



Fondazione  
Eni  
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## ***The Economic Impacts of Climate Change***

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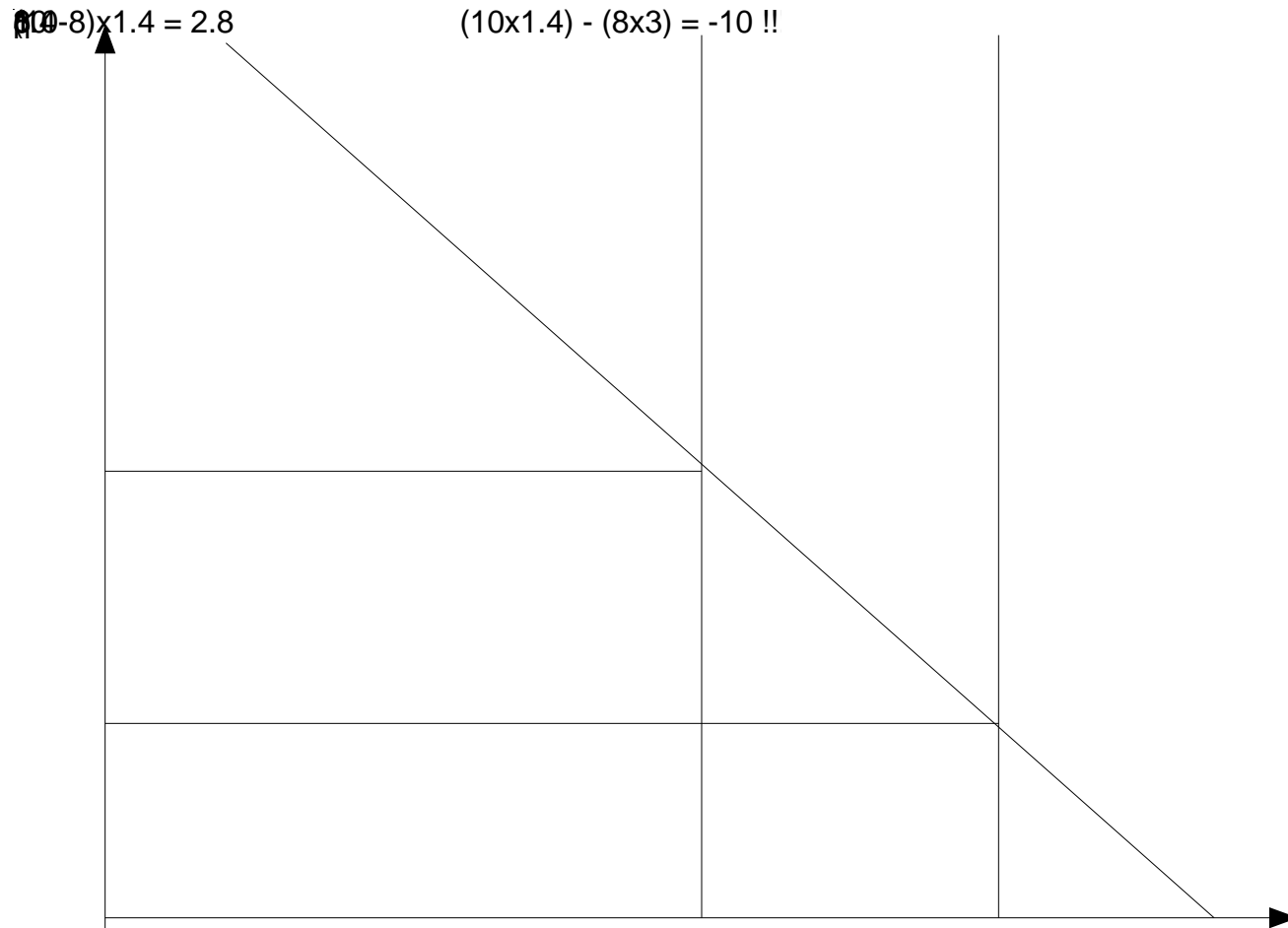
***Motu Public Policy Seminars***

- *What is climate change?*
- *Should we worry about climate change?*
- *Why climate change policies are difficult*
- *Adaptation and mitigation*
- *Climate change modelling*
- *Impact valuation*

$$V = (q' - q^{\circ})p$$

- *there is a market price*
- *there is no market price*
- *there is a market price, but it does not reflect social value*

