Arbeit als Teil einer Energieutopie

Sigrid Stagl (WU Wien)

Energiegespräche - Energieutopie oder Energiedystopie?

15. September 2015 um 18.30 Uhr

Festsaal des Technischen Museums Wien

Folgende Fragen sollen in den kommenden Energiegesprächen diskutiert werden:

- Wie wird bzw. wie soll die Energiezukunft aussehen?
- Wie wird die Bereitstellung aussehen, wie die Verteilung?
- Wer wird sich Energie leisten können? Wer sind die Verlierer?

Übersicht

- Energieeffizienz
- Wirtschaften innerhalb von biophysischen Grenzen
- Nachhaltiges Handeln von Individuen
- Sozialen Infrastrukturen, die nachhaltiges Handeln unterstützen
- Umdenken bedeutender sozialer Institutionen, zB Arbeit
- Energieutopien brauchen Berücksichtigung des sozial-ökologischen Nexus

Energieeffizienz

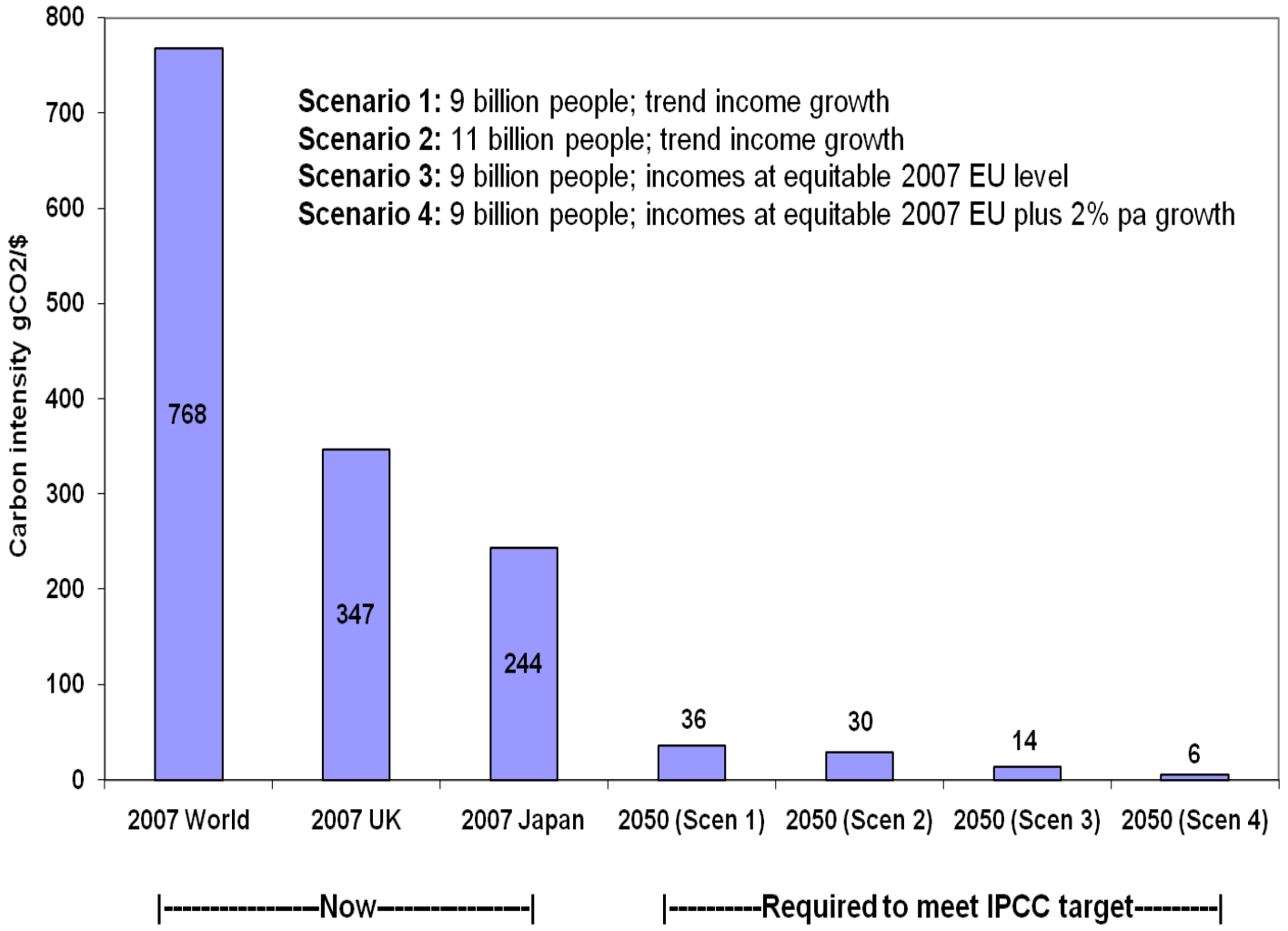
- Steigerung der Energieeffizienz wird oft als Schlüsselfaktor zur Erreichung von langfristigen Energie- und Klimazielen gesehen
- Energieeffizienz wird vielfach als Allheilmittel betrachtet, um energie- und umweltpolitische Ziele (Versorgungssicherheit, Klimaschutz etc.) kostengünstig zu erreichen
- Hoffnung, dass eine energieeffiziente Wissensgesellschaft viel weniger Energie verbraucht; Reduktion der Energieintensität
- Kann eine Effizienzrevolution gelingen?

Kann eine Effizienzrevolution gelingen? Ausmaß der Entkoppelung nötig bis 2050

- Assume 0.7%/year population growth and 1.4%/year per capita GDP growth
- For global energy and process CO_2 emissions to fall by 50% to 85% by 2050, carbon emission per unit of GDP must fall by 82% to 94%
- Implies cut of 3.8% to 6.4%/year
  - cf -1.3%/year 1970-2000 and +0.3%/year since 2000
  - If only -1.3%/year, emissions increase by 55%
- Even if emissions and population stabilised, carbon intensity in 2050 must be less than 2% of 2000 levels
- *Is this plausible?*

Source: Sorrell 2009

Scenarios carbon intensity



Source: *Prosperity without growth*, Tim Jackson (London, Earthscan 2009)

Kann eine Effizienzrevolution gelingen?

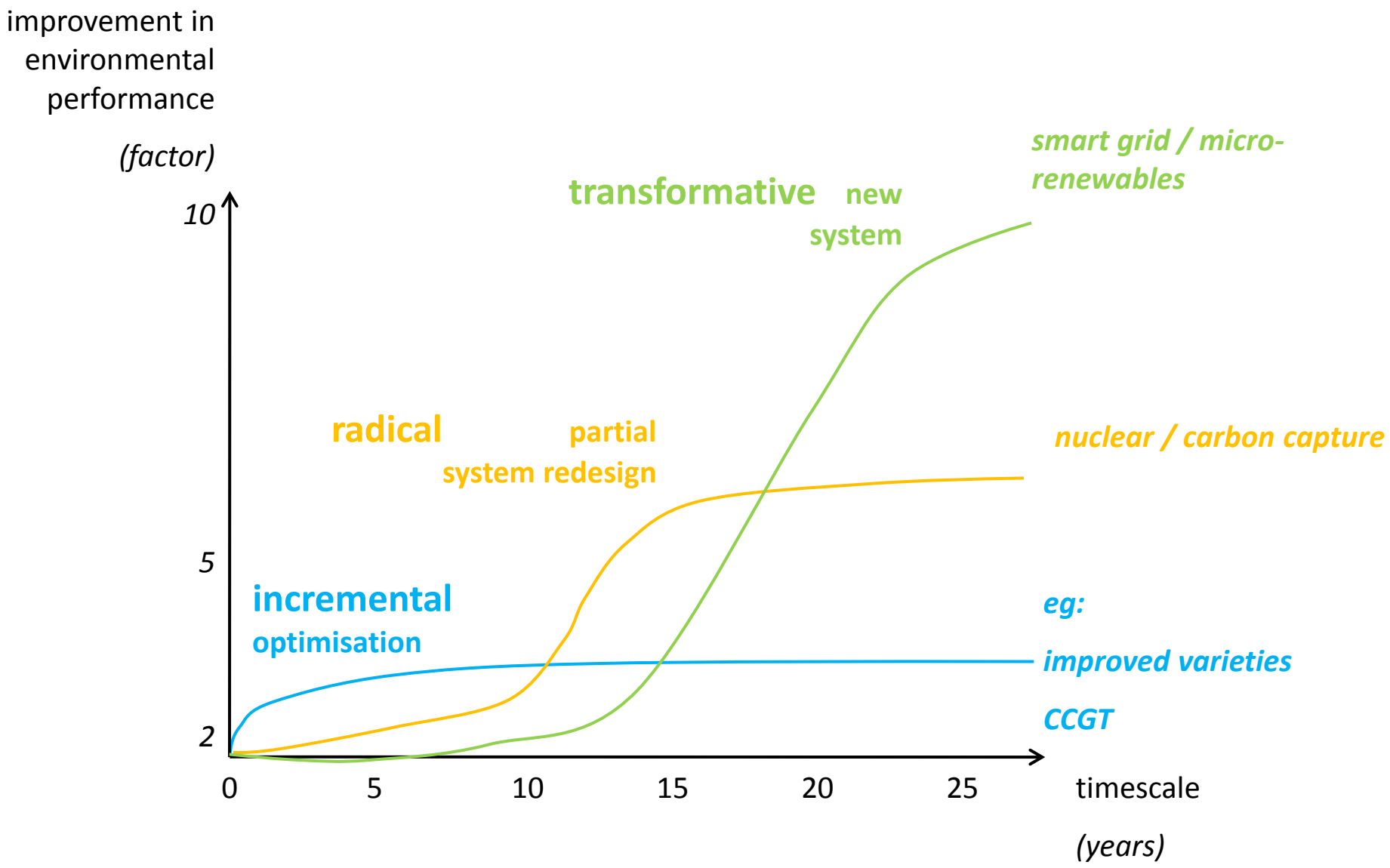
Möglich durch

- Systeminnovationen
- Tipping points

Schwierig, wegen

- direkten und indirekten Reboundeffekten
- sozial-ökologischem Nexus

Socio-Technical Transition



The Rebound Effect: An Assessment of the Evidence for Economy-wide Energy Savings from Improved Energy Efficiency

rebound study by Steve Sorrell for the UK Energy Research Centre (UKERC) from 2005-2007

quantifying rebound is challenging; not only direct, but also indirect effects (knock-on changes throughout the economy) and efficiency improvements rarely occur on their own

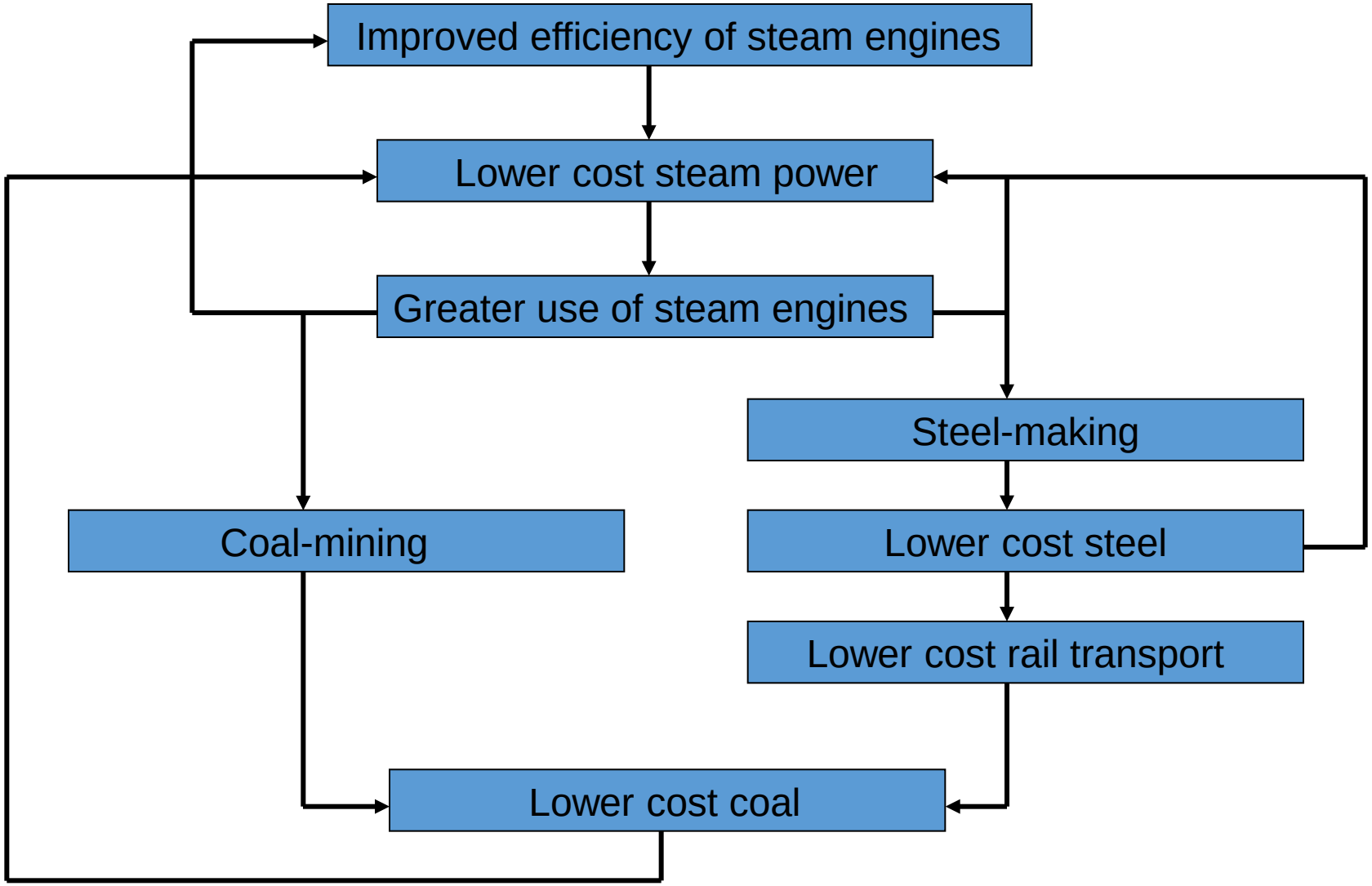
systematic review of the evidence

→ Rebound effects are significant and will limit the potential for decoupling energy consumption from economic growth

