

Attracting green growth and innovation

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Cutting Carbon Costs: Our Big Energy Battle

London School of Economics. 8 November, 2011



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1. The 'glut' in saving

- Despite billions of dollars of public borrowing, **real risk-free short- and long-term interest rates remain close to/below zero.**
- Companies and consumers **excess desired saving.**
- This **money**, in many cases, has had **nowhere productive to go** as investors and banks remain insufficiently confident in future markets to extend lending.

Table 1. Daily U.S. Treasury yield curve rates
November 2011

Date	1 mo	3 mo	6 mo	1 yr	2 yr	3 yr	5 yr	7 yr	10 yr	20 yr	30 yr
11/01/11	0.01	0.01	0.05	0.13	0.23	0.38	0.90	1.45	2.01	2.73	2.99

Source: U.S. Treasury

http://www2.lse.ac.uk/GranthamInstitute/publications/Policy/docs/PP_macro-economic-green-recovery_Jan11.pdf



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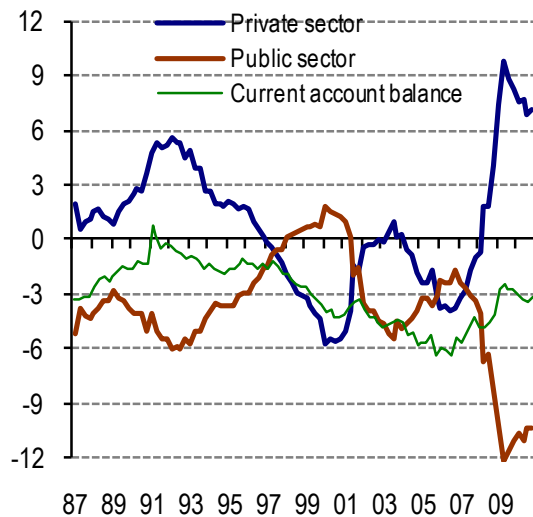
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2. Fiscal policy hits limits, but private saving aplenty

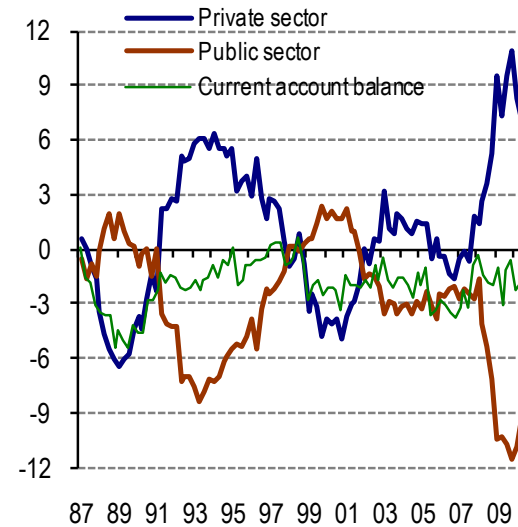
- The limitations of monetary policy in a liquidity-flush environment shifted the focus of policy to the fiscal side.
- Fiscal position stretched, but that does not mean no private money:

– **Figure 1: Sector financial balances*, % of GDP**

United States



United Kingdom



*net borrowing, or saving minus investment

3. Short run macroeconomy

Macroeconomic challenge: how to:

- crack the confidence cycle?
- deploy idle cash?
- do this when conventional monetary and fiscal policy reaching limits?

4. Is there a macro policy alternative?

- With all this private liquidity available for investment, governments should aim to **create profitable private sector opportunities**.
- Why green?
 - **Short run sheltered from market headwinds**; sectors rely on policy-makers to be competitive.
 - **Long run credible** – though policy still key to define the size, profitability and scope of the market?
- Why policy? Numerous market failures:
 - i. Under-pricing of the social cost of pollution from greenhouse gas emissions
 - ii. a lack of incentives for energy efficiency
 - iii. investment which generates large knowledge spillovers, prevent investment from which businesses and consumers could profit collectively (but do not)
 - iv. Financial market access
- If rationale for intervention is credible, then clear government commitment can leverage investment.

5. The size of the green opportunity

- **Even in the present uncertain global green policy environment** with lack of ambitious, coordinated policy response:
 - Renewable energy generation and energy efficiency investment has **quadrupled since 2004** according to Bloomberg New Energy Finance (NEF);
 - New investment in **clean energy surpassed investment in conventional energy** generation in 2010, rising to between US\$180 and US\$200 billion
- HSBC forecasts the global low-carbon energy market will **triple** to US\$ 2.2 trillion **by 2020** (HSBC, 2010):
 - Around US\$10 trillion in cumulative capital investments required 2010-2020;
 - **Energy efficiency themes will surpass low-carbon power** as the major investment opportunity by 2020, e.g., electric vehicles;
 - The market for energy efficient lighting alone estimated to be worth US\$ 79 billion by 2020.

