

Some Common Causes and Responses to the Three Crises: Financial, Energy, Ecosystems.

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Summary

- Current Crises: accidents or creations?
- Some Common Features of the Financial, Climate and Ecosystems crises
- ETR within Good Governance of Financial, Energy and Eco-systems
- The 5 dividends from ETR
- Results of Anglo-German Foundation ETR project
- Political Feasibility of ETSR
- China's Green Revolution?

Financial Crisis-A Surprise or Created?

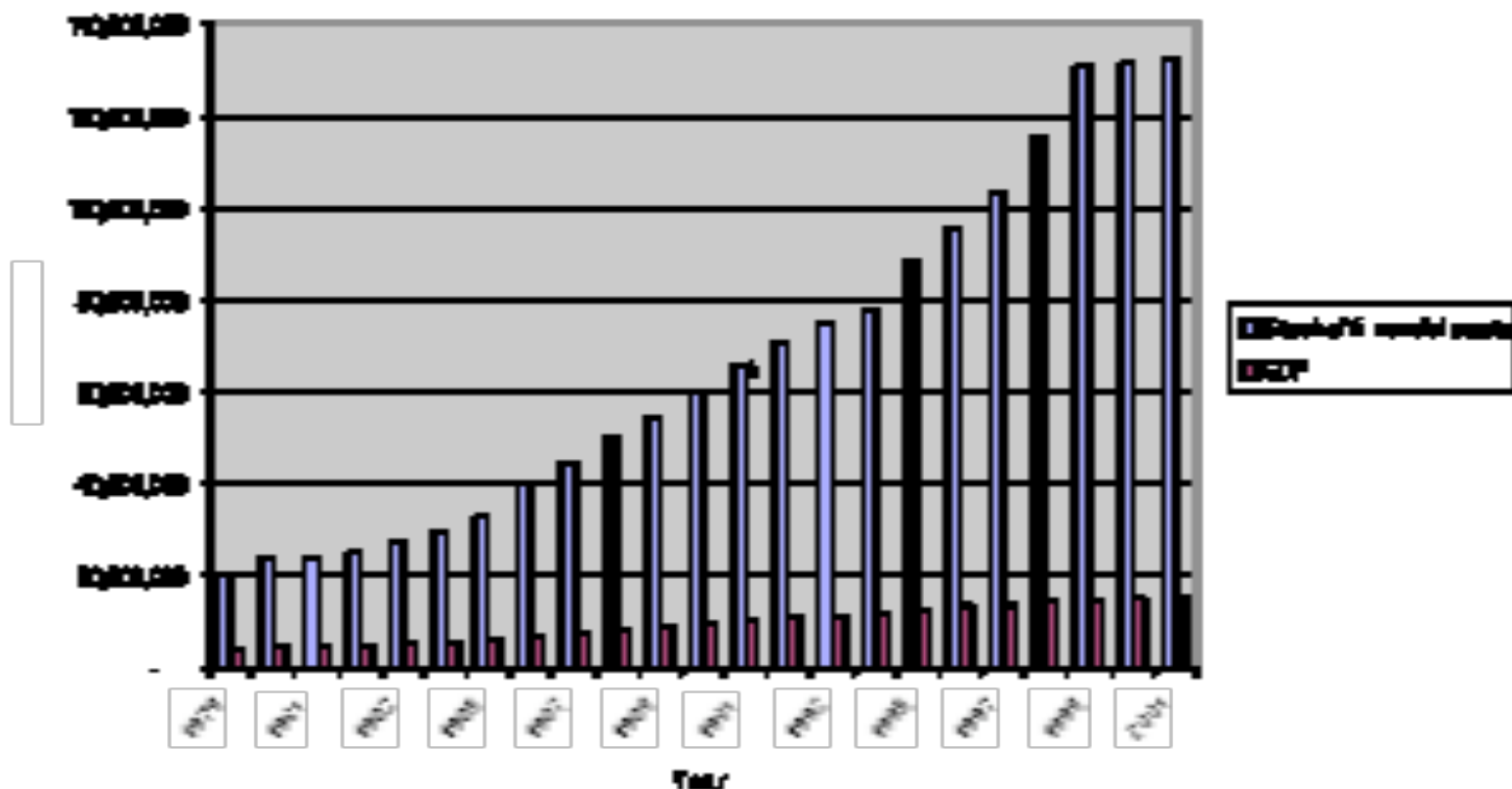
“But even now, there are many who seem to believe they did little wrong: it was a once-in-100-years flood that could not have been anticipated, rather than something they caused and which has occurred repeatedly”.

*Source: Joseph Stiglitz , Professor of Economics, Columbia University.
THE TIMES, Business section, Tuesday January 27 2009*

The Financial meltdown in 07/8 was no accident..

- « The huge growth in the finance sector and the abrogation of control by governments over **the supply of credit** have not happened by accident...they are the result of **deliberate policy decisions** of governments, particularly in the West ».
- (*Real World Economic Outlook, NEF, 2003,*)

GDP and the stock of financial assets in G7 minus Japan and UK



The financial stock in Japan rose from less than six times GDP to roughly 9 times in just one decade, 1980 to 1990, a meteoric rise which may explain the country's equally rapid economic collapse. In the UK, the total stock of financial assets stood at almost 15 times GDP² in 2000.

© nef (new economics foundation), *Real World Economic Outlook*, 2003

Chart extracted from *Real World Economic Outlook, the legacy of globalization: debt and deflation*, edited by Ann Pettifor for nef (the new economics foundation),

published by Palgrave Macmillan, England, 2003.