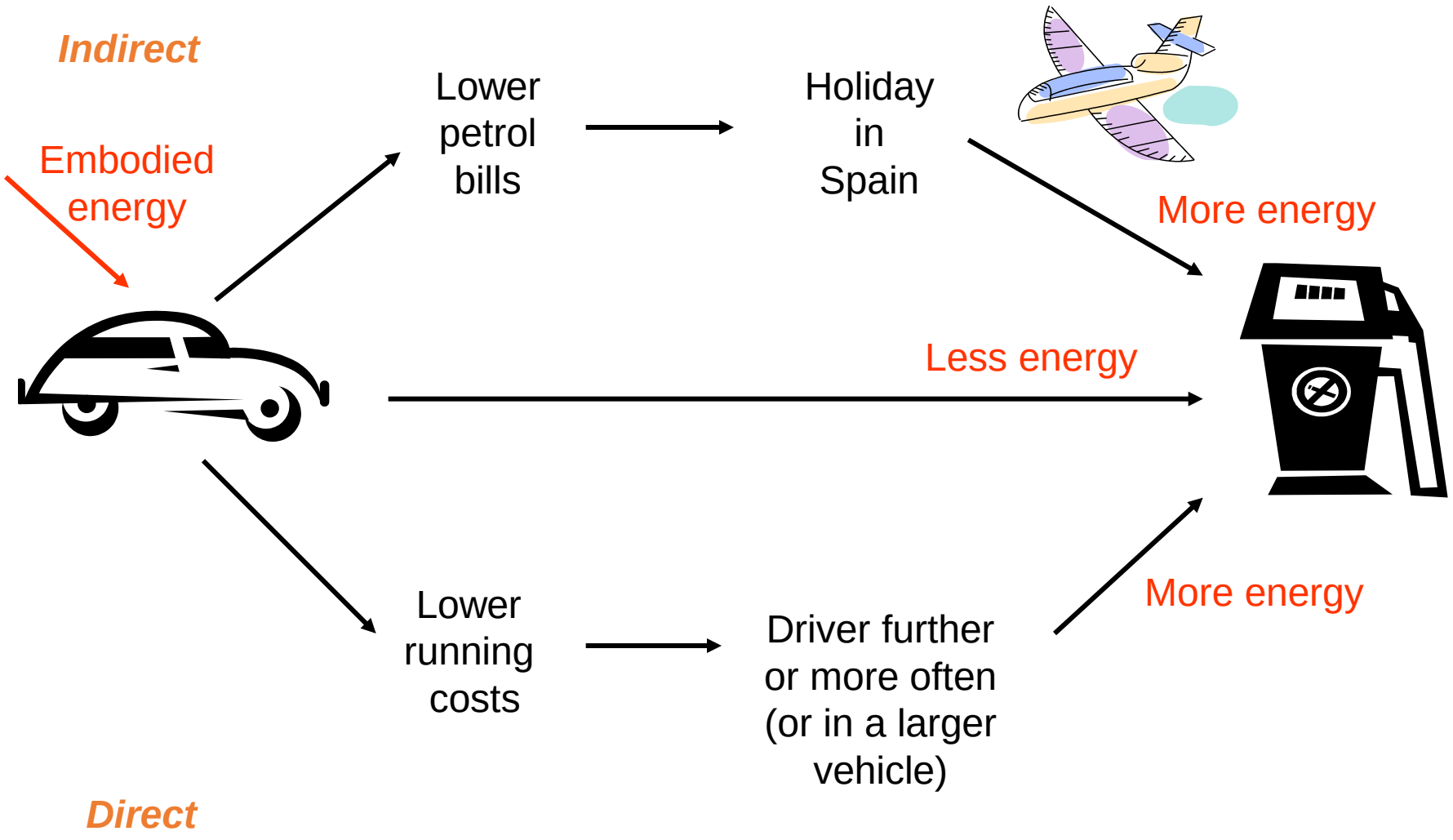
“It is wholly a confusion of ideas to suppose that the economical use of fuel is equivalent to a diminished consumption. The very contrary is the truth….Every improvement of the engine, when effected, does but accelerate anew the consumption of coal”

