# The cost of changing course

*John Hassler*

Institute for International Economic Studies, IIES

Stockholm University

# In Dire Straits

- The climate crisis acutely threatens the survival of mankind.
- Solutions are extremely costly and involve;
  - complete change of lifestyle,
  - degrowth,
  - unseen structural change,
  - new economic system,
  - removing democracy,
  - ,…

# Another narrative

- Climate change is for real but global consequences probably not very large. IPCC reports 0.2-2% GDP losses from 2° warming.
- But very large uncertainty. Little evidence for large global tipping points, but they cannot be ruled out.
- IMF/WEO report about the other claim – that solutions are very costly.
- They show they are not – a clever climate policy need not have large effects on growth and does surely not require a new economic system.

# Key results IMF/WEO

- Global carbon neutrality by 2050 can be done by phasing in a modest carbon price – 10-40$/t$CO_2$ by 2030 (2.5-10 cents/ltr gasoline).
- Gives non-negligible negative effects on growth and income distribution.
- But the negative effects can be largely neutralized by;
  - A debt financed infrastructure investment program and green energy subsidies of 1% of GDP phased out over 10 years.
  - Transfers to low-income hlds financed by lesser part of carbon pricing revenues.
- Increased total labor demand but some needs for reallocation of labor. 2% of labor force. (About a month of US gross job creation).
- A bit higher costs in some developing countries. India 277% richer 2050 with policy but 287% without. But all parts of world must participate!

# Policy mix

- Carbon pricing necessary for $CO_2$ reduction − R&D subsidies and green infrastructure investment cannot substitute for pricing. Same result as in our research (with Per Krusell and Conny Olovsson).

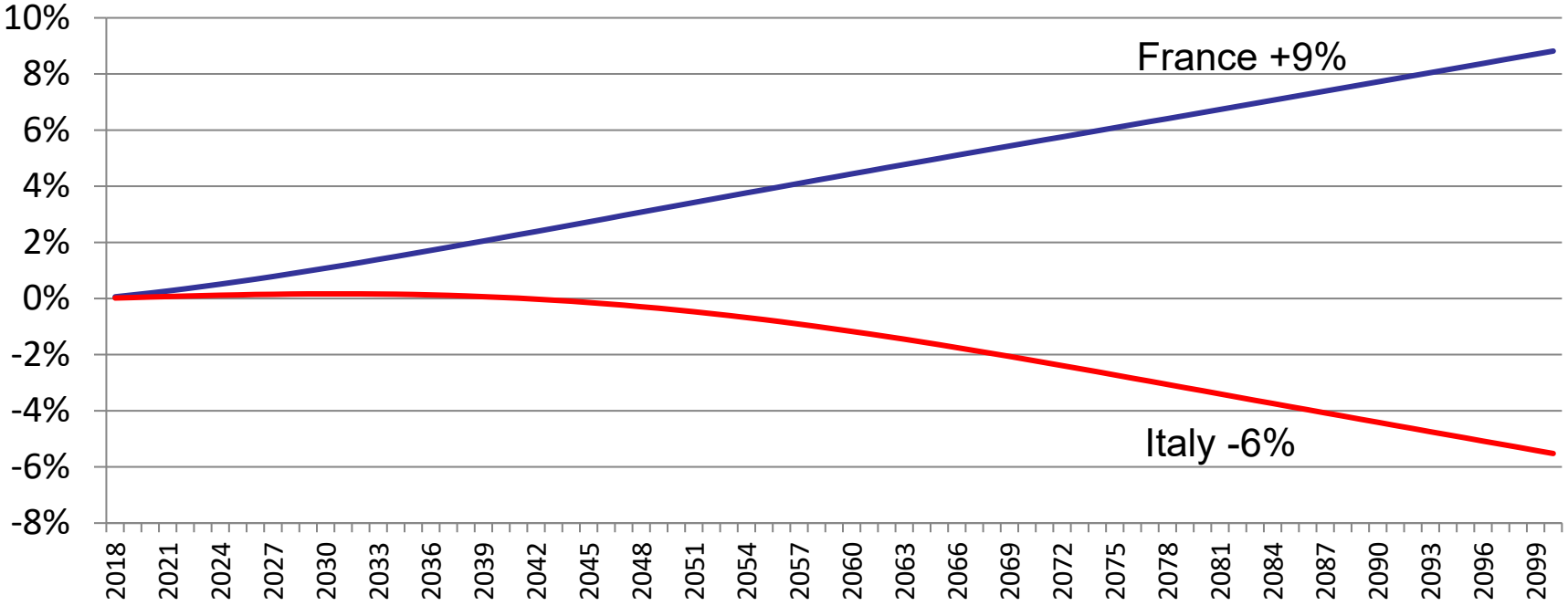
- According to IMF report, short-run stimulus also warranted. R&D subsidies and green infrastructure investment. Differs from our results. Why?