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Source: US Federal Reserve: Flow of Funds Accounts; Statistics Canada: National Balance Sheet Accounts by Sector; Banque de France: National Financial Accounts; OECD: National Financial Accounts; Banca d'Italia: Supplements to the Statistical Bulletin, Financial Accounts; Deutsche Bundesbank: Financial Accounts for Germany 1991-2001; IMF: International Financial Statistics.

Financial Meltdown foreseen..in 2003..

- « This **credit bubble** based on nothing more than expectations, cannot be maintained forever, **There will be a crash.** People will no longer be able to pay their debts, **particularly if the values of the assets they hold against those debts start to fall**, as has already happened with equities, and will shortly spread to corporate debt and personal debt. The effect on people in both rich and poor countries will be profound »
- *(Real World Economic Outlook, NEF, 2003,p29)*

And in 1997...

"By 2007 Britain and most of the other industrially advanced economies will be in the throes of frenzied activity in the land market...

Land prices will be near their 18-year peak... on the verge of the collapse that will presage the global depression of 2010.

The two events will not be coincidental: the peak in land prices not merely signalling the looming recession, but being the primary cause of it."

Fred Harrison in "The Chaos Makers", 1997

Fundamental Problems at Heart of the 3 Crises?

- ***“Is there a flaw in the plumbing, and all we need to do is call a plumber in to fix the leak? Or has this crisis revealed more fundamental problems, which will require more profound changes in our economic system?”***

Stiglitz Jan 27th 09

SOME COMMON FEATURES OF THE 3 CRISES: Financial, Energy/Climate, Ecosystems

- **CAPITALS DESTROYED WHILST MAKING MONEY FROM MONEY**
- **DEBTS CREATED BUT PASSED ON TO OTHERS**
- **OVER CONSUMPTION ENCOURAGED BY FALSE MARKET PRICES**
- **INTRANSPARENT AND ILL UNDERSTOOD TRANSACTIONS AND THEIR**

IMPACTS

- **NOT ACCOUNTING FOR WHAT MATTERS**
- **EARLY WARNINGS IGNORED.**

COMMON FEATURES	<u>FINANCIAL CRISIS</u>	<u>ENERGY/CLIMATE CRISIS</u>	<u>NATURAL RESOURCES CRISIS</u>
1.) CAPITALS DESTROYED			
· Financial?	YES	YES	YES
· Human ?	YES	YES	YES
· Natural ?	YES	YES	YES
· Social ?	YES	YES	YES
2.) RISKS/ DEBTS PASSED ON TO CURRENT/ FUTURE 'OTHERS'?	YES	YES	YES

COMMON FEATURES	<u>FINANCIAL CRISIS</u>	<u>CLIMATE CRISIS</u>	<u>NATURAL RESOURCES CRISIS</u>
3.) MARKET PRICES: Cover All costs?	NO	NO	NO
Reflect real risks?	NO	NO	NO
4.) TRANSPARENT TRANSACTIONS?	NO	NO	NO
5.) ACCOUNTING FOR WHAT MATTERS?	NO	NO	NO
6.) EARLY WARNINGS HEDED?	NO	NO	NO
ROBUST AND SUSTAINABLE SYSTEMS?	NO	NO	NO

SOME FEATURES OF GOOD GOVERNANCE:

- **MAINTAINING CAPITALS**
- **MEETING NEEDS**
- **CONSUMING RESOURCES WISELY**
- **PUBLIC PARTICIPATION**

<u>GOOD GOVERNANCE</u>	<u>FINANCIAL SYSTEMS</u>	<u>ENERGY SYSTEMS</u>	<u>ECO-SYSTEMS</u>
CONSUMING FLOWS WHILST MAINTAINING QUALITY AND QUANTITY OF STOCKS	CONSERVATIVE ASSET/ DEBT RATIOS	FROM STOCKS OF FOSSIL FUELS TO FLOWS OF RENEWABLES	MAINTAINING NATURAL CAPITAL STOCKS WHILE SECURING FLOWS OF ECO-SYSTEM SERVICES
ALL RISKS AND DEBTS INTERNALISED INTO MARKET PRICES.	REALISTIC ASSET/ DEBT PRICING	EXTERNALITIES INTERNALISED INTO PRICES	EXTERNALITIES INTERNALISED INTO PRICES
<i>ECO-NOMIC TAX & SUBSIDY REFORM TO FINANCE "GREEN NEW DEAL", & MEET AGEING POPULATION PROBLEMS</i>	<i>"TOBIN TAX" ON CURRENCY & COMMODITIES SPECULATION?</i>	<i>FROM TAXING PEOPLE TO TAXING ENERGY AND RESOURCES</i>	<i>FROM TAXING PEOPLE TO TAXING ENERGY AND RESOURCES</i>
TRANSPARENT TRANSACTIONS	UNDERSTANDABLE FINANCIAL PRODUCTS	MARKET PRICES REVEALING "ECOLOGICAL TRUTH"	MARKET PRICES REVEALING "ECOLOGICAL TRUTH"

<u>GOOD GOVERNANCE</u>	<u>FINANCIAL SYSTEMS</u>	<u>ENERGY SYSTEMS</u>	<u>ECO-SYSTEMS</u>
ACCOUNTING FOR WHAT MATTERS	REAL DEBT / ASSET RATIOS	ALL COSTS/ SUBSIDIES	ECOSYSTEM SERVICES AND ASSETS
	“B E Y O N D G D P”		
LATE LESSONS FROM EARLY WARNINGS?	“INCONVENIENT TRUTHS” ACTED ON		
COMMUNITY LEVEL INITIATIVES	MICRO-FINANCE	DISTRIBUTED NETWORKS	CO-MANAGEMENT OF ECO-SYSTEMS
DIVERSE DISTRIBUTED, PARTICIPATORY, RESILIENT AND SECURE SYSTEMS?	YES	YES	YES

Taxes are good.....