W.S. Jevons, *The Coal Question, 1865*

Jevons' Paradox holds in important cases



Rebound effects - consumers

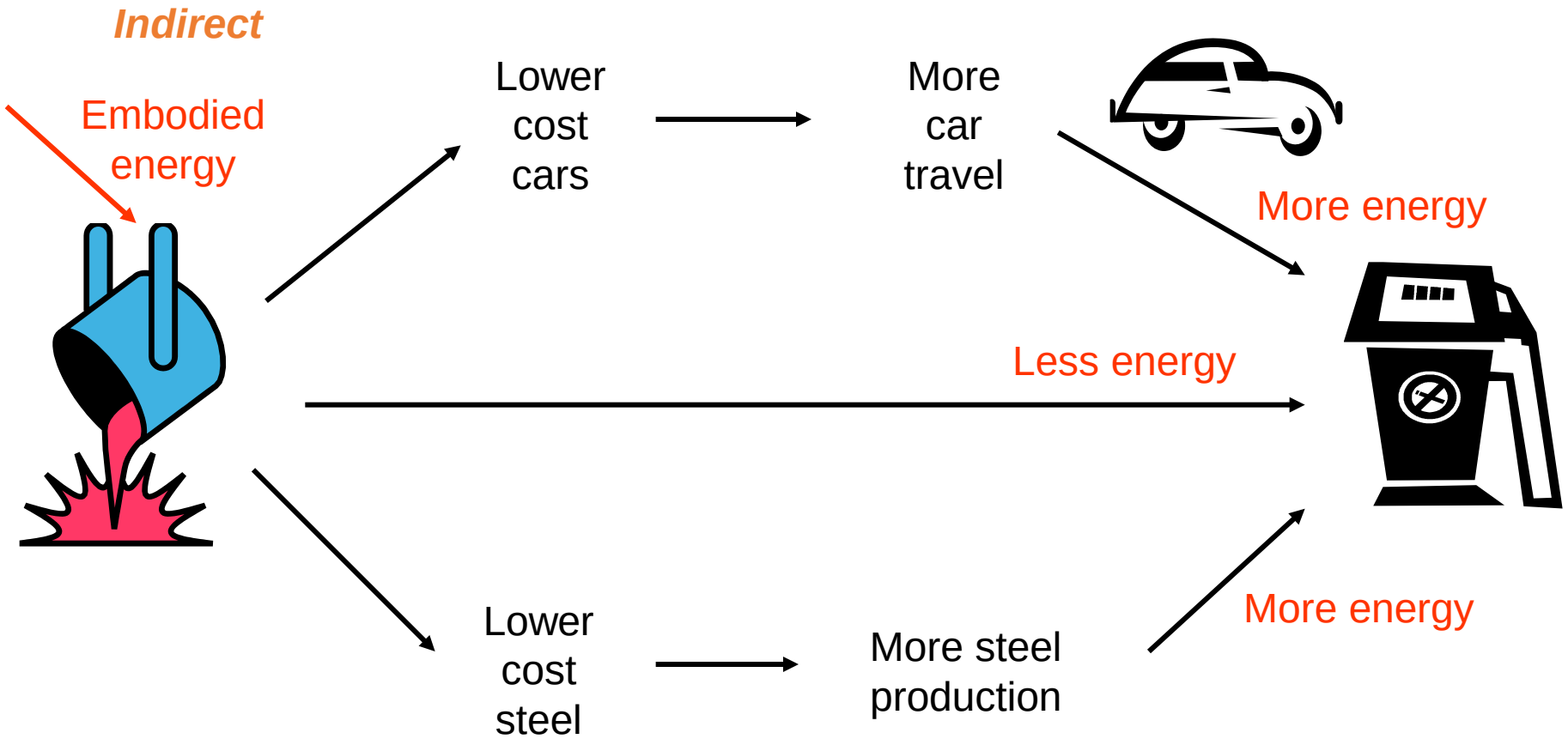


Source: Sorrell 2007

Reinforcement of rebound effects

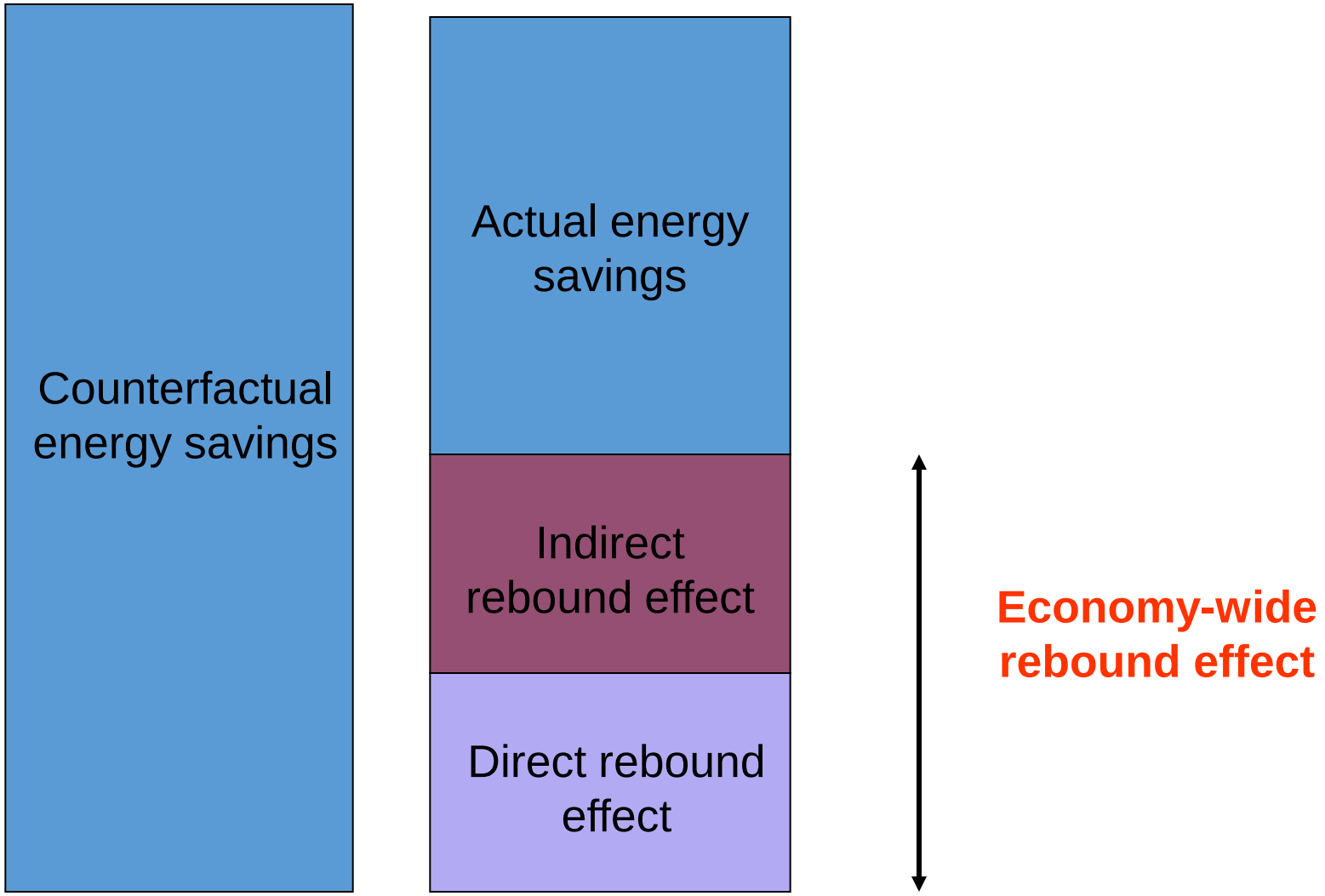
Source: Sorrell 2007

Rebound effects - producers



Source: Sorrell 2007

Economy-wide rebound effect



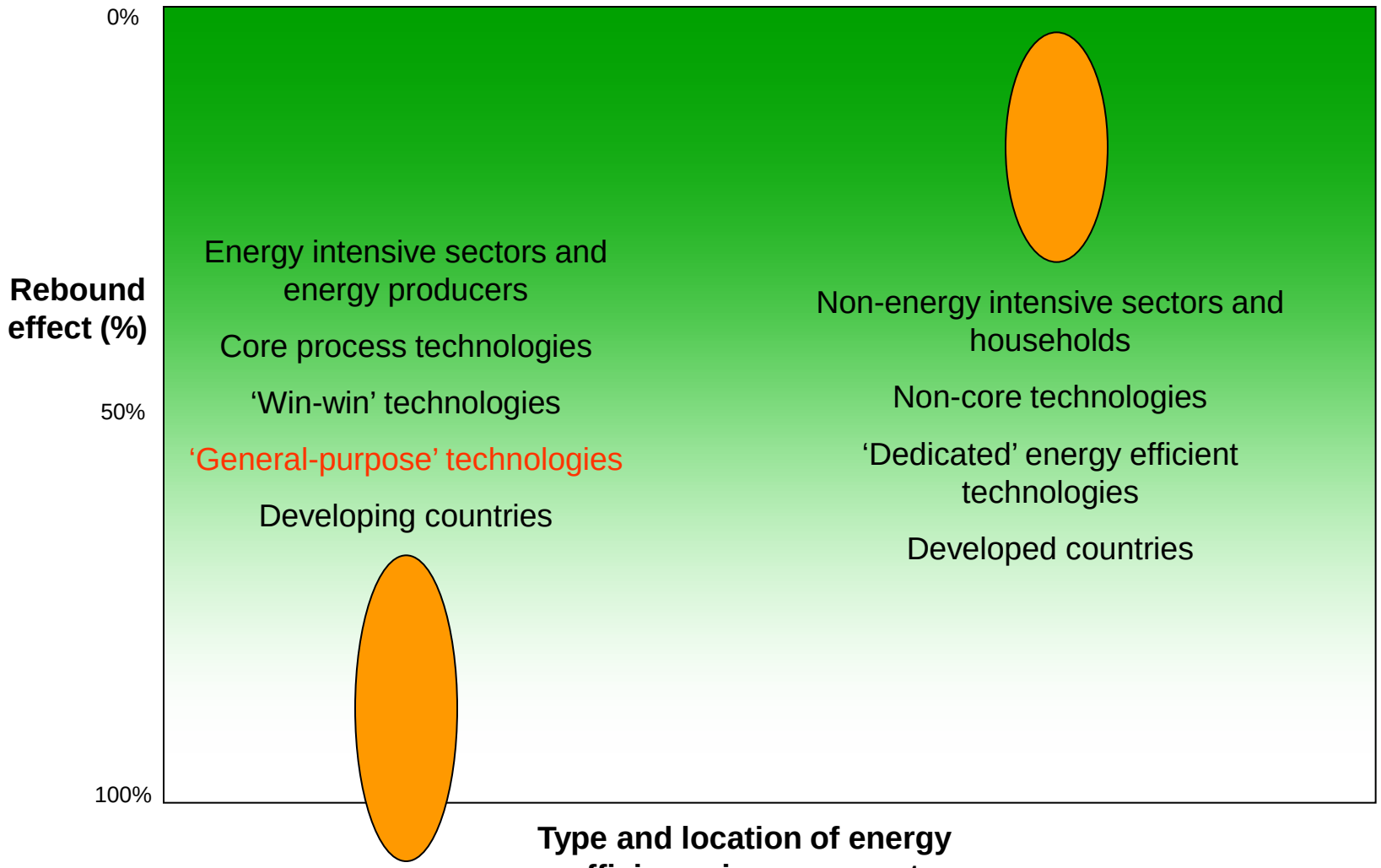
Source: Sorrell 2007

Rebound effects matter…

- *Direct*: 30% or less for car travel and space heating/cooling. Smaller for most other household energy services
  - *But*: Only limited time periods studied. Marginal consumers ignored. Only subset of variables measured. Few studies of producers and/or households in developing countries.
- *Economy-wide*: Diverse modelling studies suggest 30% to >100%
  - *But*: Depends on nature and location of energy efficiency improvement. Sensitive to assumptions. Assumes only 'pure' energy efficiency improvements
- Variable, significant and probably larger than current studies suggest

Source: Sorrell 2007

…but their magnitude is an empirical question



Source: Sorrell 2007

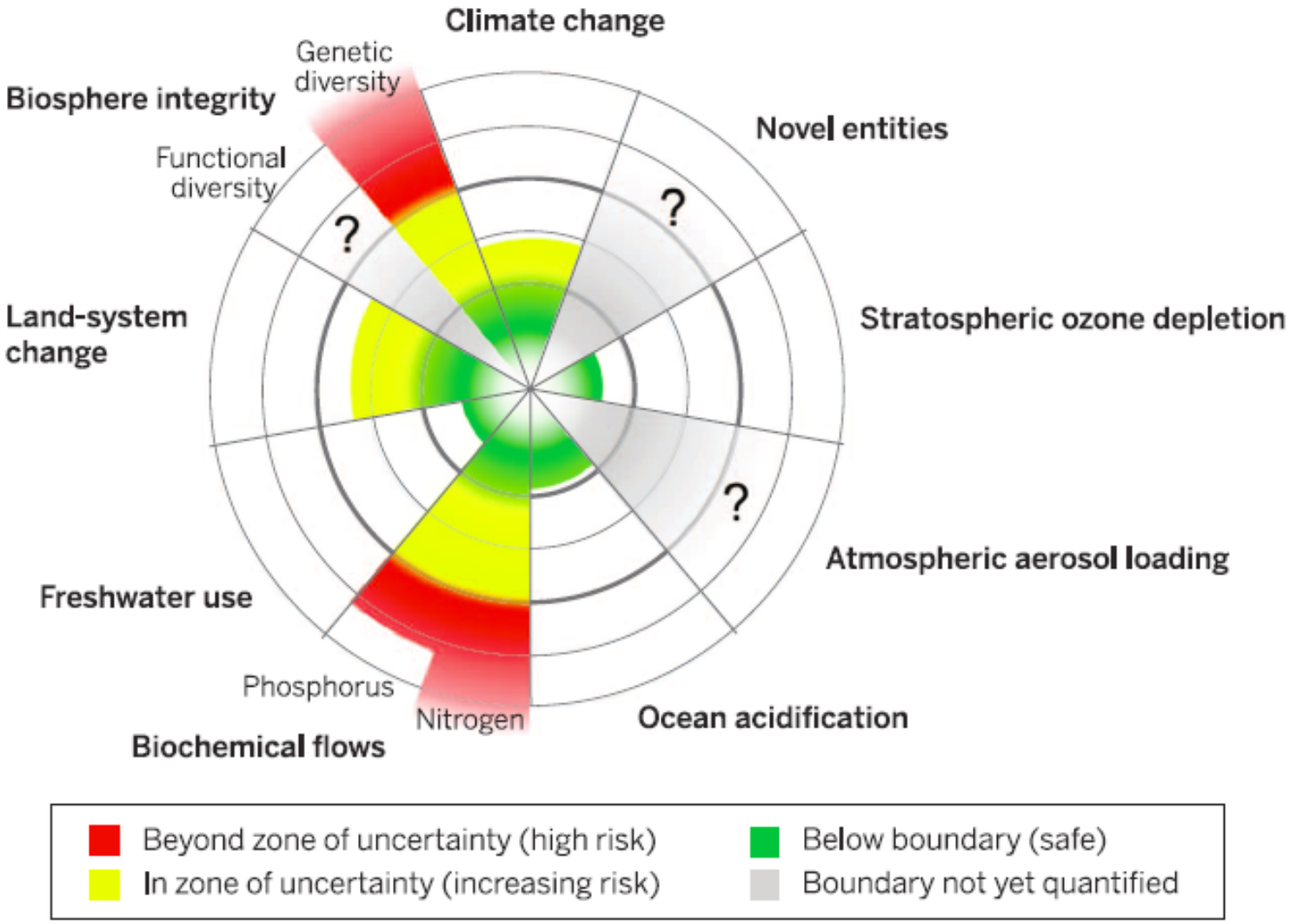
Empirische Schätzung von Rebound Effekten

Author	Effects captured	Efficiency or sufficiency	Area of consumption	Estimated rebound effects
Lenzen & Day (2002)	Income	Efficiency & Sufficiency	Food; heating	45-123%
Alfreddson (2004)	Income	Sufficiency	Food; travel; utilities	7-300%
Brannlund (2007)	Income and Substitution	Efficiency	Transport; utilities	120-175%
Mizobuchi (2008)	Income and Substitution	Efficiency	Transport; utilities	12-38%
Thiesen et al (2008)	Income	Sufficiency	Food	~200%
Kratena (2010)	Income and Substitution	Efficiency	Transport; heating; electricity	37-86%
Chitnis *et al* (2011)	Income	Sufficiency	Transport, heating, food	7-51%
Thomas (2011)	Income	Efficiency	Transport, electricity	7-25%
Murray (2011)	Income	Efficiency & sufficiency	Transport, lighting	5 – 40%

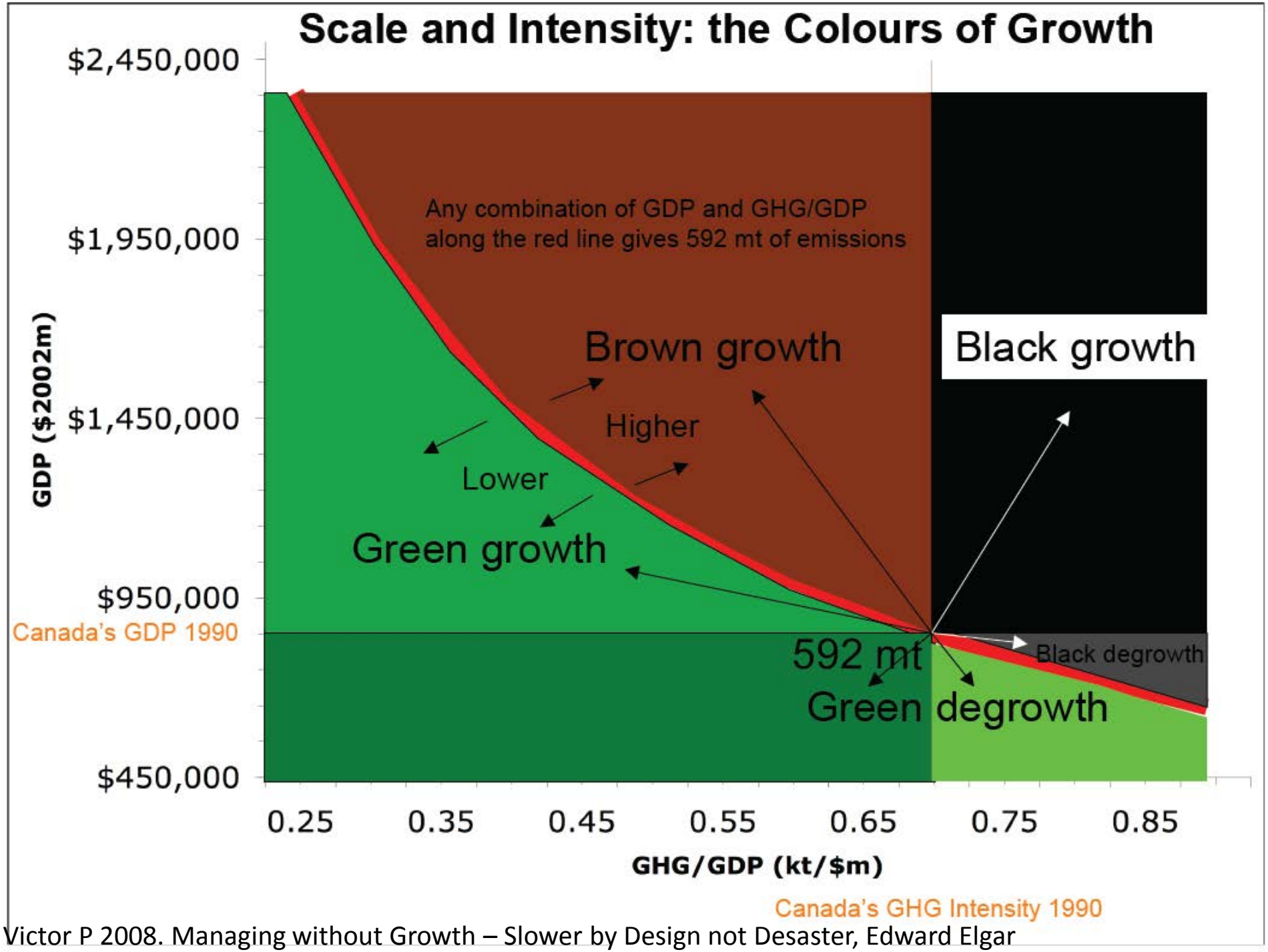
Note: Diverse approaches and methodologies weaknesses; results may refer to energy, carbon, GHG