- IMF-model has more short-run frictions, real, financial and nominal. Makes dynamics within, say, a decade different and provide a role for these additional policies.

# Climate Damages

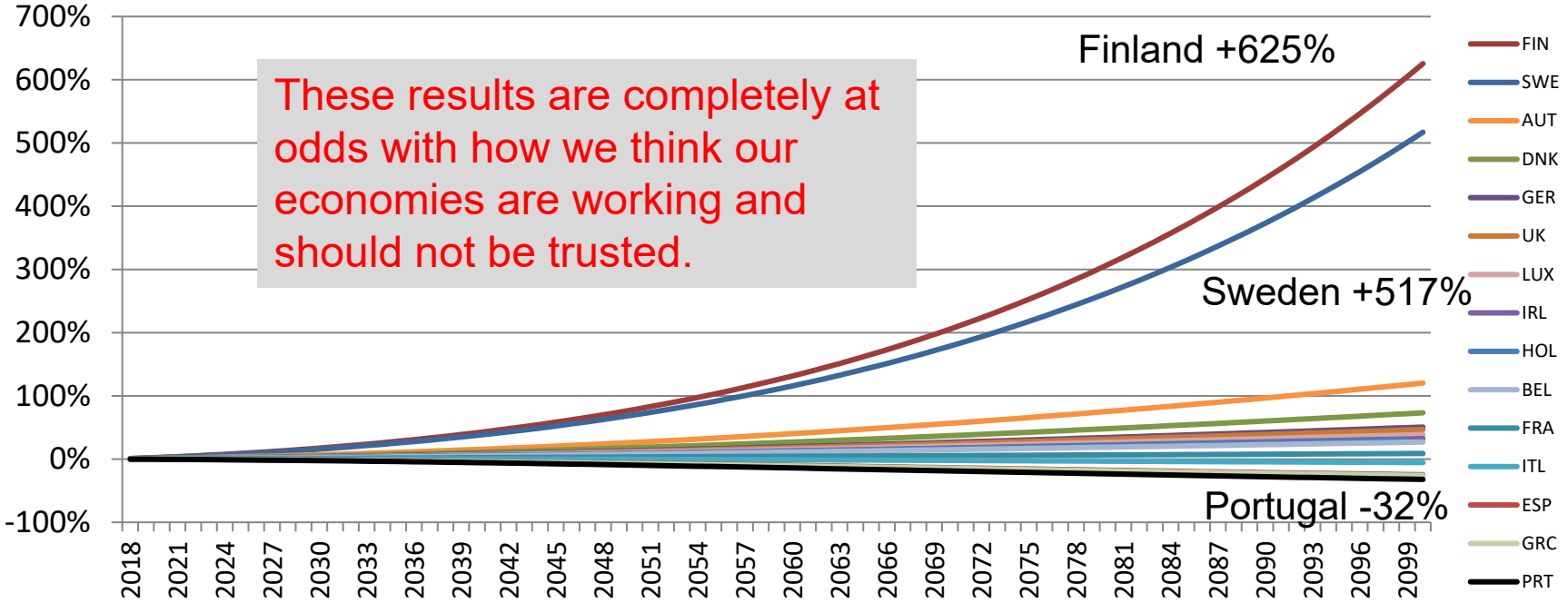
- Very difficult to assess economic consequences of climate change. Statistical relations between weather changes and GDP not reliable – need a model to put some discipline on results.
- Bad example, Burke et al. (2015) used in this report (not essential for results).
- They regress yearly GDP growth on regional temp and temp squared to find growth = f(regional temp) and then extrapolate until 2100.
- Find that growth increases(decreases) in regional temp if it is lower(higher) than 12.7°C. Aggregate effects over whole world. Negative aggregate effects of climate change, larger than some previous studies.

# GDP effects of 2.5° scenario according to Burke et al.




Source: Own calculations based on Burke et al. 2015

# GDP effects of 2.5° scenario according to Burke et al.




Source: Own calculations based on Burke et al. 2015

# Conclusion

- Quite interesting and well-executed study.
- Solution to climate problem not very difficult and costly.
- A cheap insurance against very uncertain consequences of emissions of $CO_2$.
- Report should make front-page headlines and should have featured in Greta's special edition of Dagens Nyheter.
- Why didn't it?