# Market price (possibly corrected)



# Where does demand come from?

- *Demand depends on income and other prices*
- *Income is generated by selling resource services*
- *Supply shocks modify demand: an example*

- *Partial Equilibrium vs. General Equilibrium*
- *Computable General Equilibrium models*
- *Impact analysis + autonomous adaptation*
- *Static and dynamic*

- *Comparative static, “pseudo-calibration”*
- *Climate change reference scenario*
- *Micro-sectoral studies*
- *Shock “translation”*
- *Dynamic setting*

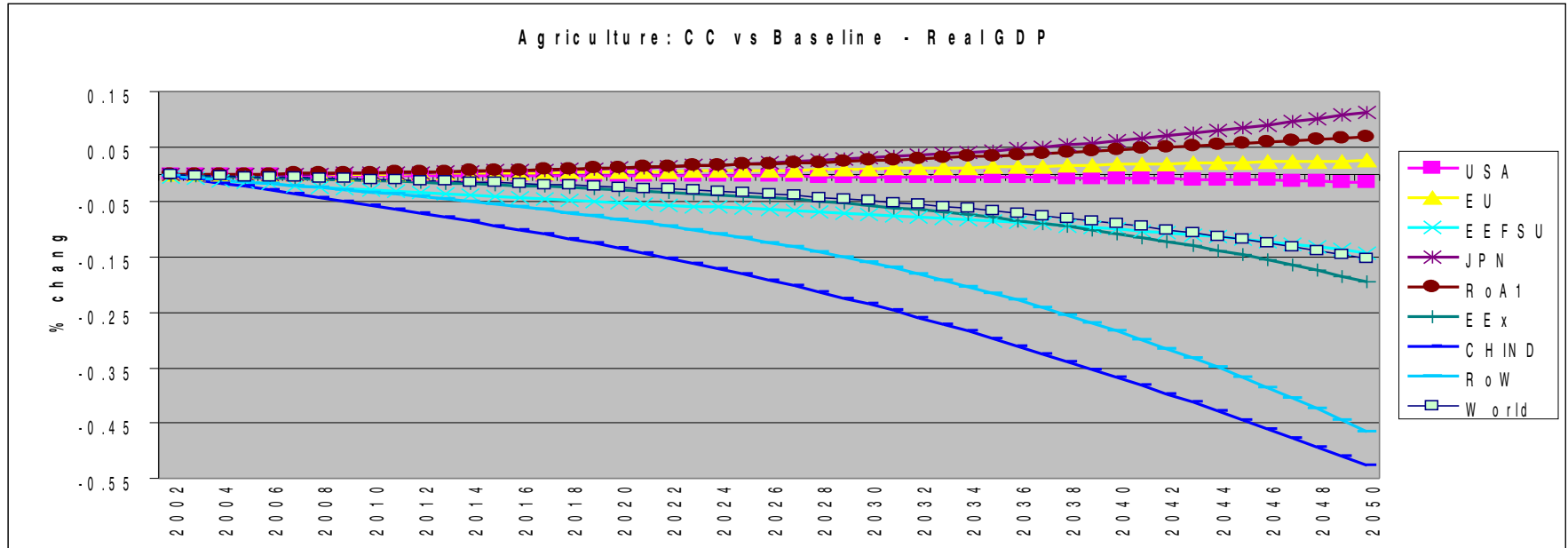


- *Variations in primary resource endowments and productivity*
- *Exogenous variations in the structure of demand*

Region	Health			Land Productivity		
	Labour Prod.	Public Exp.	Private Exp.	Wheat	Rice	Cereal Crops
USA	0.014	-0.216	-0.022	-5.655	-6.177	-8.168
EU	0.061	-0.307	-0.011	-5.195	-5.047	-7.035
EEFSU	0.110	-0.341	-0.009	-5.909	-7.266	-9.505
JPN	0.073	0.085	0.002	-5.649	-5.532	-7.448
RoA1	0.101	-0.267	-0.012	1.945	-0.032	-1.926
EEx	-0.222	1.232	0.076	-1.948	-2.677	-4.397
CHIND	0.037	-0.084	-0.002	-2.024	-3.121	-4.956
RoW	-0.170	1.133	0.098	-6.728	-7.033	-8.714