Quelle: Sorrell (2011)

Earth system boundaries and human interference

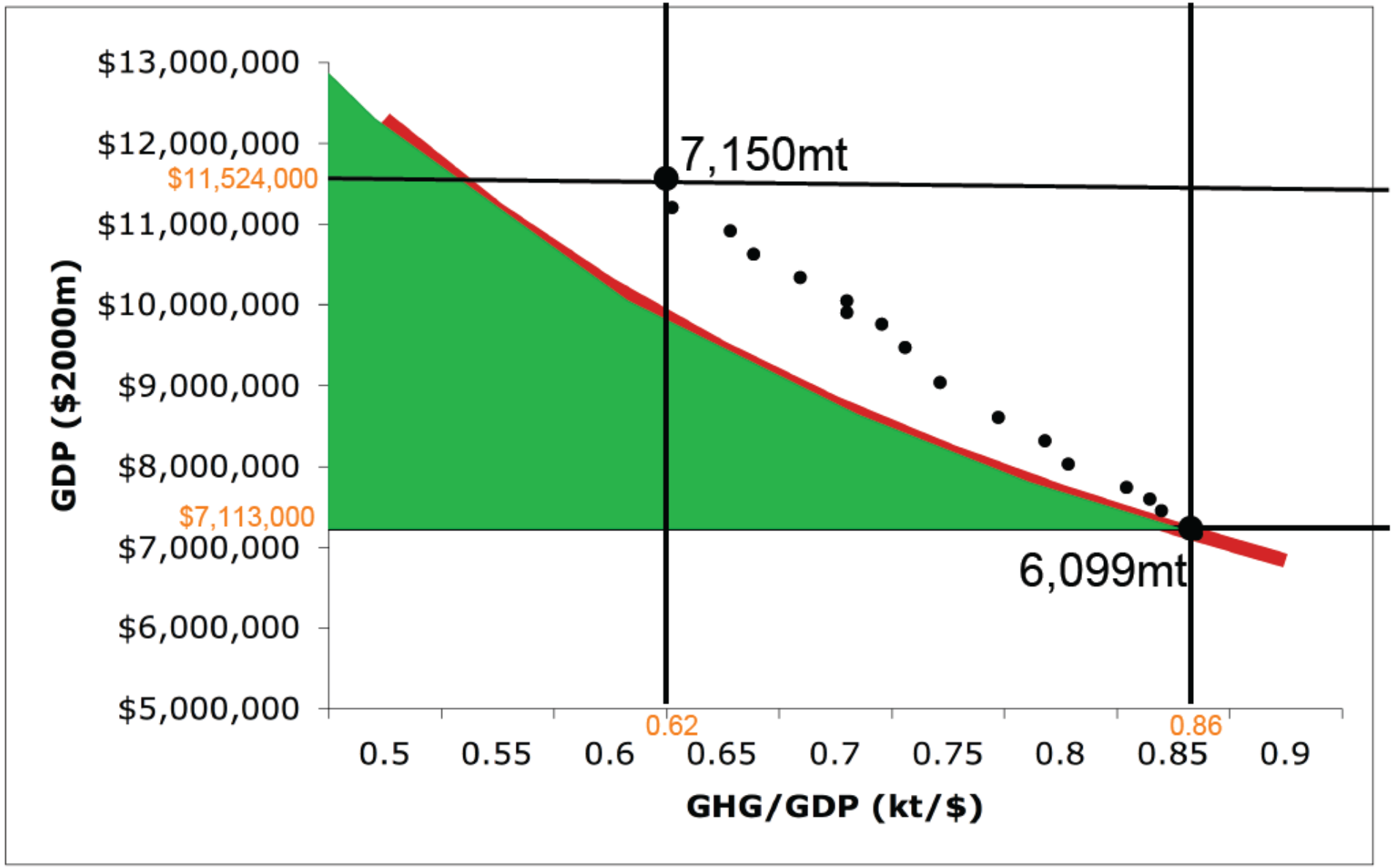


Source: Steffen et al. 2015



Victor P 2008. Managing without Growth – Slower by Design not Desaster, Edward Elgar

USA's Economic Growth
Scale and Intensity 1990-2007



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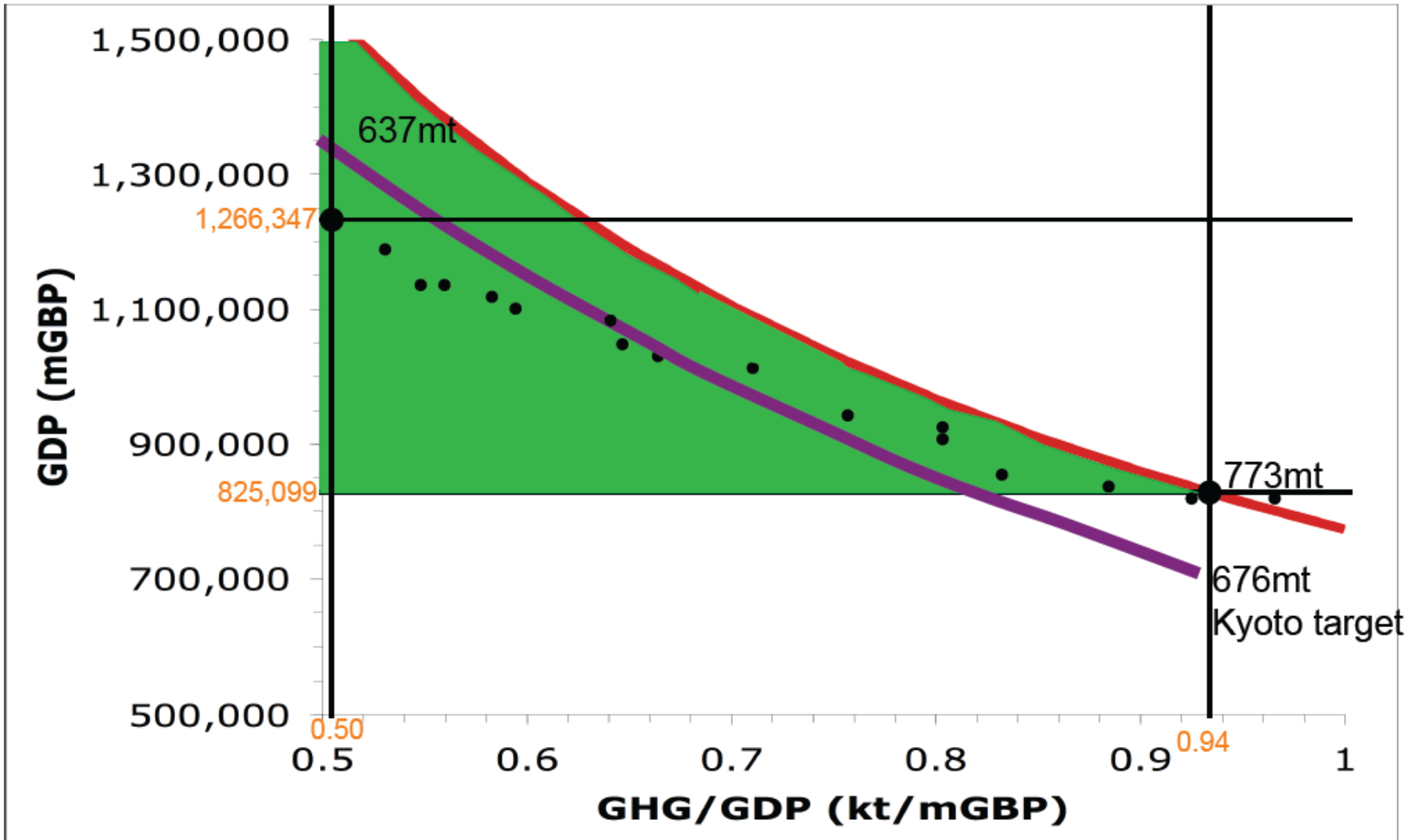

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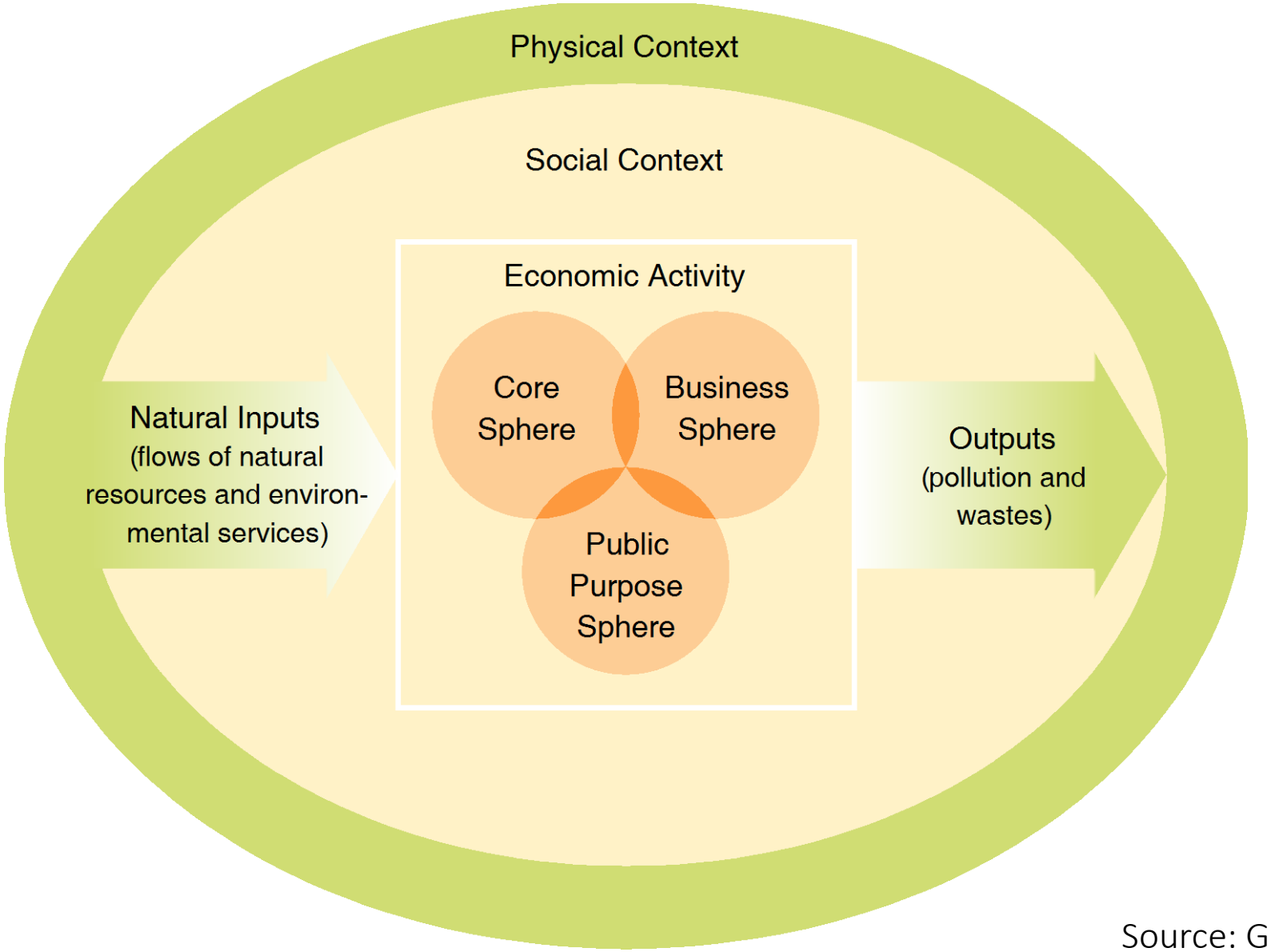
Economics in Context



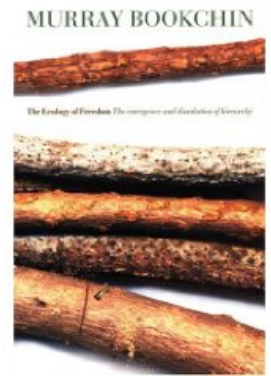
Source: Goodwin 2003

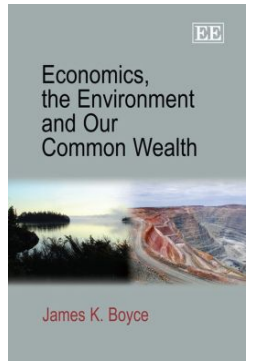
Warum ökologisch korrekter Konsum die Umwelt nicht retten kann

- Armin Grünwald:
  - Sie trennen Ihren Müll, kaufen Gemüse aus der Region und fahren einen Kleinwagen. Aber was, wenn dieses Handeln der Umwelt wenig oder gar nichts nützt?
  - Mehr und mehr wird die Verantwortung für eine nachhaltige Entwicklung in den privaten Bereich abgeschoben – das kann im besten Fall wenig zielführend und im schlimmsten sogar kontraproduktiv sein.
  - Denn Nachhaltigkeit ist eine Aufgabe der politischen Systeme.
  - **Das heißt nicht, dass der einzelne Mensch in diesem Geschehen keinen Platz hat.**
  - Seine Aufgabe ist es aber, politisch für die Nachhaltigkeit einzutreten – jenseits von Stromsparen und ökologisch korrektem Konsum.
- Gordon Walker: Beyond individual responsibility. In: Social practices, intervention and sustainability
- **Wir brauchen soziale Infrastrukturen, die nachhaltiges Handeln unterstützen**