- « *Taxes are the price we pay for a **civilised society*** » (F.D. Roosevelt)
- ETR can help deal with « ***the mean streets and withered lives*** » of economic recession (Pigou 1926 - father of Welfare Economics)

1996 EEA Report on Green Taxes:the 4 dividends from ETR.

"In its recent report the EEA concluded that "environmental taxes..could deliver improvements in four areas of public policy

- ***environment;***
- ***innovation & competitiveness;***
- ***employment ;***
- ***and the tax system"***

(Sustainability Panel, Annual Report to UK Government, '97)

The 5th dividend: ETR helps with the Ageing Population Expenditure/ Revenue problem....

- Increasing public expenditure on pensions & health care for the elderly
- Declining income tax base-both workers (population change) and companies(capital mobility and tax havens)
- But Expanding lifetime consumption base (ageing population, longer lives)
- So burden sharing between the generations is needed: helped by
- ETR-from labour taxes to « consumption » taxes

AN AGEING EU POPULATION AND A PUBLIC EXPENDITURE CRUNCH.

The old- age dependency ratio (people aged 65 or above relative to the working-age population aged 15-64) is projected to increase from 25.4% to 53% in the EU over the projection period 2008-2060.

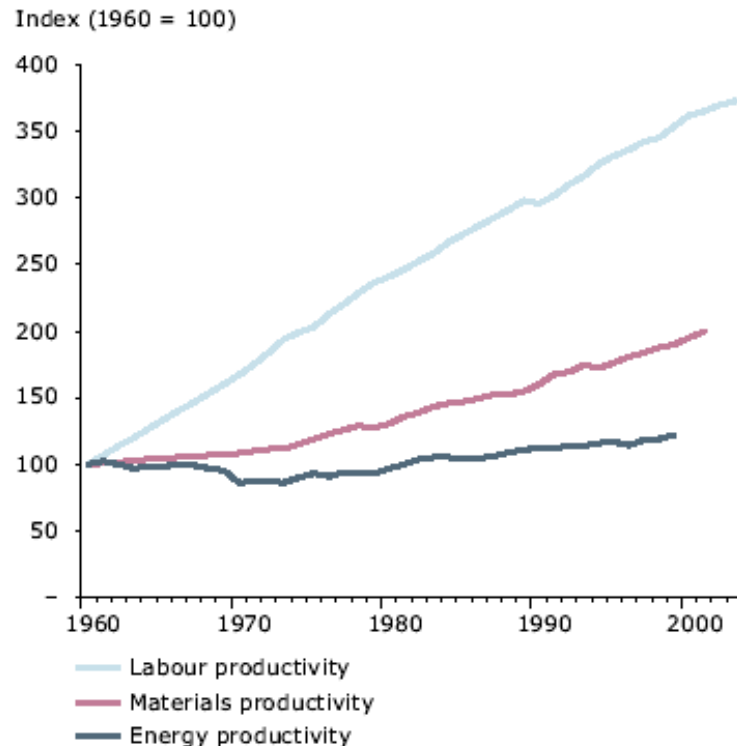
The largest increase will occur during the period 2015-35.

The EU would move from having 4 working-age people for every person aged over 65 to a ratio of 2 to 1.

Source: The 2009 Ageing report: Underlying Assumptions and Projection Methodologies. European Economy 7/ 2008 (provisional version)

Shift Focus from Labour to Resources & Energy Productivity...

Figure 4.2 Labour productivity, material productivity, and energy productivity, EU-15, 1960–2002



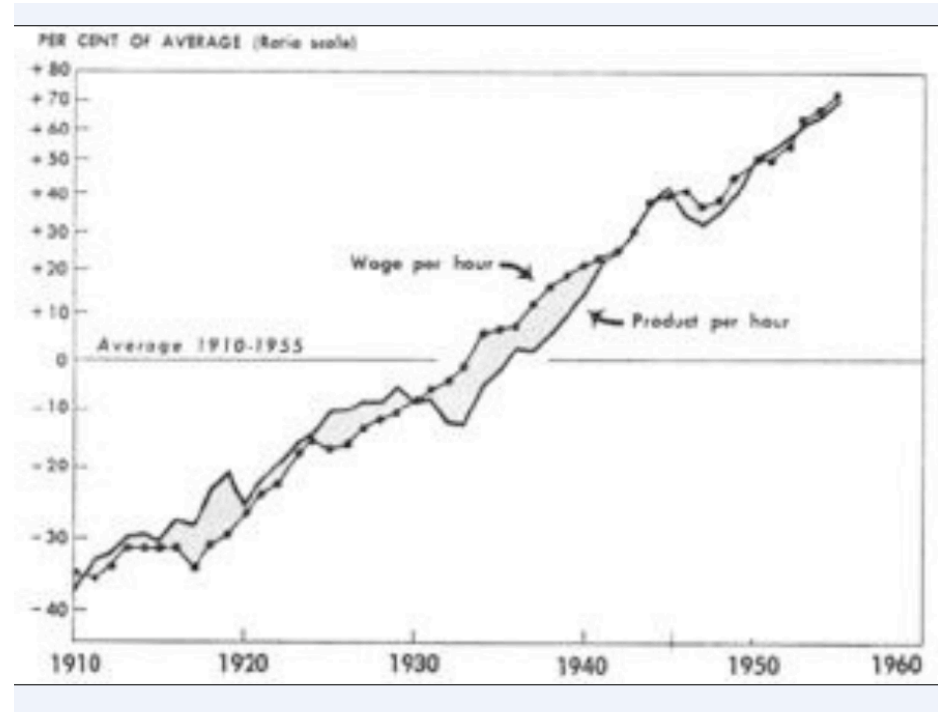
Note: Labour productivity: GDP per annual working hours (1999 USD (converted at EKS PPPs) per hour); material productivity: GDP per domestic material consumption (DMC) (EUR per kg); energy productivity: GDP per total primary energy supply (TPES) (thousand 1995 USD per toe).