6. Green Race

Many economies are already acting to establish themselves as the pioneers of this new energy-industrial revolution.

A competitive 'green race' has begun with South Korea, China, some parts of Europe, and California in the lead.

Costs have been slashed in some key existing technologies (e.g. solar), deployment has moved quickly (e.g. wind), new ideas are mushrooming (e.g. nano-batteries, algae, cement...).

- **Mainland China's** share of the global low-carbon market forecast to grow from 17% today to 24% by 2020, moving ahead of the US.
- Competition for market share will be strong, **e.g., South Korea** is showing leadership with its five year plan for green growth 2009-2013. Plans to allocate 2% of GDP to reduce GHGs, improve energy security, and promote new engines of economic growth. Target is to increase Korea's share of global clean technology exports from 2% to 8% by 2012.



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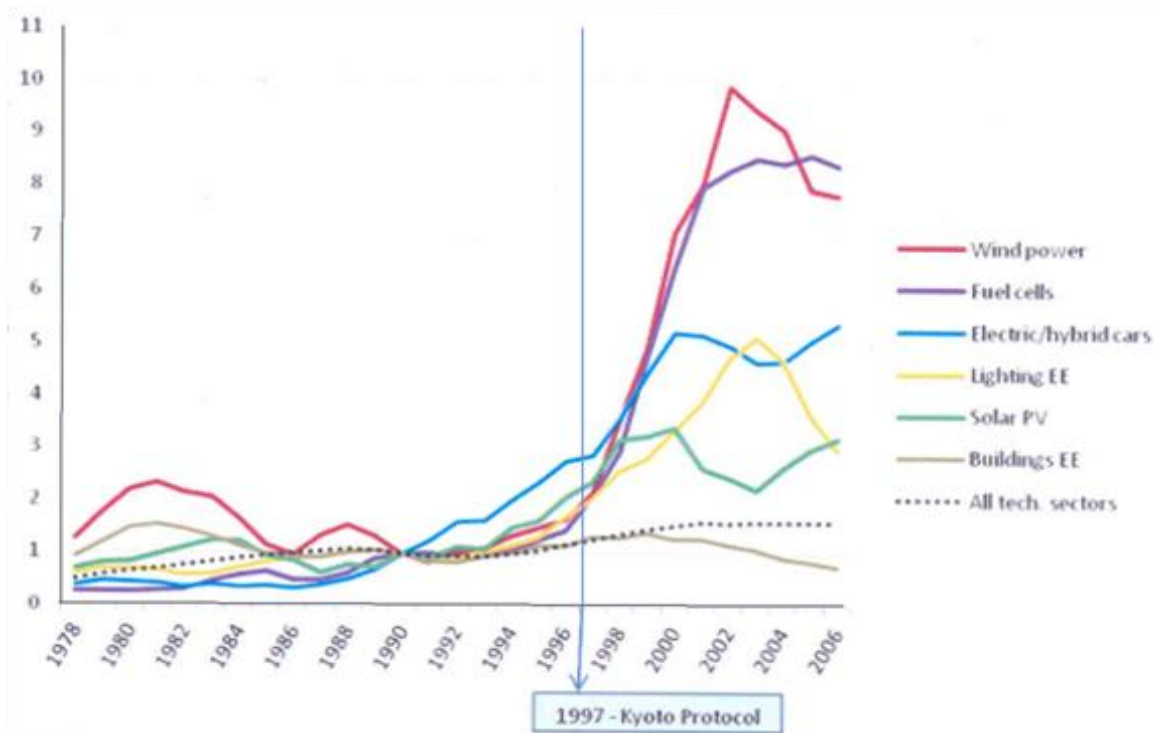
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7. The power of policy credibility

- The role of environmental policies in setting expectations and providing incentives to induce innovation is huge.

Innovation in climate change mitigation technologies

Patenting activity in Annex-I countries (3-year moving average, indexed on 1990=1.0)



Based on 'claimed priorities' (CP) deposited at any patent office worldwide, classified by technological field, from identification developed by the EPO/OECD World Patent Office (WIPO) (WIPO). OECD (2010).

8. Copenhagen Accord and Cancun

Policy progress too slow, but not stalled.