Social-ecological nexus

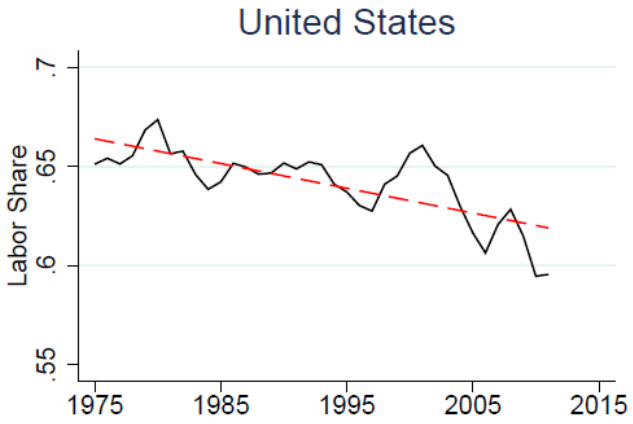
- ”All ecological projects (and arguments) are simultaneously political-economic projects (and arguments) and vice versa. Ecological projects are never socially neutral any more than socio-political arguments are ecologically neutral” (Harvey 1993).
- Bookchin: “The way human beings deal with each other as social beings is crucial to adressing the ecological crisis” (Bookchin 1993).
- Social ecology (Bookchin, Ostrom, Boyce): environmental challenges are truly social problems that arise largely because of income and power inequality and can find their true resolution by putting forward justice principles and building good institutions.
- Eloi Laurent - Building the “social-ecological state”

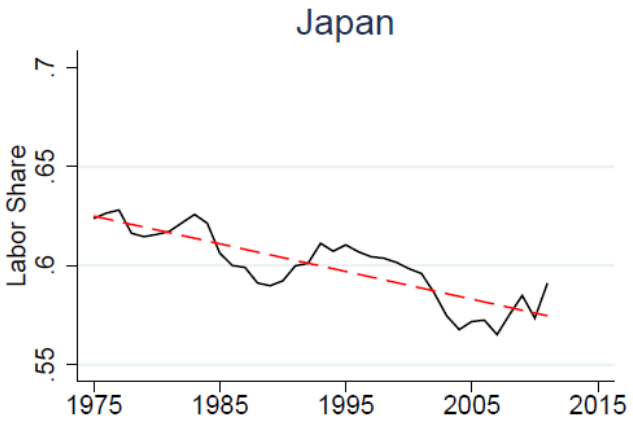


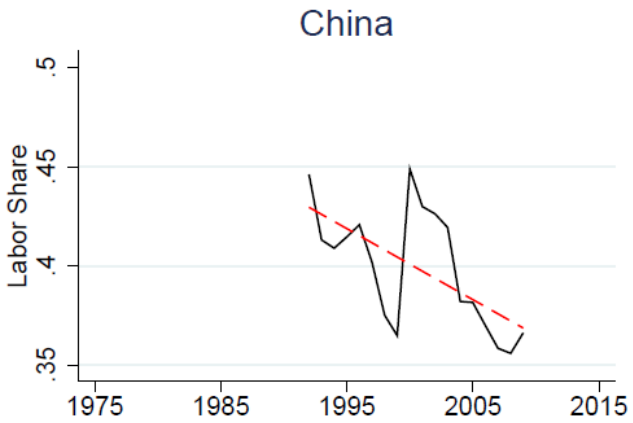


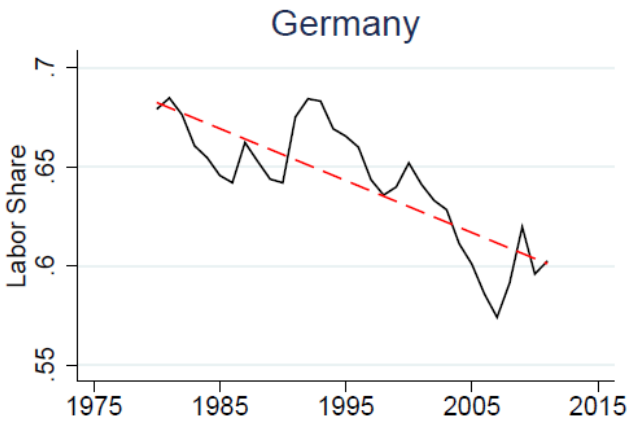
Some empirical observations

Declining labour shares – globally and in largest economies



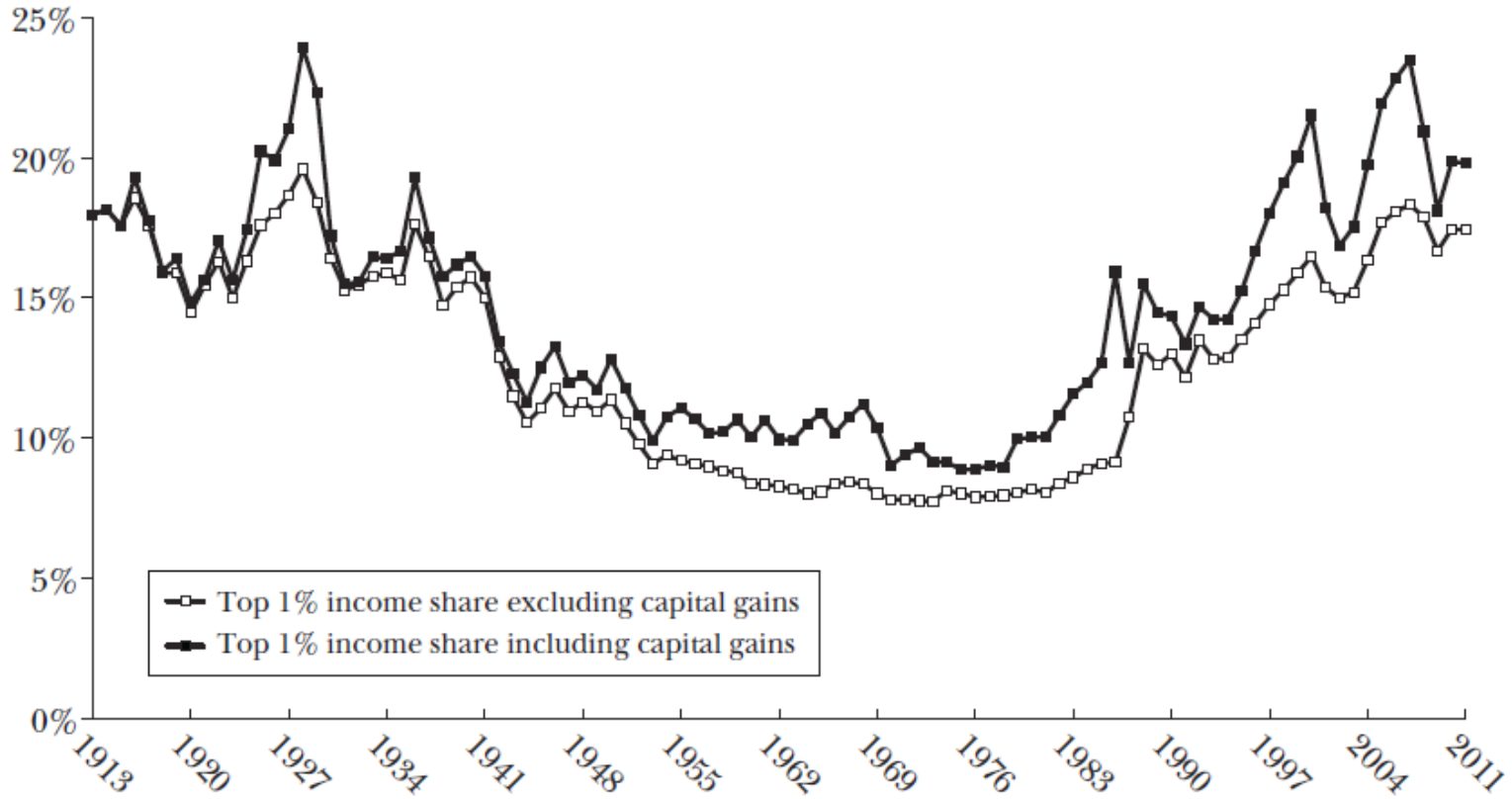






Source: Karabarbounis, Neiman 2013

Top 1 Percent Income Share in the United States

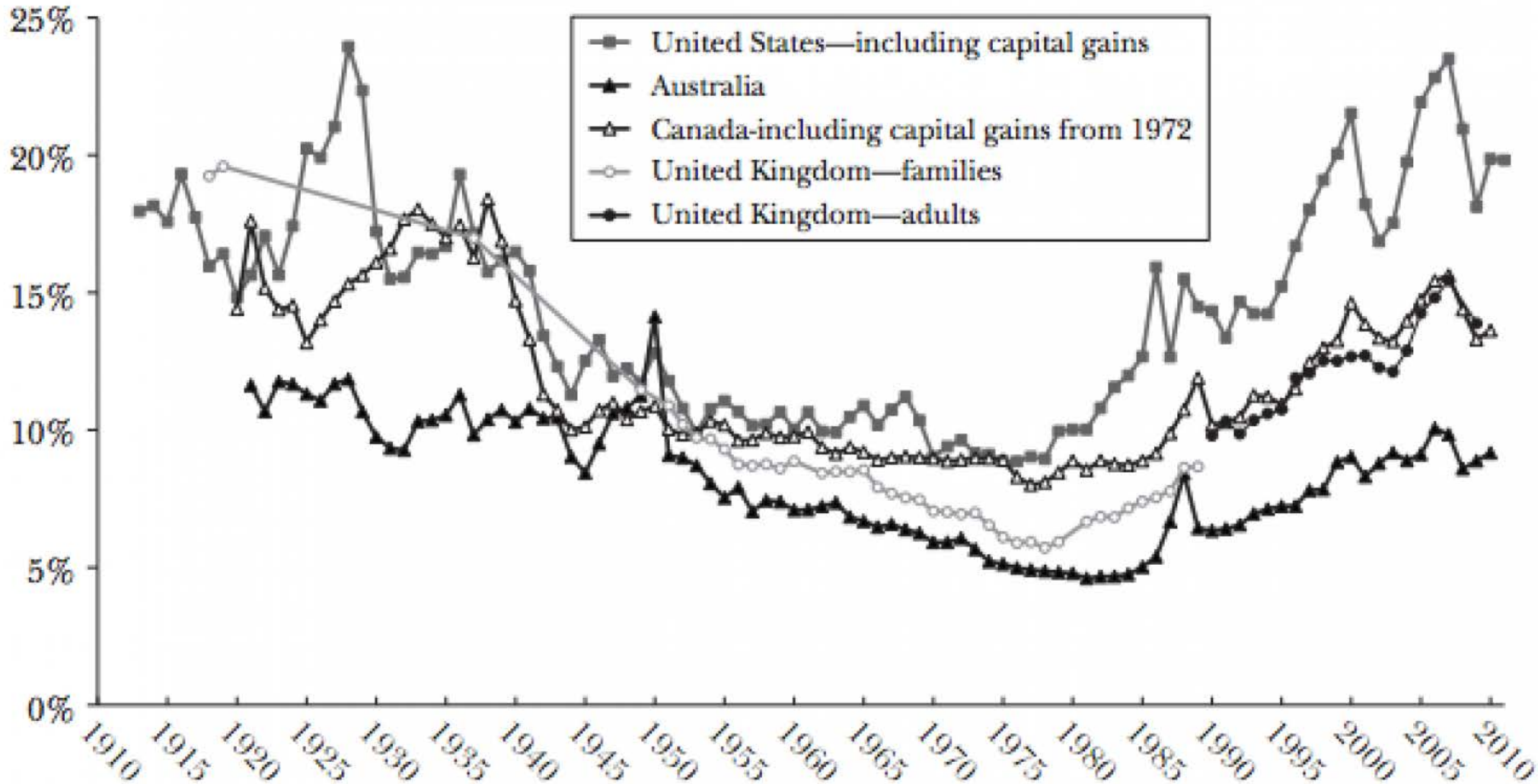


Source: Source is Piketty and Saez (2003) and the World Top Incomes Database.
Notes: The figure reports the share of total income earned by top 1 percent families in the United States from 1913 to 2011. Income is defined as pre-tax market income; it excludes government transfers and nontaxable fringe benefits. The figure reports series including realized capital gains (solid squares) and series excluding realized capital gains (hollow squares).