Labour productivity has increased 270% over the past four decades partly as a result of high taxes on labour.

Meanwhile materials productivity and energy increased by 100 % and 20 % respectively

(EEA, Sustainable Use & Management of Natural Resources, 2005)

Labor productivity rises in parallel with labor costs



**So why not raise
energy prices in parallel with energy productivity increases which
will both stimulate productivity increases and help limit the
rebound effect?
(Ernst Von Weizsecker, June 09)**

The **real** problem is the rebound effect

It was first described by **William S. Jevon's** in his 1865 book, **The Coal Question**, where he observed that England's consumption of coal soared after James Watt introduced his coal-fired steam engine, which greatly improved the efficiency over earlier steam pumps. Since the 1980s, the rebound effect is often called the **Khazzoom-Brookes Postulate**.

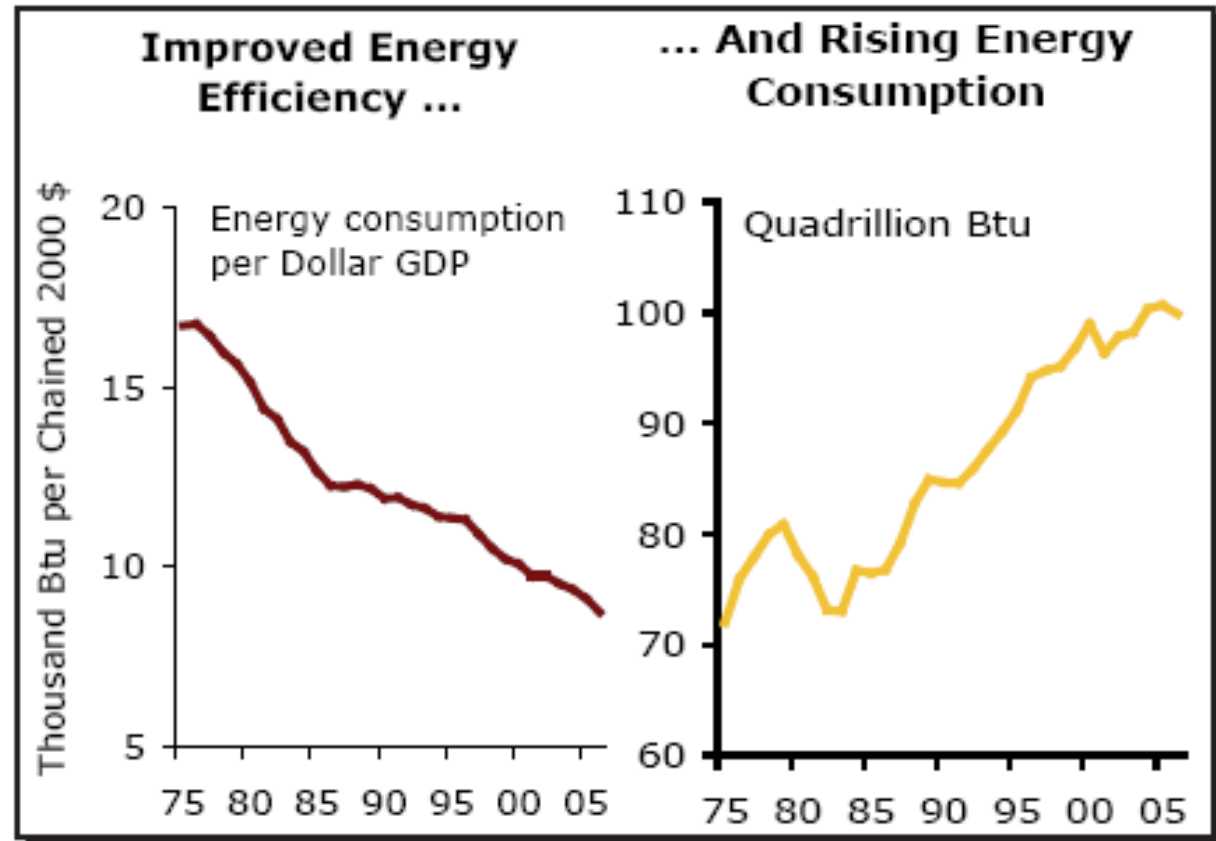


Rebound effect in the USA:

Energy intensity down, total energy consumption up.

SUV's, urban sprawl, electronics boom.

