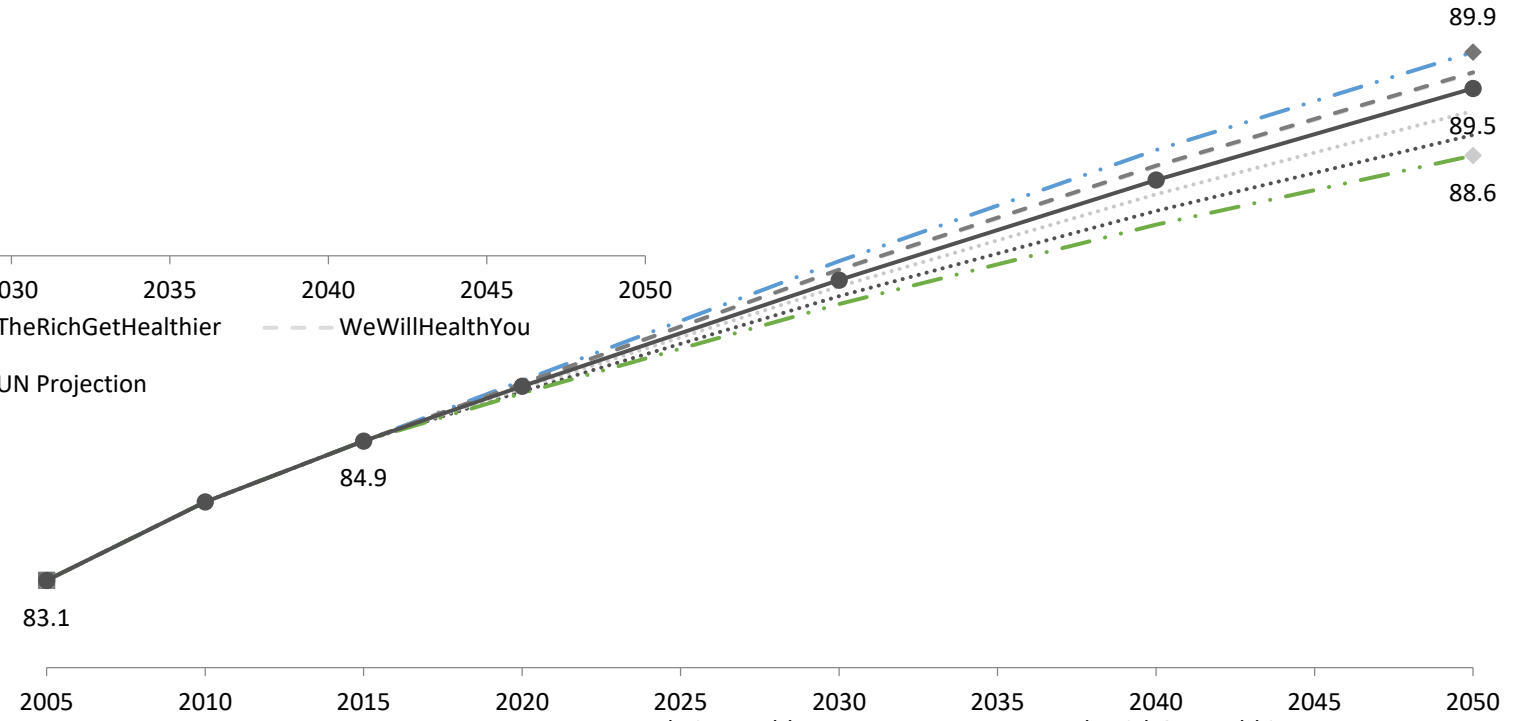
FORESIGHT AND MODELLING FOR
EUROPEAN HEALTH POLICY AND REGULATION



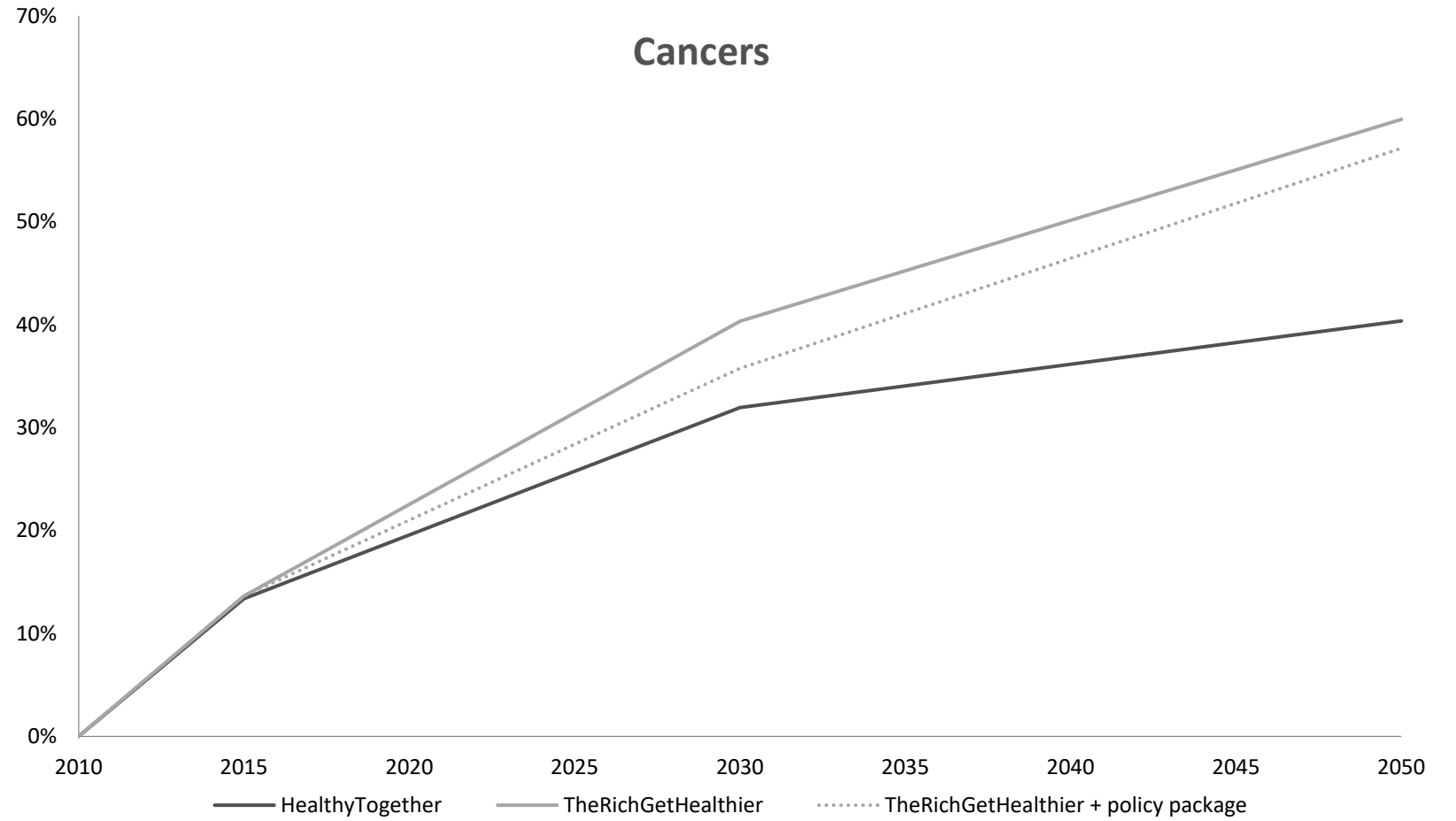
Male



Female



Results from the OECD microsimulation model: life expectancy under the four scenarios



Model results: cancers under the four scenarios



SOME LESSONS LEARNED

- Discontinuities
- Scale
- Model flexibility and adaptation
- (Over)simplification



**THANK YOU FOR
YOUR ATTENTION!**

ANY QUESTIONS?

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