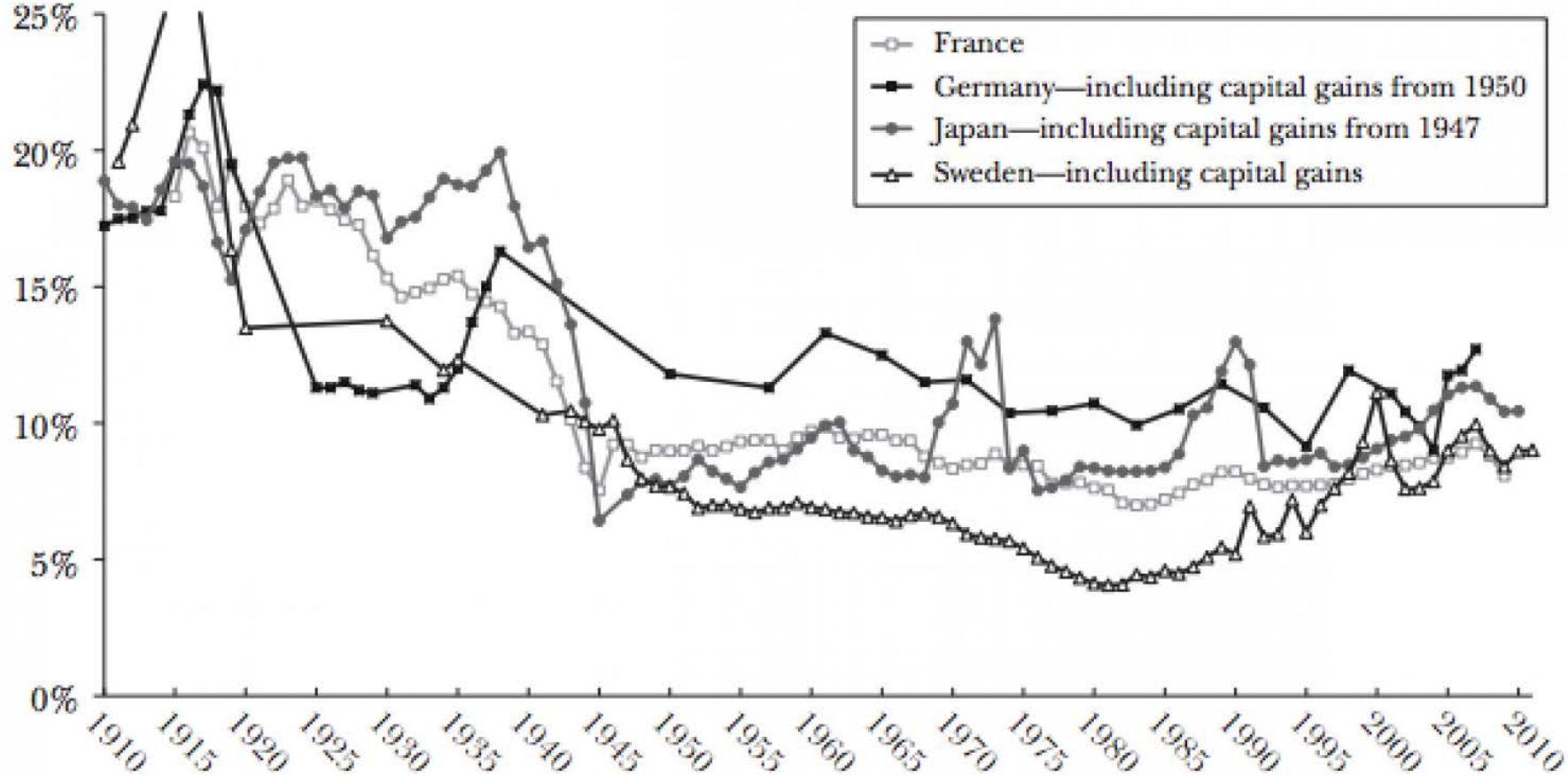
Source:
Alvaredo, F., A. B. Atkinson, T. Piketty and E. Saez (2013). "The Top 1 Percent in International and Historical Perspective." Journal of Economic Perspectives **27**(3): 3-20.

The Evolution of the Shares of the Top 1 Percent in Different Countries

A: Top 1 Percent Income Shares in English-speaking Countries (U-Shape)



B: Top 1 Percent Income Shares in Continental Europe and Japan (L-Shape)



Source: The World Top Incomes Database.
Notes: The figure reports the share of total income earned by the top 1 percent in four English-speaking countries in panel A, and in four other OECD countries (Japan and three continental European countries) in panel B. Income is defined as pre-tax market income. The estimates for Australia include realized capital gains partially and at varying degrees over time.

Source:
Alvaredo, F., A. B. Atkinson, T. Piketty and E. Saez (2013). "The Top 1 Percent in International and Historical Perspective." Journal of Economic Perspectives **27**(3): 3-20.

Annual working hours since 1870

	1870	1920	1950	2000
US	2600	2300	2000	1900
UK	2700	2400	2100	1700
France	3100	2500	2100	1500
Germany	3200	2600	2100	1500

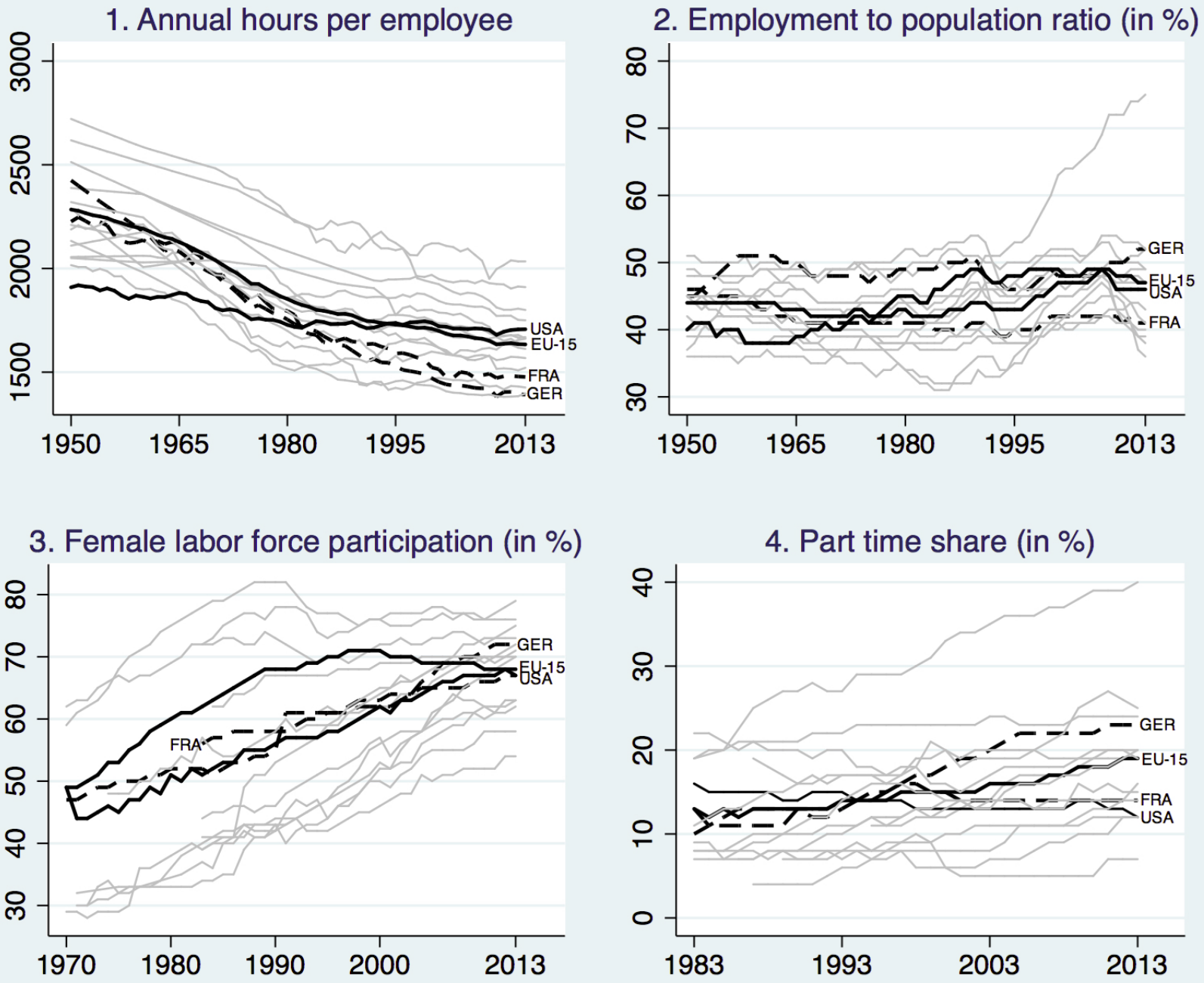
Source: Koch 2015, based upon Huberman, figures rounded

Average annual hours actually worked in selected countries and GDP

	Hours worked						GDP/capita	
	2000		2013		2013-2000		2013	2013/2000
	Hours	Rank [1]	Hours	Rank [1]	Abs.Diff.	Rank [1]	Euro at PPS	% p.a.
Netherlands	1435	17	1380	17	-55	6	34.868	1.9
Germany	1471	15	1388	16	-83	11	32.552	2.7
Denmark	1468	16	1411	15	-57	7	33.070	2.0
France	1535	14	1489	14	-46	4	28.359	1.8
Switzerland	1674	12	1585	13	-89	13	43.376	2.9
Sweden	1642	13	1607	12	-35	3	33.713	2.2
Austria	1842	7	1623	11	-219	17	34.051	2.2
Spain	1731	10	1665	10	-66	8	25.371	2.3
UK	1700	11	1669	9	-31	2	28.896	1.5
Japan	1821	9	1735	8	-86	12	27.362	1.5
Italy	1861	6	1752	7	-109	16	26.460	1.0
USA	1836	8	1788	6	-48	5	40.010	1.8
Turkey	1937	5	1832	5	-105	15	14.030	4.4
Poland	1988	3	1918	4	-70	9	17.894	5.2
Russia	1982	4	1980	3	-2	1		
Greece	2130	2	2037	2	-93	14	19.320	1.2
Mexico	2311	1	2237	1	-74	10	12.729	3.0
EU (11 countries)	1709	10	1631	11	-79	9	28.596	2.2

[1] Highest hours worked ranked 1.

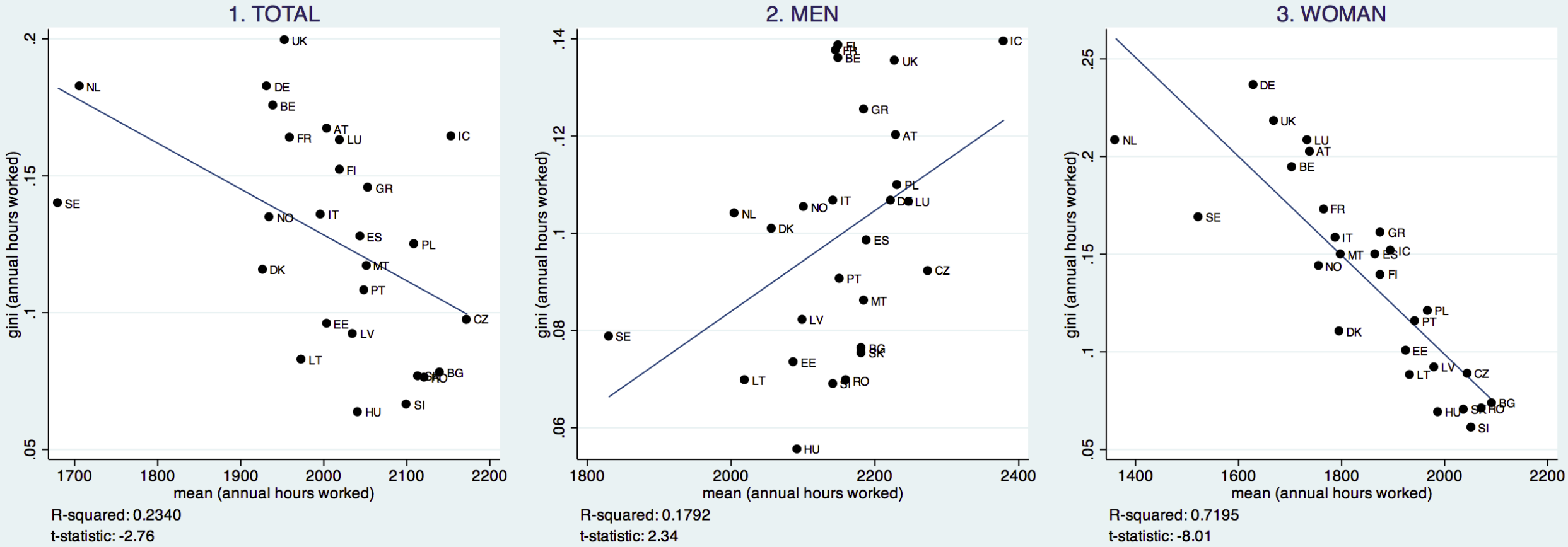
Source: OECD, Eurostat.



Source: Plot 1 and 2: The Conference Board total Economy Database 2015, annual hours include paid overtime and exclude paid hours that are not worked due to sickness, holidays. Employment to population ratio: persons employed/midyear population. Plot 3 and 4: OECD Labor Force Statistics 2015. Part-time employment is defined as people in employment (employees and self-employed) who usually work less than 30 hours per week in their main job.