Americans Efficiently Consume Ever-Increasing Amounts of Energy



Source: EIA

Overcoming the rebound effect with **economic instruments**

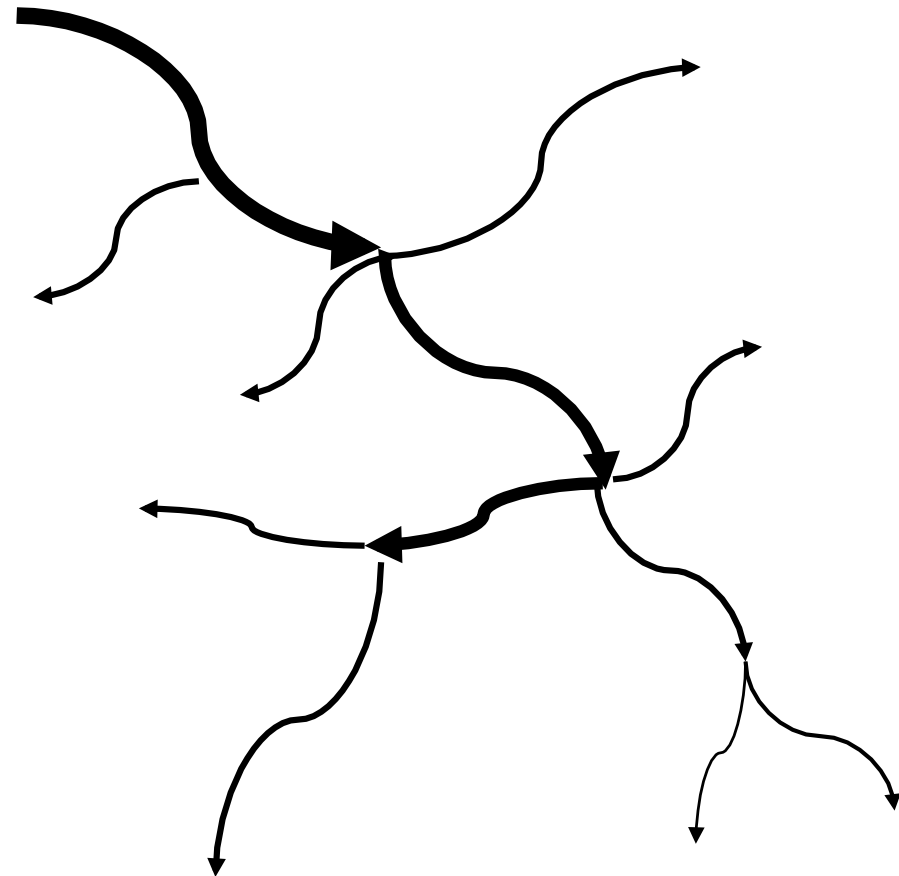
Regulation

Technological efficiency gains, mostly inside the box



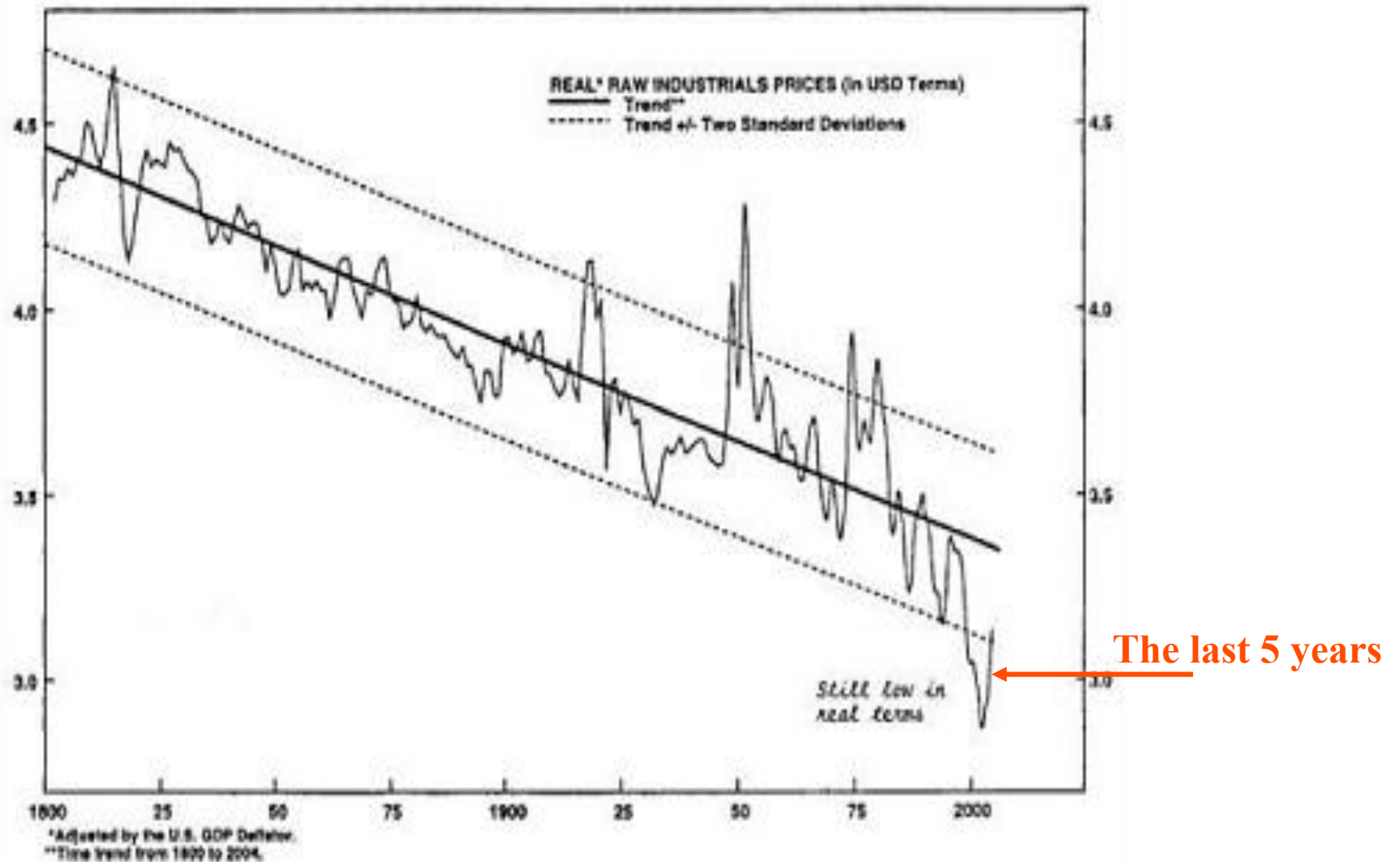
Economic Instruments

Adding a price tag on consumption: networks and cascades get leaner



Meanwhile market prices of resources have declined

(Industrial commodity & energy prices, in constant dollars)



Source: *The Bank Credit Analyst*

Resource productivity, environmental tax reform (ETR) and sustainable growth in Europe

Presentation to the Discussion

‘Environmental Tax Reform at a Time of Financial Crisis’

Paul Ekins

Professor of Energy and Environment Policy
King's College London, Department of Geography

Thursday 4th June, 2009
British Embassy, Berlin

Modelling a large-scale ETR in Europe

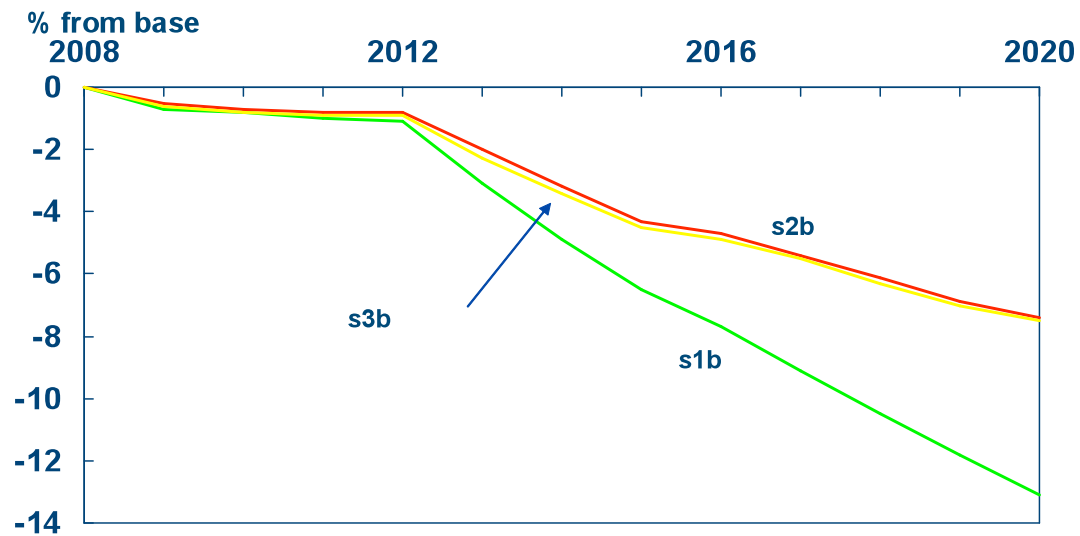
- Two European macro-econometric models: E3ME, GINFORS.
- Models deliver insights, not forecasts or ‘truth’
- Six scenarios:
 - Baseline with low energy price (LEP)
 - Baseline sensitivity with high energy price (HEP, reference case)
 - Scenario 1: ETR with revenue recycling designed to meet unilateral EU 2020 GHG target (S1 – scenario compared with Baseline with LEP)
 - **Scenario 2: ETR with revenue recycling designed to meet unilateral EU 2020 GHG 20% target (S2 – scenario compared with Baseline with HEP)**
