CEP 21st Birthday public lecture

Restoring Growth

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SOURCES OF GROWTH

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Director, Centre for Economic Performance

CEP 21st Birthday Series Lecture No. 2
LSE, November, 2010
SOURCES OF GROWTH?
2008-09 “GREAT RECESSION” COMPARED TO PREVIOUS RECESSIONS, CUMULATIVE CHANGE IN UK GDP

Source: NIESR (November 2010)
QUESTIONS

• What are the drivers of growth?
  – Technological innovation
  – Management practices
  – Micro-economic structural reforms

• Are the Coalition’s accelerated budget cuts the right medicine?
  – No, extreme austerity will harm economy.

• How can we rebalance the UK economy?
  – Within private Sector
  – Between private & public sector
1. Productivity: what is it & how is UK doing?

2. Why is there a productivity gap?

3. The drivers of better management


5. Macro-Policy: Austerity and its implications
WHAT IS PRODUCTIVITY AND WHY SHOULD WE CARE?

• **Absolute growth** of GDP not the issue

• **Productivity growth** is what matters (GDP per hour & Total Factor Productivity)
  – Drives growth of real wages & consumption
  – Can facilitate redistribution

• **Downsides to productivity growth**
  – Poverty?
  – Happiness?
RELATIVE LABOUR PRODUCTIVITY (GDP PER HOUR) IN 2009, US=100

UK ~12% less productive than US

Source: Conference Board World Economy Database, September 2010
GDP PER WORKER RELATIVE TO UK IN US, FRANCE & GERMANY (UK=100), 1979-2009

Source: Conference Board (2010), PPPs
UK RELATIVE PRODUCTIVITY

UK Gap with Germany reverses from -4% to +7%

Source: Conference Board (2010), PPPs
UK RELATIVE PRODUCTIVITY

UK Gap with France falls from -13% to -10%

Source: Conference Board (2010), PPPs
RECENT TRENDS IN PRODUCTIVITY

- After 1970s Oil Shocks a global productivity slowdown (e.g. US productivity growth slowed to \(~1.2\%\) p.a)
- From mid-1990s, US productivity “miracle”
- Crisis after end 2007

GDP/hour p.a. growth

<table>
<thead>
<tr>
<th>Year</th>
<th>US</th>
<th>EU-15</th>
<th>UK</th>
<th>France</th>
<th>Germany</th>
</tr>
</thead>
<tbody>
<tr>
<td>1995-2005</td>
<td>2.3%</td>
<td>1.5%</td>
<td>2.2%</td>
<td>1.8%</td>
<td>1.6%</td>
</tr>
<tr>
<td>2005-2009</td>
<td>1.2%</td>
<td>0.3%</td>
<td>0.4%</td>
<td>0.2%</td>
<td>0.3%</td>
</tr>
</tbody>
</table>

Source: Conference Board, September 2010
UK RELATIVE PRODUCTIVITY, 1979-2009

UK Gap with Germany reverses from -4% to +7%
UK Gap with France falls from -13% to -10%

Source: Conference Board (2010), PPPs
UK RELATIVE PRODUCTIVITY, 1979-2009

Source: Conference Board (2010), PPPs
WHAT HELPED IMPROVE UK’S PRODUCTIVITY POSITION POST 1997?

- Not driven just by financial sector; e.g. retail/wholesale had very strong productivity growth
- Increase in human capital through university expansion & school reforms (see over)
- R&D supported both directly & introduction of R&D tax credits (in 2000 for SMEs & 2002 for all firms)
- Product Market competition (e.g. Competition Policy Regime improved & ranked 2\textsuperscript{nd} in world)

Also:

- Labour market flexibility
- Openness to FDI
- Labour market supported by welfare reform (e.g. New Deal)
PROPORTION OF UK WORKERS WITH A COLLEGE DEGREE ROSE BY 12 PERCENTAGE POINTS 1997-2010

Source: GHS and Labour Force Survey, Various years
IMPROVEMENTS IN UK EMPLOYMENT RATE OF ADULTS