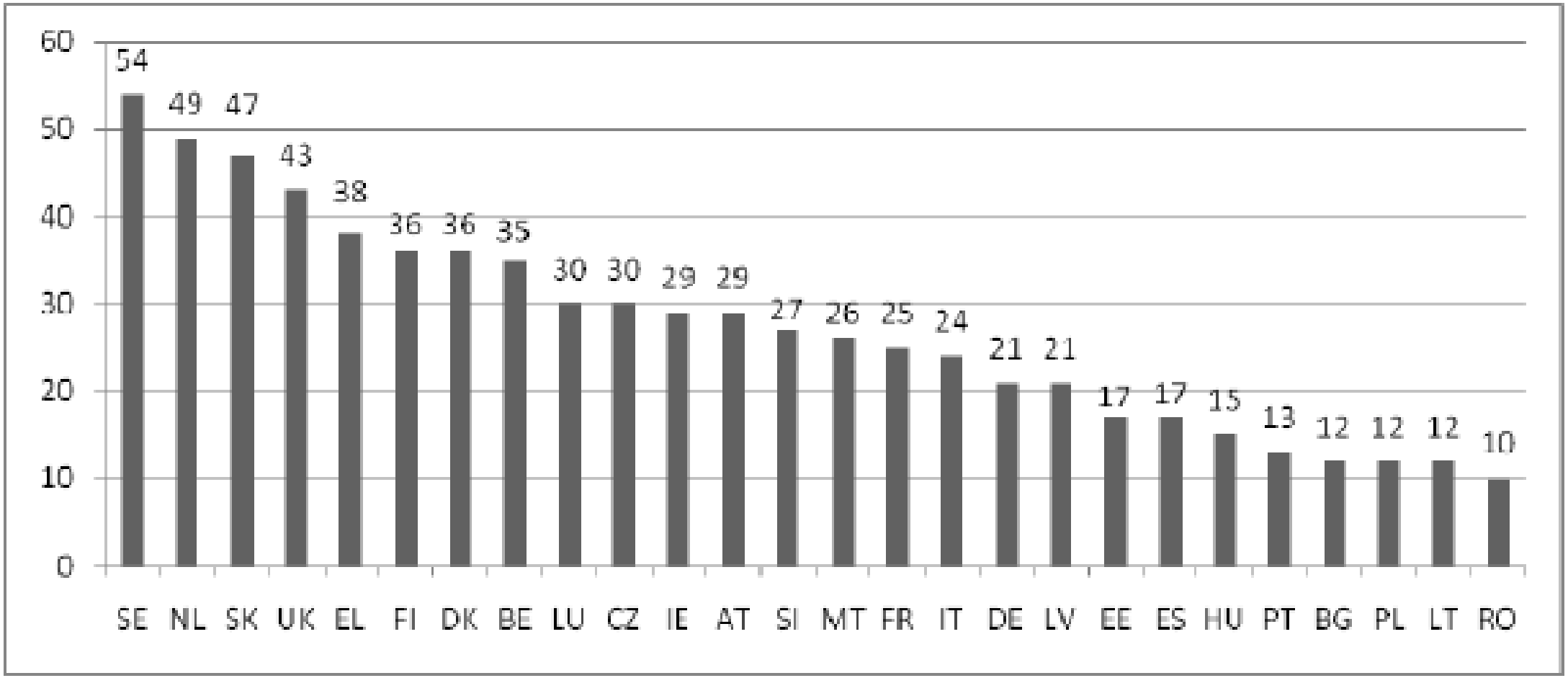
Source: Zwickl, Dissbacher, Stagl (forthdoming)

Average hours worked and inequality in hours worked in the EU



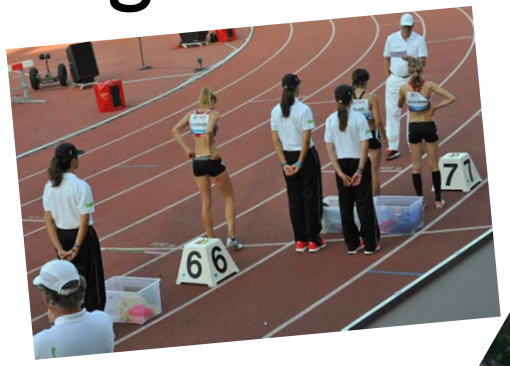
Source: Own calculations using EU SILC 2010. The Ginis were calculated using Stata's ineqdeco package. Following Salverda and Checci (2015) we restricted the sample to the population in the relevant working age (20-64 years old) and to the labor force (employed and unemployed by self-definition). Yearly hours worked were computed by multiplying the reported number of weekly hours worked (PL060 – numbers of hours usually worked per week in main job) with the months spent in the labor market (PL073-74-74-76-80 – number of months spent at full-time/part-time work as employee/self-employed/unemployed). Source: Zwickl, Disslbacher, Stagl (forthdoming)

Volunteering in at least one association (except for trade unions and political parties), 1999/2000, according to the European Values Study



Source: European Values Study, 1999/2000, as reported by Bogdan & Mălina Voicu in 2003.

The different faces of volunteering



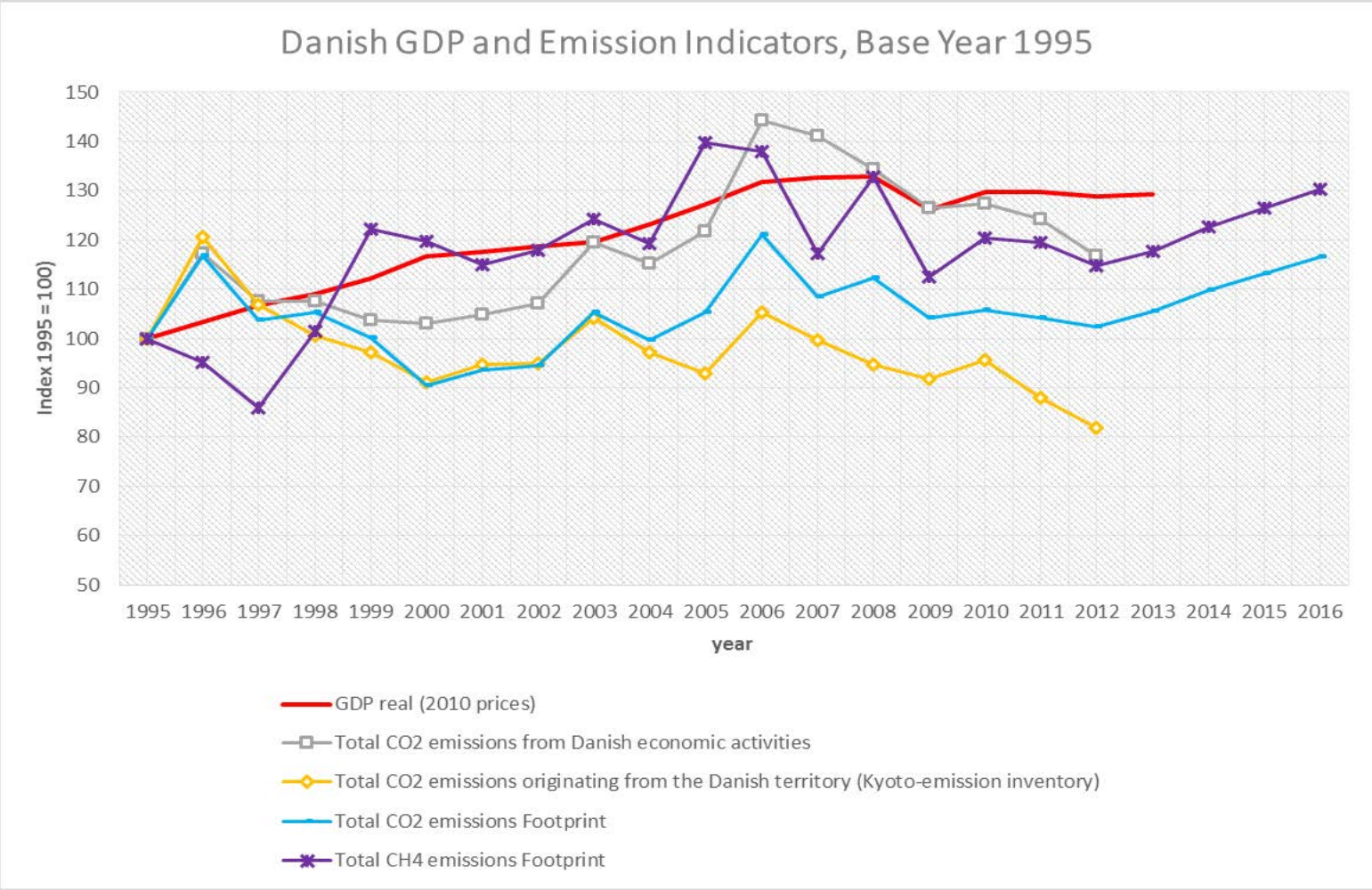
In search of cases of sustainable work

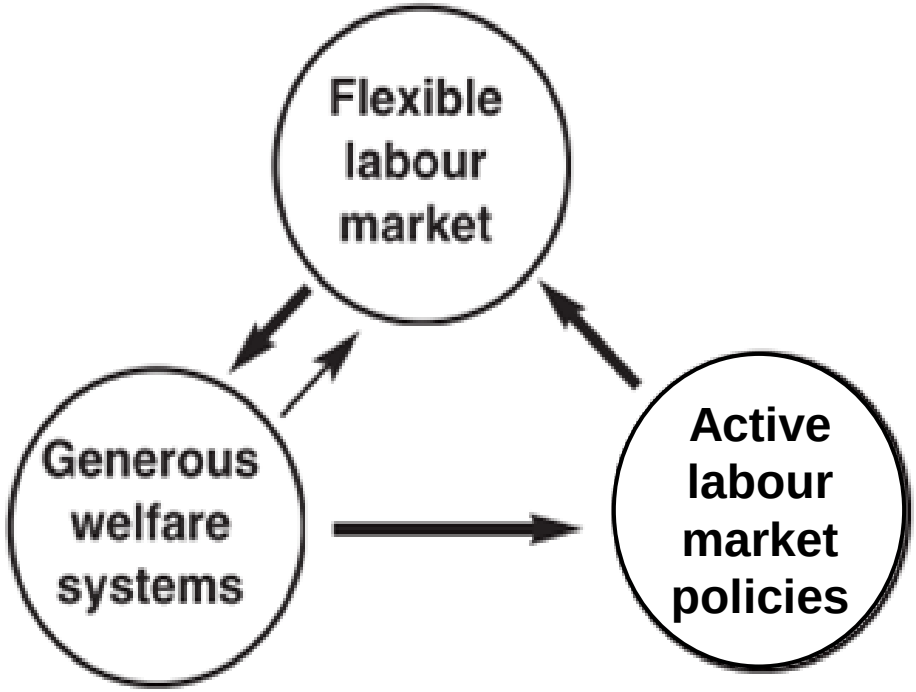
Are there policies in place around Europe that support a socio-ecological transformation of work?

FP7 project: www4Europe

- Austria (Christian Hödl)
- Denmark (Heidi Leonhardt)
- Greece (Anran Luo)
- Netherlands (Desirée Bernhardt)
- Spain (Lucía Baratech)
- Sweden (Ernest Aigner)
- UK (Ben Curnow)

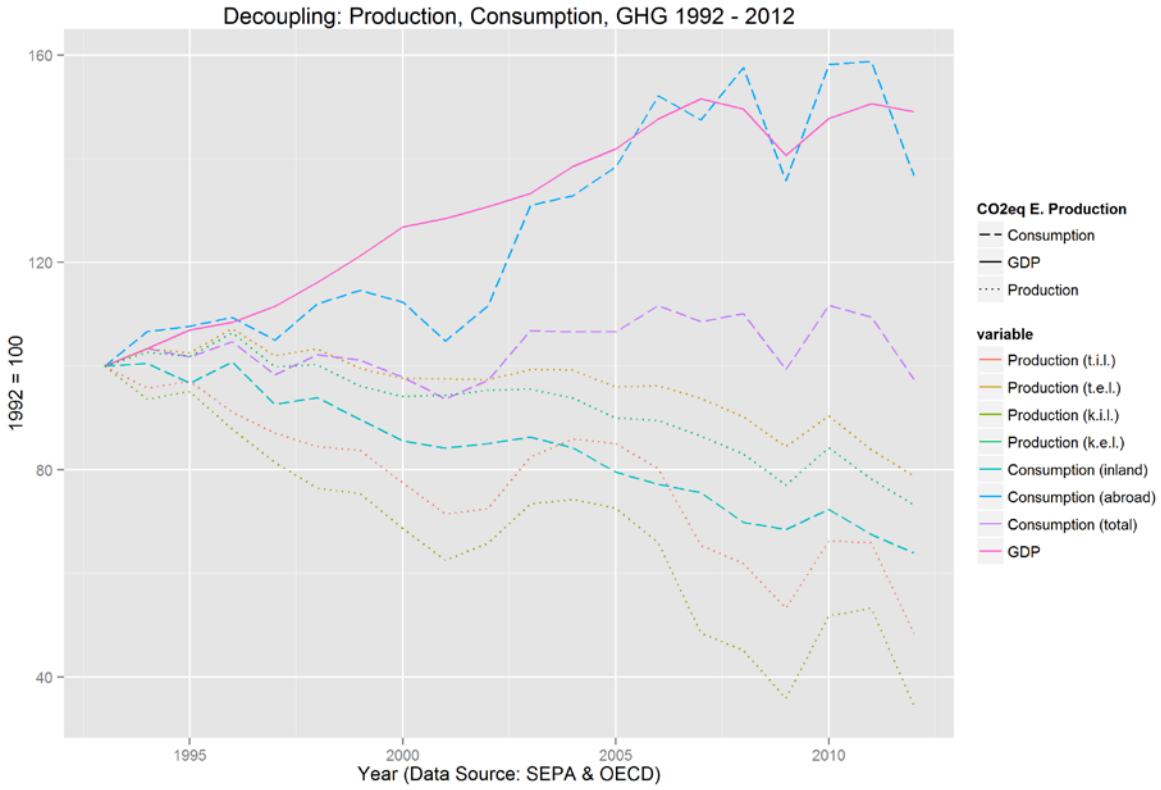
Denmark – a role model for environmental and labour policy? (Heidi Leonhardt)