 - Scenario 3: ETR with revenue recycling designed to meet unilateral EU 2020 GHG target (S3 – scenario compared with Baseline with HEP)
 - proportion of revenues spent on eco-innovation measures
 - **Scenario 4: ETR with revenue recycling designed to meet cooperation EU 2020 GHG 30% target (S4 – scenario compared with Baseline with HEP)**

What might a large-scale ETR in Europe look like.....?

- **The taxes ...**
 - A **carbon tax rate is introduced to all non EU ETS sectors** equal to the carbon price in the EU ETS that delivers an overall 20% reduction in greenhouse gas emissions (GHG) by 2020 (in the international cooperation scenario (S4) this is extended to a 30% GHG reduction)
 - **Aviation is included** in the EU ETS at the end of Phase 2 in 2012
 - **Power generation sector** EU ETS permits are **100% auctioned in Phase 3** of the EU ETS (from 2013) [NB auctioning does not change carbon prices or emissions]
 - All **other EU ETS permits are 50% auctioned** in 2013 increasing to 100% in 2020
 - **Taxes on materials** are introduced at 5% of total price in 2010 increasing to 15% by 2020
 - **S4 carbon tax in non-EU countries** is 25% of carbon tax in EU
-
- **and tax reductions**
 - **Reductions in income tax rates** (for households) and social security contributions (for businesses) in each of the member states, such that there is **no direct change in tax revenues**
 - **In S3 10% of the environmental tax revenues are recycled through spending on eco-innovation measures**