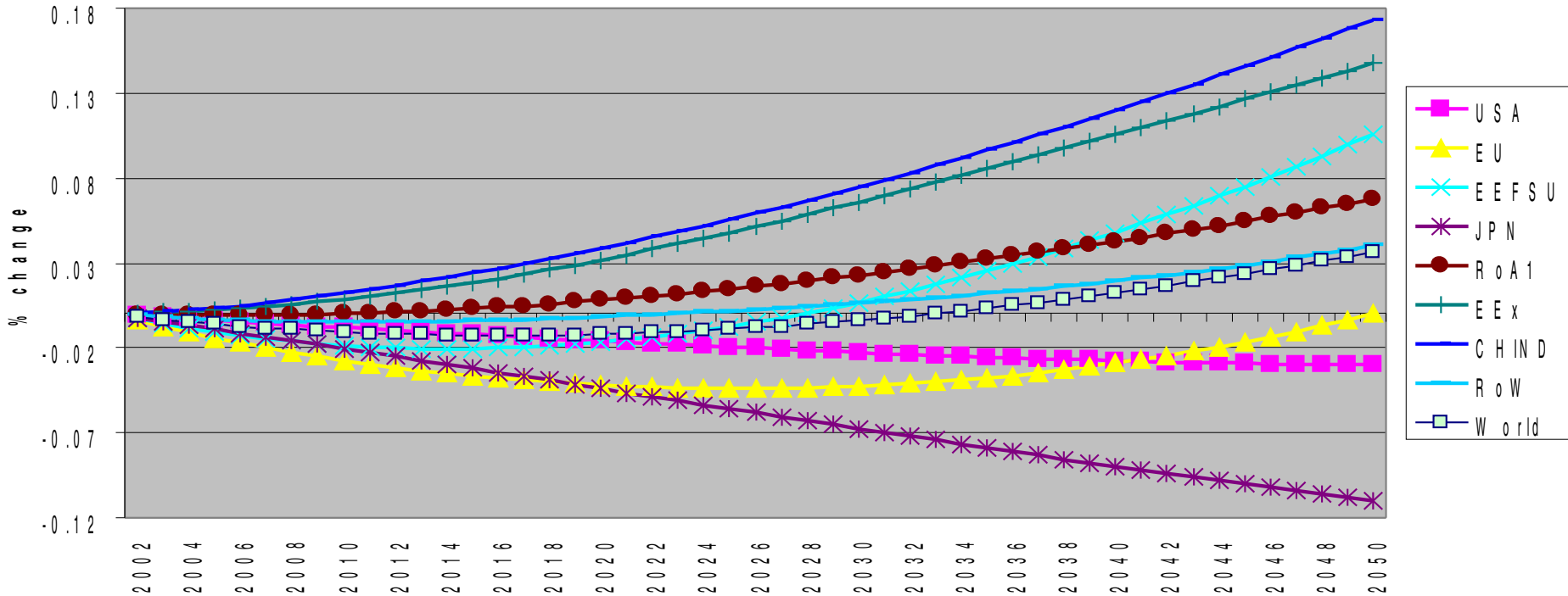
Region	Tourism		Energy Demand			SLR
	Mserv Demand	Income transfers*	Natural Gas	Oil Products	Electricity	Land Loss
USA	-0.56	-47.7	-13.670	-18.519	0.757	-0.026
EU	1.28	60.5	-13.418	-15.445	-1.259	-0.015
EEFSU	-1.60	-10.1	-12.931	-17.388	0.762	-0.008
JPN	9.42	225.0	-13.324	-17.317	0.737	-0.073
RoA1	1.13	14.4	-0.691	-7.133	-3.908	-0.003
EEx	-3.49	-126.3	0	0	20.982	-0.067
CHIND	-0.87	-7.3	0	0	20.379	-0.040
RoW	-3.50	-108.5	0	-13.136	5.277	-0.104