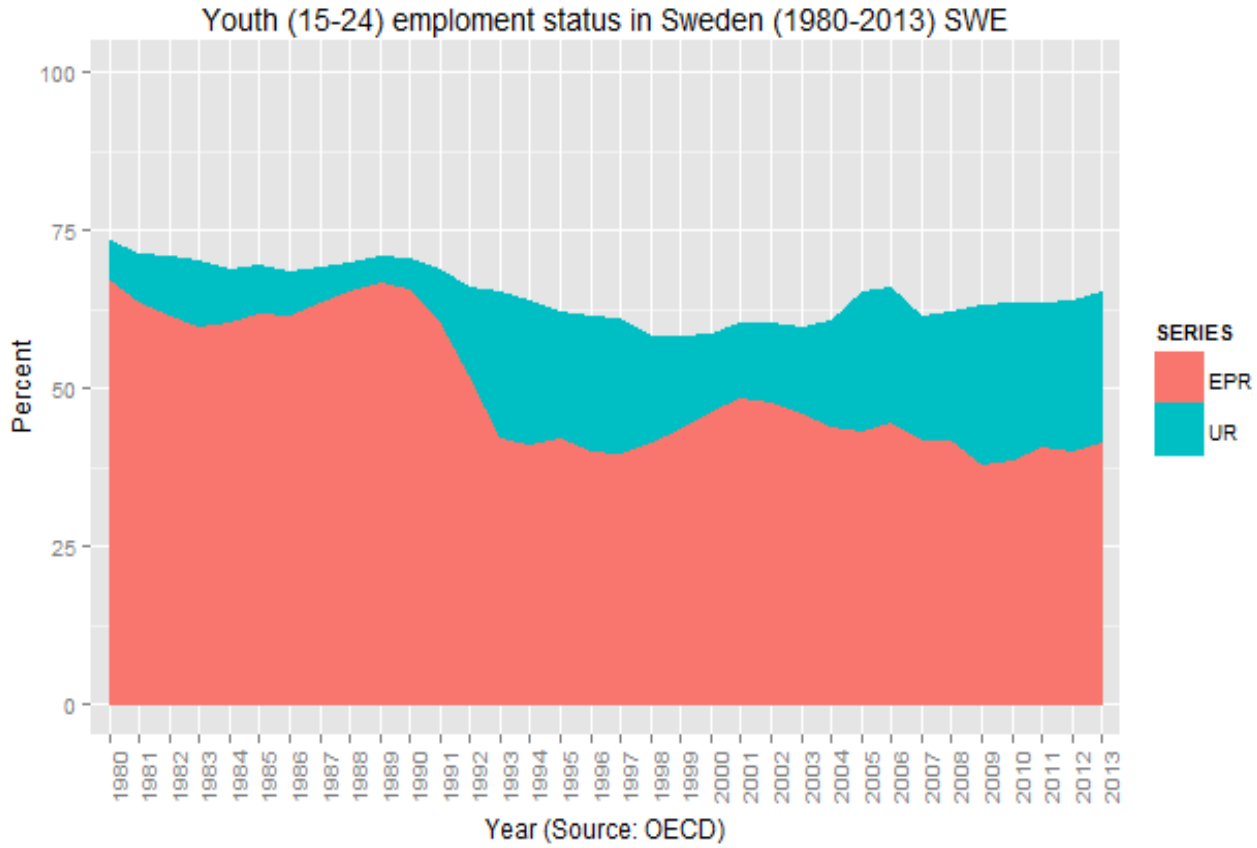




Flexicurity

Sweden – a role model for environmental and labour policy? (Ernest Aigner)





Case studies Vorsorgendes Wirtschaften

- Bürgschaftsbank
- Environment Centre Türnich
- Landwerkstätten (Handicraft Shops)
- Haus der Eigenarbeit
- Forest management (Hatzfeldt-Wildenburg'sche Waldbesitz)
- Kempodium (explore and use cultural, economic and social resources of the region)

Source: Biesecker, A., M. Mathes and S. Schön, Eds. (2000). Vorsorgendes Wirtschaften - Auf dem Weg zu einer Ökonomie des Guten Lebens, Usp-Publishing.

Actors of labour and environmental policies

- Trafo-Labour project funded by the Austrian Climate Fund (KLIEN, ACRP)
- Which role have unions and other workers‘ representatives played in environmental policy in Austria?
- With which policies could they address the social-ecological nexus constructively?
- PI: U Brand (Univ of Vienna)
- WU team: M Soder, H Theine and S Stagl

Worksharing

- length of the work day was already a central topic in Marx' Capital
- "three-hour shifts or a fifteen-hour week" were the logical outcome in Keynes' (1930) vision of saturated capitalism
- In Europe's post-war societies trade unions heavily advocated general working time reductions
- work-sharing programs were designed as short-term crisis measures
- traditional policies to increase employment and equity have relied on economic growth
- negative economic and social consequences, such as an unequal distribution of wages and reduced well-being due to un- and under-employment for some workers and burnout and stress for others
- even the most prominent studies that are often cited to argue against worksharing, can provide no credible evidence of negative employment effects

The consequences of unequal hours worked

- longer working hours of some will reduce the employment opportunities of others
- if longer working hours are viewed as a positional externality, public policy aimed at reducing this externality could be welfare-enhancing
- longer working hours have also been associated with adverse health effects
- mismatch between the actual and preferred hours has been found to reduce life satisfaction, and self-perceived health
- unequal working hours also translate into unequal hourly wages.
- adverse effects of an unequal distribution of paid employment on gender equality in the division of household tasks

Has work-sharing worked? Empirical evidence from history

- Work-Sharing during the Great Depression in the U.S.
- Work-Sharing in the 1980s-2000s
- Work-Sharing in the Great Recession

But wait – what should be aiming for?

- Energy efficiency?
- making do with less (although there is a matter of getting rid of the consumer excess that we don't actually want when we think about it)?
- worksharing?
- what we really really want, what helps us to be whole people and live vibrantly and all that other eudaimonic stuff?

Biesecker and Hofmeister (2010): (Re)productivity

- interconnectedness of human and natural ecosystems
- work as „any mediation process between humans and their environment that generates a result needed by the individual to reproduce her life“

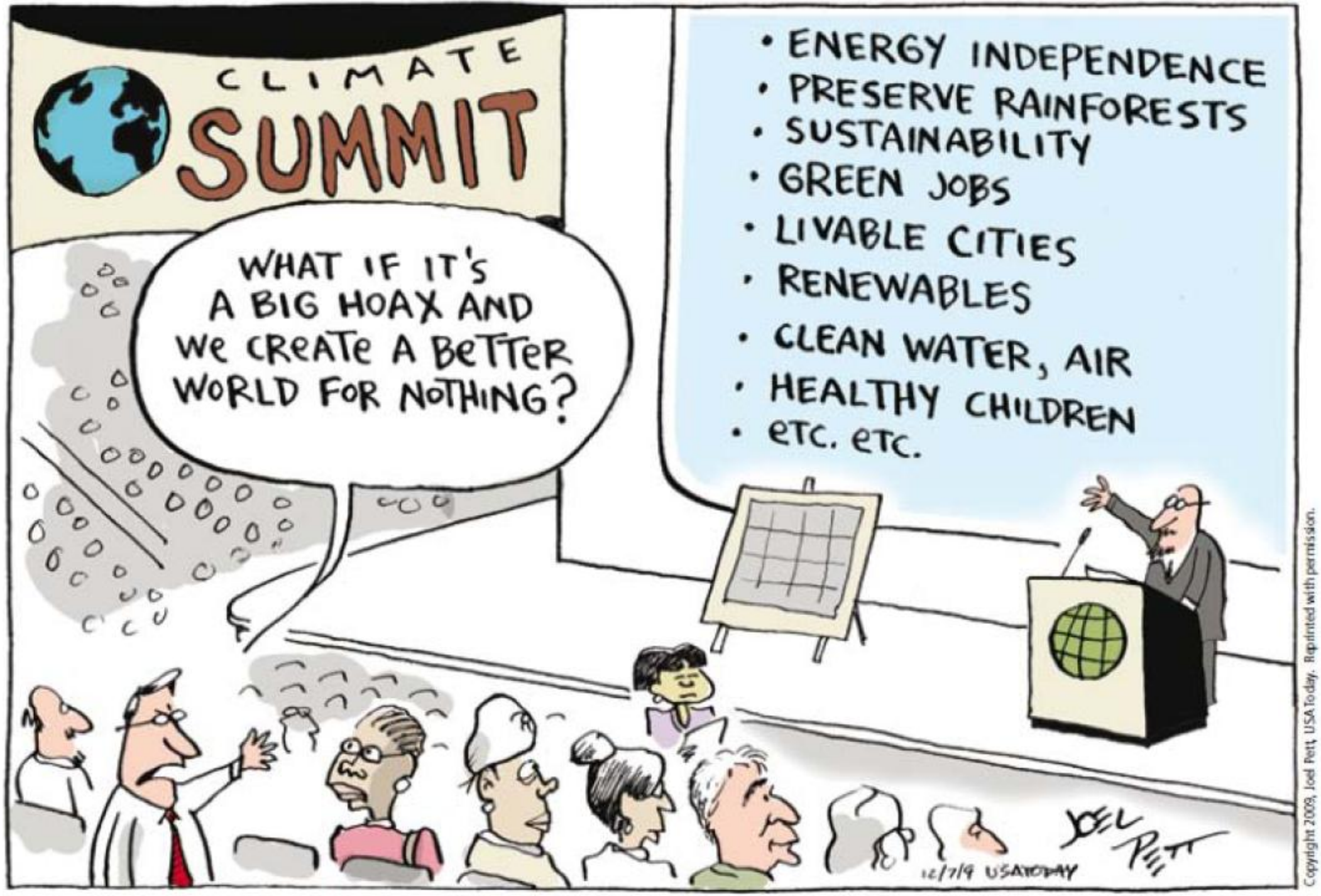
Zukunftsfähiges Arbeiten

- Erwerbsarbeit
- Sorgearbeit
- Freiwillige Arbeit an der Gesellschaft (Bürgerschaft; Engagement)
- Eigenarbeit

“We need a new understanding of work, that integrates the multitude of types of labour that happen outside markets instead of focusing solely on paid work. Moreover, this ‘ensemble’ of work needs to be without hierarchy and ecologically sound. This new understanding of work is then the foundation for social redistribution and a reevaluation of work that includes everyone and overcomes categorizations and degradations based on gender” (Biesecker 2012:1).

Sozial-ökologischer Nexus

- Paradox: je untragbarer Umweltprobleme werden, desto weniger Toleranz herrscht für Sorgen um die Umwelt
- John Maynard Keynes in anderem Kontext: “party of catastrophe” – untragbare Angst verbreiten ohne Lösungen anzubieten, die für die Mehrheit von Bürger/inn/en umsetzbar sind.
- Umweltprobleme sind soziale Probleme, die sich großteils aufgrund von Einkommen und Ungleichheit ergeben.


CLIMATE
SUMMIT
WHAT IF IT'S A BIG HOAX AND WE CREATE A BETTER WORLD FOR NOTHING?
• ENERGY INDEPENDENCE
• PRESERVE RAINFORESTS
• SUSTAINABILITY
• GREEN JOBS
• LIVABLE CITIES
• RENEWABLES
• CLEAN WATER, AIR
• HEALTHY CHILDREN
• ETC. ETC.
12/7/09 USATODAY
JOEL PETT
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Vielen Dank für Ihre Aufmerksamkeit!
Ich freue mich auf Ihre Kommentare und Fragen.

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Einladung: Eröffnung des Forschungsinstituts Economics of Inequality (Freitag, 18. September, 14-17 Uhr im Festsaal 2 der WU Wien)

Einladung: Inaugural Event of the Institute for Ecological Economics (Dienstag, 13. Oktober, 9-17 Uhr im Clubraum der WU Wien)

Zur Info: WU Master of Science in Socio-Ecological Economics & Policy (SEEP)