Results (E3ME)

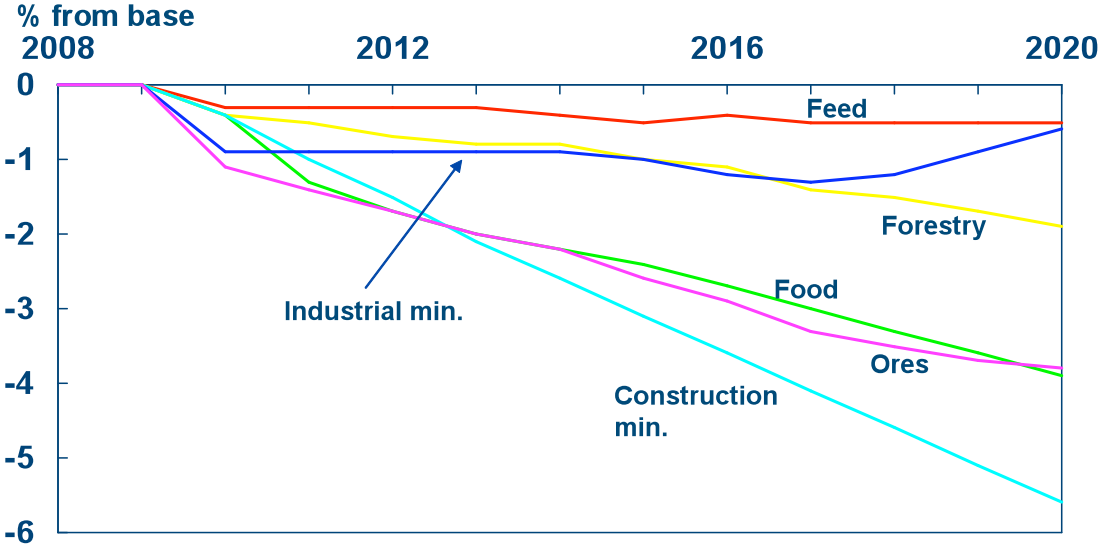
Energy Demand in the EU



- There will be substantial differences in different EU countries

Results (E3ME)

Materials Demand



Results: Productivities (GINFORS)

Percentage change in productivity from baseline. Units:

- Numerator in each case is GDP in 2005 prices and PPP;
- Denominators: material – tonnes; energy – primary energy supply, thousand tonnes of oil equivalent; labour – 1,000 employees

Scenario	Material Productivity	Energy Productivity	Labour Productivity
S2	0,91	6,04	-0,93
S3	0,84	7,15	-0,71
S4	1,78	15,48	-2,61

Implications for the rest of the world?

Material extraction - GINFORS

Country group	Total extraction, baseline, 2020 (in billion tonnes)	Absolute deviation of S2 from baseline (in billion tonnes)	Percentage deviation of S2 from baseline	Absolute deviation of S4 from baseline (in billion tonnes)	Percentage deviation of S4 from baseline
EU-25	6.82	-0.10	-1.47 %	-0.24	-3.6 %
OECD (non-EU)	18.73	0.02	0.10 %	-1.03	-5.5 %
Anchor (1)	31.50	0.01	0.03 %	-2.23	-7.1 %
RoW	24.24	-0.02	-0.08 %	-0.79	-3.3 %
Global total	81.18	-0.09	-0.11 %	-4.30	-5.3 %

⁽¹⁾ Argentina, Brazil, China, India, Indonesia, Philippines, Russia, South Africa, and Thailand

Implications for the rest of the world?