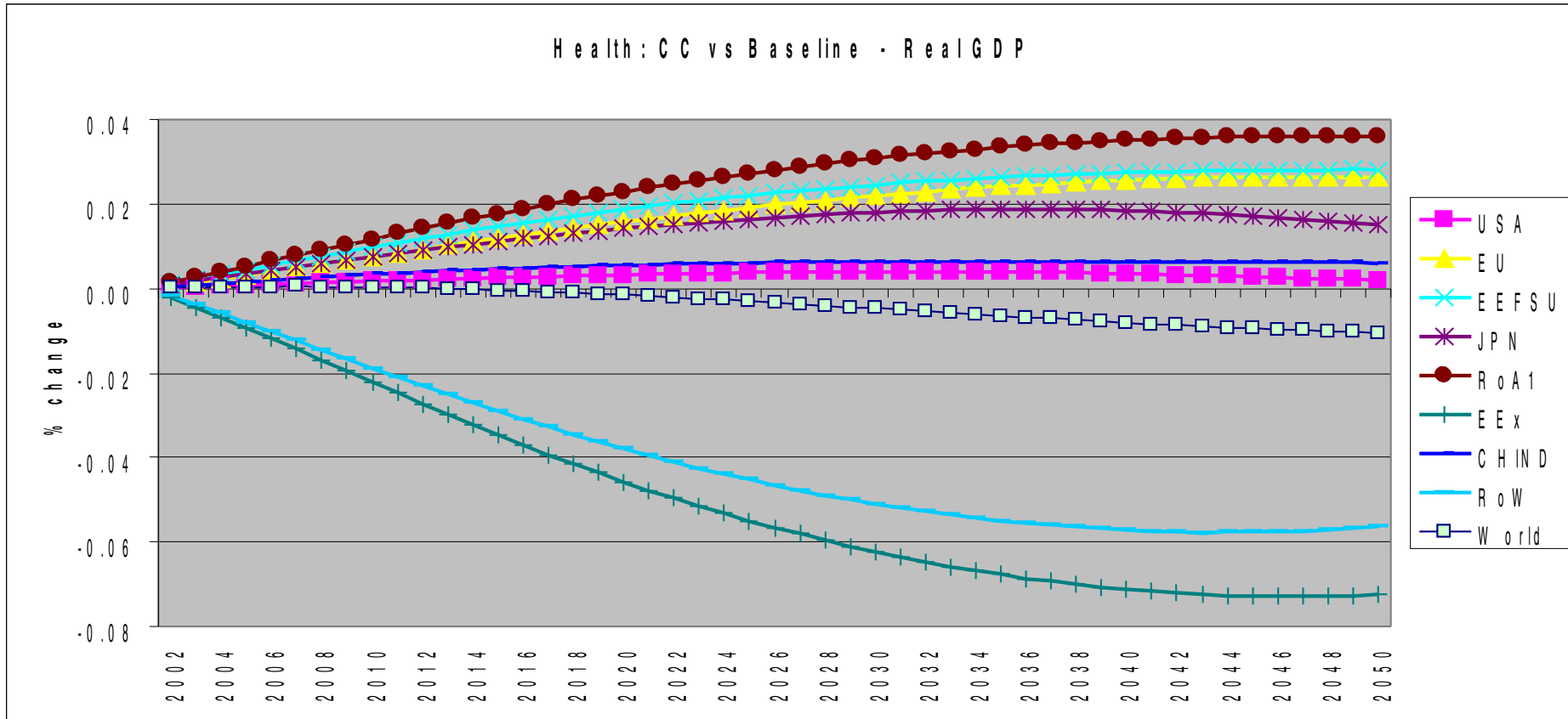
# Agriculture productivity impact

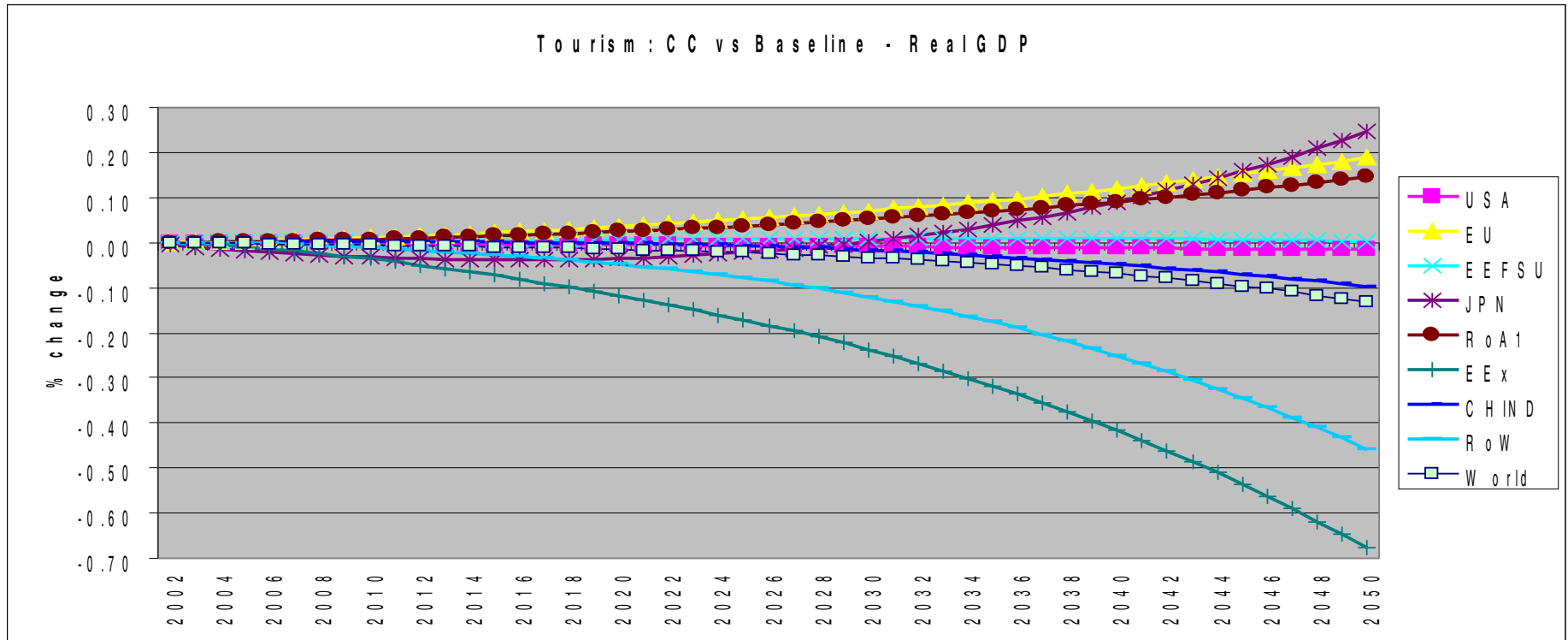


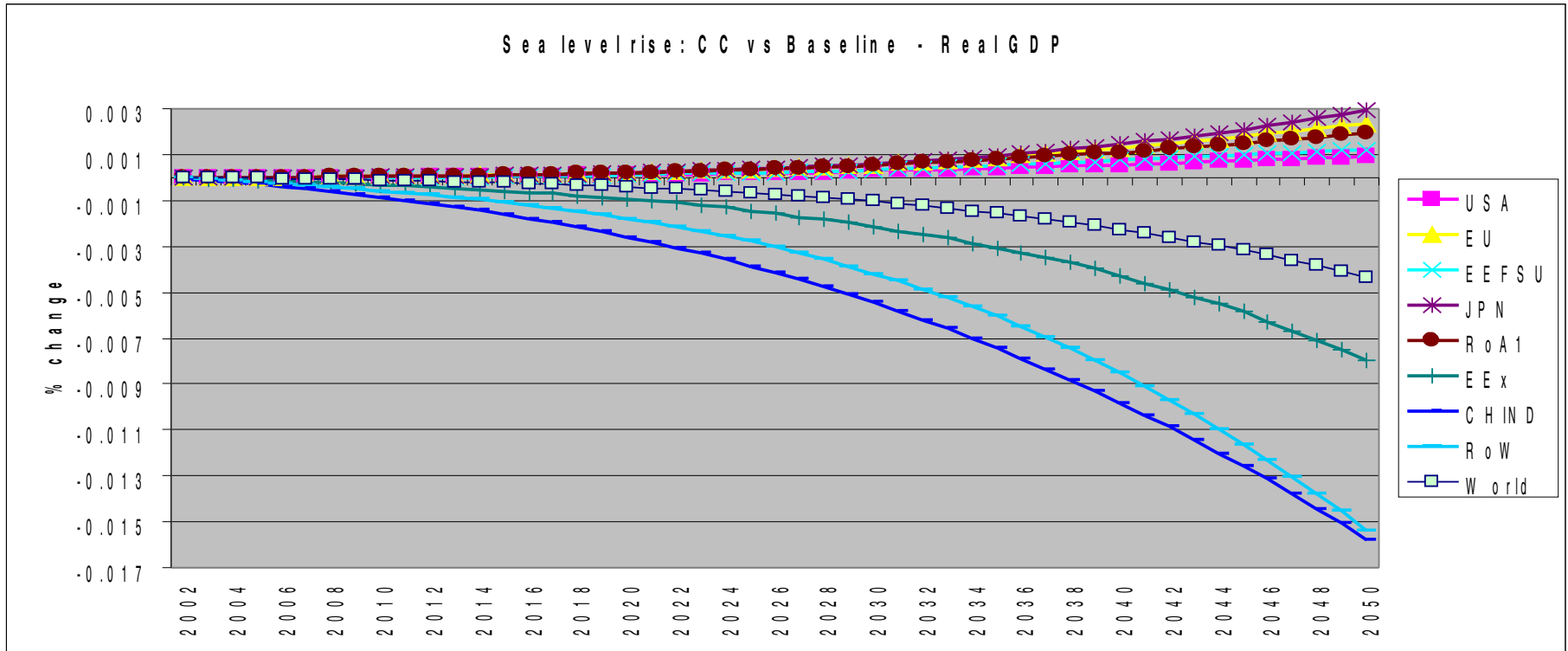
# Energy demand impact

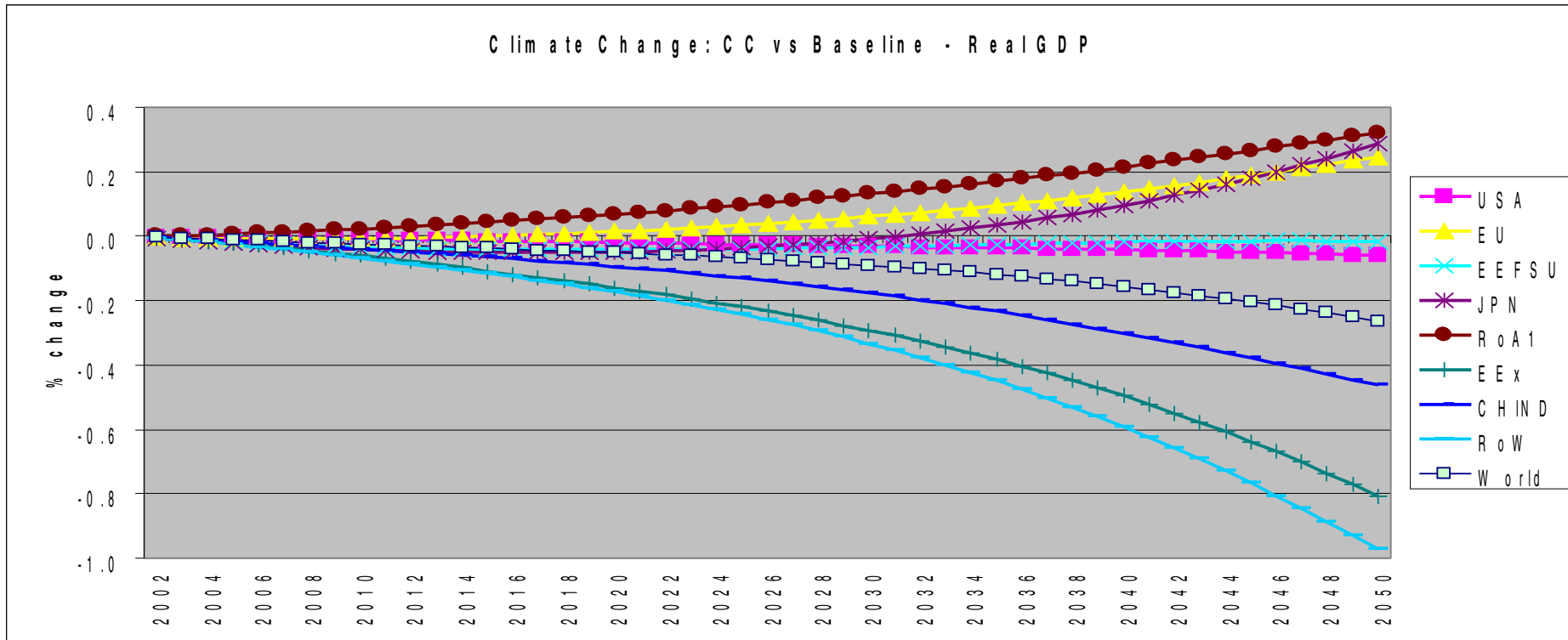
Energy Demand: CC vs Baseline - Real GDP













- *GHG emissions (CO<sub>2</sub>, N<sub>2</sub>O, CH<sub>4</sub>)*
- *Industrial prices and consumption volumes*
- *Trade flows*
- *Welfare indexes*

- *The relevant effects are distributional*
- *Negative consequences on equity*
- *Consistency with other studies (e.g., Dell et al., 2008)*
- *Global emissions are not very much affected by CC impacts*

***Thank you for your attention!***

***ICES' webpage:***

***<http://www.feem-web.it/ices/index.html>***