- **Poor recognition/understanding** of the total magnitude of the emissions reductions required; **Mistrust**, misunderstanding and acrimony; cumbersome UN procedures.

By Oct 2011:

- **114 developed and developing countries** have associated themselves with the Copenhagen Accord.
- **75 countries** (responsible for **80+ % of emissions**) submitted targets and intended actions (including the US and China).
- **Legally binding?** Means little: look at Canada.
- Agreements on: 2C; Green Climate Fund \$100bn; technology transfer mechanism; REDD; MRV.

9. Popular concerns

- What green investment raise costs?
- **Won't green investment crowd-out alternative productive investment?**
- What about the budget deficit?
- **Attractive feature:** Green policies **do not require significant public spending.**
- **Stable policies and strong signals** can **massively leverage public money**; crowd-in investment and raise the revenue required privately.

10. Market failure or policy failure?

- **Expectations clearly play a crucial role** in influencing investor behaviour.
- **Establishing credibility takes time.** Do it right.
- Recognise; change means some **up-front investment**, some costs, some **dislocation**. Not win-win-win
- **Avoid discriminating between technologies** and processes. Limit scope for rent seeking activities. Start with **pricing**.
- **Simple policy regimes** with fewer overlapping instruments are harder to 'capture'; more likely to improve transparency and effectiveness of policy.
- Financial support for RD&D far more effective when combined with **“demand-pull” policy frameworks** designed to create new markets.

11. Low-carbon growth – cities (I)

- Cities will be at the centre of this story.
- Cities are home to **half the world's 6.7 billion population, produce 70% of the world's GDP, and 75% of total GHGs**. By 2050, 75% of the world population is projected to be living in cities. The Asian Development Bank estimate 44 million people move to cities each year.
- Urban areas are well placed to lead the low-carbon transition. Cities contain **concentrated mix of specialisation and diversity** and economic activity which generates a **fertile environment for innovation** in ideas, technologies and processes.
- Cities have **well developed governance mechanisms** and planning systems, often more connected with citizens needs. Can enable the delivery of low-carbon programmes at scale, e.g., recycling schemes, generation of energy from waste, broadband networks, plug-in car points, integrated public transport systems, smart buildings, smart grids and congestion pricing.

12. Low-carbon growth – cities (II)

- Cities are well placed to benefit from strong action through a **unique mix of co-benefits**, but are also vulnerable to costs of inaction.
- Benefits of strong action include gains from innovation, reduced noise, reduced congestion, reduced pollution, increased social welfare, increased efficiency, and an attractive environment for skilled labour, entrepreneurs and innovative firms, etc.
- Risks from inaction include climate impacts, e.g., heat, water shortages and floods, but go much further.
- Inaction risks **costly lock-in** leading to slow growth, even decline, and high energy and resource dependency.
- Early and coordinated management and planning; long-run thinking is required.

13. Low-carbon growth – cities (III)

- **The choices made in cities today** on transport, infrastructure, buildings and industry, as they grow rapidly over the coming decades, **will determine, via the technology and way of life they lock-in**, whether mankind can both manage climate change and capture the benefits of low-carbon growth.
- Major world cities are increasingly taking the lead setting strong targets, e.g.:
 - New York (30% cuts in GHGs 2007-2030),
 - LA (35% cuts 1990-2030),
 - Seoul (40% cuts 1990-2030),
 - Hong Kong (50-60% cuts 2005-2020);
 - In China, The "Sino-Singapore Tianjin Eco-city" in the Coastal New District of Tianjin City in northern China.
 - NDRC low-carbon city project (part of 'local' 12th 5-year plans) include Tianjin, Chongqing, Shenzhen, Xiamen, Hangzhou, Nanchang, Guiyang and Baoding.
- Strong action in cities has the potential to influence the national agenda.

Conclusion

- We are at a crossroads: **inaction may bring catastrophe.**
- A strong move now to low-carbon growth can bring a **new era of progress and prosperity.**
- The basic challenges involve the whole world in risks, gains and action. **Collaboration is of the essence.**
- **Low-carbon growth is the only sustainable long-term option.** High-carbon growth will kill itself.
- **Credible long-term policy can reduce uncertainty**, generate profitable new markets and drive private investment without further aggravating public sector deficits.
- In long run, can **lock in** to resource-efficient growth, induced innovation and reduce the threat of irreversible environmental damages.
- In short run, can **boost jobs and growth** and raise the returns to saving.
- Politicians, officials, and economists **must grasp the opportunity.** Failure risks missing opportunity to lock in new low-carbon infrastructure and risks unnecessarily extending the economic crisis.

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