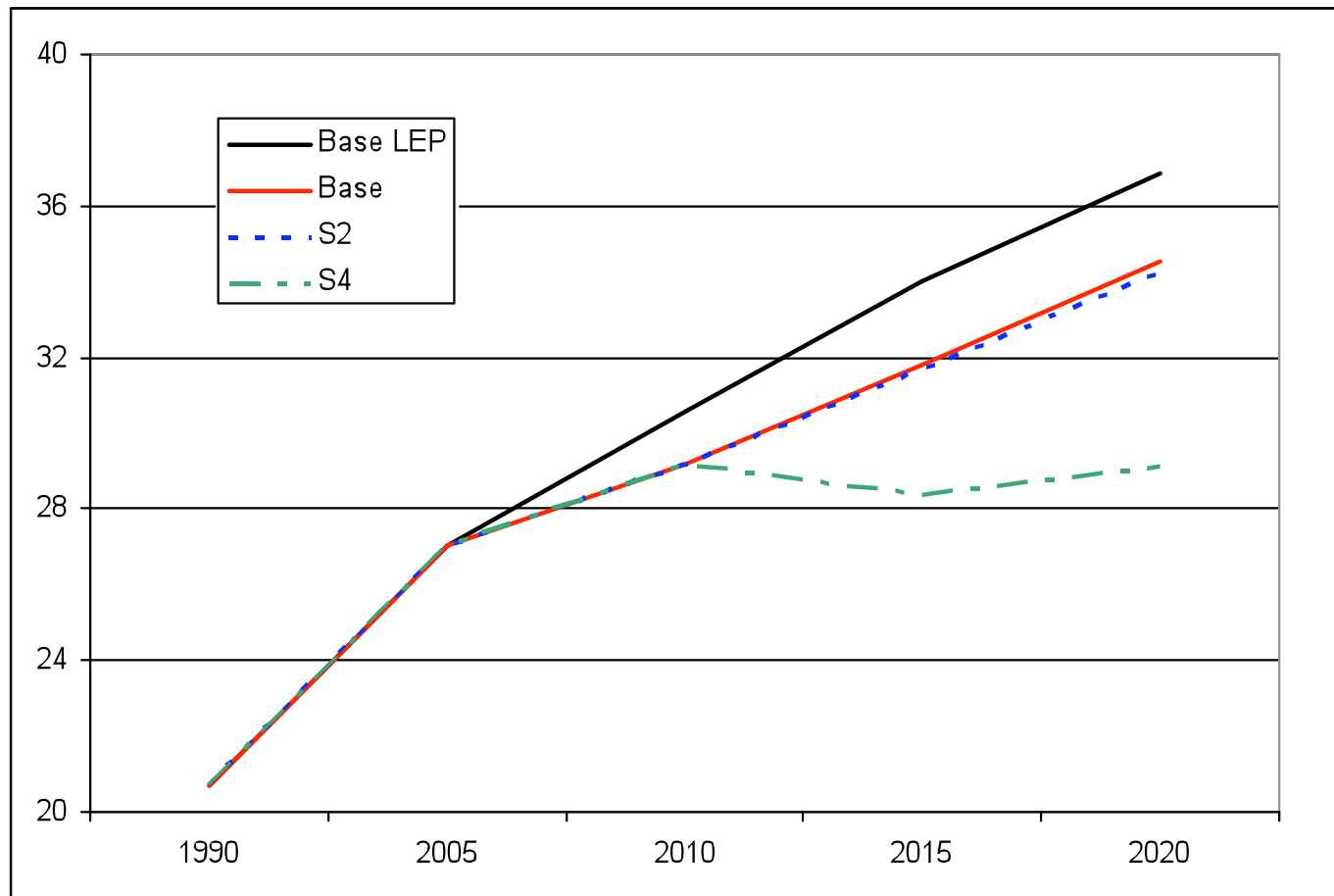
CO₂ emissions- GINFORS

Country group	Total energy-related CO ₂ emissions in baseline, 2020 (in Mt)	Total change in S2 from baseline (in Mt)	Relative change in S2, % against baseline	Total change in S4 from baseline (in Mt)	Relative change in S4, % against baseline
EU-25	3776.3	-318.8	-8.4 %	-722.4	-19.1 %
OECD (non-EU)	10244.6	10.4	0.1 %	-1829.1	-17.9 %
Anchor countries ¹	14835.5	2.3	0.02 %	-2741.9	-18.5 %
RoW	5854.9	0.4	0.01 %	-141.4	-2.4 %
Global	34526.7	-272.8	-0.8 %	-5398.6	-15.6 %

¹ Argentina, Brazil, China, India, Indonesia, Philippines, Russia, South Africa, and Thailand

Implications for the rest of the world?

CO₂ emissions (Mt) - GINFORS



From ETR to Eco-nomic Tax and Subsidy Reform(ETSR)

- Reduce/eliminate **environmentally perverse subsidies** (both payments and costs avoided-ie »externalities ») given to fossil fuels, road transport, nuclear, some intensive agriculture
- Which saves some public expenditure and its tax sources...
- Whilst some saved revenue is spent on **tax breaks and investment incentives for eco-innovation/energy efficiency.**

ETR as part of a package of coherent policy measures

- “Environmental taxes often work best when part of a policy package aiming at addressing one(or more) environmental problems, but the interaction of several policy tools is then complex”

EEA, “Environmental Taxes: Implementation and Environmental Effectiveness”, 1996, p11.

3 Main Arguments against ETSR- and Responses

- ***Damages competition?***-no evidence for this except specific short term losers-who can get time limited exemptions and border tax adjustments.
- ***Hits the poor/elderly?***-design ETSR so it doesn't
- ***Revenues erode if taxes change behaviour?*** raise tax /unit of pollution/resource/energy in step with eco-efficiency gains-slowly, but predictably over decades.(See Tobacco tax history;UK fuel price escalator).Plus rising tax revenues from eco-innovation industries..

Winners and Losers from ETSR

- **Losers:** « inefficient » users of energy and resources; big polluters and waste creators
- **Winners: Labour intensive businesses:** construction, energy efficiency, caring; teaching; cleaning; other services; knowledge industries; entertainment; eco-efficient industries; recycling/repair, etc
- ie most **people**, current and future;
- & the **planet** with its economy-supporting eco-systems providing *sources* of food , fibre, fuel, medicines; its *services* from ecosystems (pollination, flood control etc); its *sinks* for wastes /pollution; and its *space* for people/ species

The Politics of ETSR

- **Losers mobilise political opposition to ETSR**
- **Winners are passive: therefore**
- **Mobilise Winners !**
(See German example within their ETR campaign, 99-03)

Germany: Results of ETR, 99-03

- **Additional jobs up to 250.000 (= 0.5%) (DIW)**
- **Without the ETR, pensions fund contributions would be 1.7% higher**
- **In 2003 the black labour market was reduced for the first time by 1.6% in Germany which is basically due to reduced charging of labour.**
- **Slightly positive effect on GDP (DIW)**
- **In industry there are more winners than losers (RWI)**
- **Many companies were identified as winners in an empirical study with 16 case studies (DIW/Ecologic)**

China's Green Revolution?

- 2nd largest solar panel manufacturer ,after Japan
- Largest installation of Renewable Energies.
- Close 2nd to Germany in dollars invested in renewables ,2007
- 60% of global market for solar water heaters
- Car fuel efficiency standards 40% higher than USA

Source:China's Clean Revolution, 2008, The Climate Group UK.