Source: Labour Force Survey, Various years, ages 16-65
OUTLINE

1. Productivity: what it is & how is UK doing?

2. Why is there a productivity gap?
   - Technological Innovation
   - The role of management

3. The drivers of better management


5. Macro-Policy: Austerity and its implications
TECHNOLOGICAL INNOVATION THE CAUSE OF PRODUCTIVITY GAP WITH THE US?

• Partially correct: UK has innovation deficit:
  – Although universities/basic science strong (e.g. highest paper citation to GDP ratio of G8 nations)
  – But commercialization weak: Research & Development (R&D), Patenting, etc.
# UK SECOND ONLY TO US IN ELITE SCIENCE

<table>
<thead>
<tr>
<th>Rank</th>
<th>Share of top scientific papers</th>
<th>Country</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>58.6</td>
<td>US</td>
</tr>
<tr>
<td>2</td>
<td>14.4</td>
<td>UK</td>
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<tr>
<td>3</td>
<td>11.1</td>
<td>GERMANY</td>
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<td>4</td>
<td>7.0</td>
<td>FRANCE</td>
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<td>5</td>
<td>6.2</td>
<td>CANADA</td>
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<tr>
<td>6</td>
<td>6.1</td>
<td>JAPAN</td>
</tr>
<tr>
<td>7</td>
<td>4.8</td>
<td>ITALY</td>
</tr>
<tr>
<td>8</td>
<td>4.3</td>
<td>NETHERLANDS</td>
</tr>
<tr>
<td>9</td>
<td>4.2</td>
<td>CHINA</td>
</tr>
</tbody>
</table>

*Notes:* Shares of the most cited scientific papers 1999-2008 (top 1%)

*Source:* BIS/Thompson-Reuters (2009) “International comparative performance of the UK research base”, Table 1.12, p.60

UK R&D LOW COMPARED TO OTHER COUNTRIES. TOTAL RESEARCH AND DEVELOPMENT AS A % OF GDP

Source: OECD (GERD/GDP)
UK R&D DECLINE 1987-1997? TOTAL RESEARCH AND DEVELOPMENT AS A % OF GDP

Source: OECD (GERD/GDP)
UK R&D DECLINE HALTED? TOTAL RESEARCH AND DEVELOPMENT AS A % OF GDP

Source: OECD (GERD/GDP)
TECHNOLOGICAL INNOVATION THE CAUSE OF PRODUCTIVITY GAP WITH THE US?

- But problem is not just “hard” technologies. Also problems with the way firms are managed.
- “Innovations” in management, such as:
  - Toyota’s Lean Manufacturing system (1970s)
  - Taylor’s Scientific management (1900s)
  - Mass production (1920s)
  - Alfred Sloan’s M-form firm (1930s)
  - Demming’s quality movement (1950s)
- 7 year research Program with Nick Bloom (Stanford)
  — Quantify & compare management in firms & nations
- Why don’t all firms adopt best practice immediately? Same as “hard” technologies (hybrid corn, ICT, etc.)
  — Information, Incentives, human Capital, etc.
1) Developing management questions
   • Scorecard for 18 monitoring, targets and people
   • ≈45 minute phone interview of manufacturing plant managers

2) Obtaining unbiased comparable responses ("Double-blind")
   • Interviewers do not know the company’s performance
   • Managers are not informed (in advance) they are scored
   • Run from LSE, with same training and country rotation

3) Getting firms to participate in the interview
   • Introduced as “Lean-manufacturing” interview, no financials
   • Official Endorsement: Bundesbank, PBC, RBI, etc.
   • Run by 55 MBA types (loud, assertive & business experience)
MONITORING – e.g. \textit{HOW IS PERFORMANCE TRACKED?}”

| Score | (1): Measures tracked do not indicate directly if overall business objectives are being met. Certain processes aren’t tracked at all | (3): Most key performance indicators are tracked formally. Tracking is overseen by senior management | (5): Performance is continuously tracked and communicated, both formally and informally, to all staff using a range of visual management tools |

Note: All 18 dimensions and over 50 examples in Bloom & VanReenen (2006).
MANAGEMENT SURVEY SAMPLE

- Interviewed over 8,000 firms across Americas, Asia & Europe
- Obtained ~45% response rate from sampling frame (with responses uncorrelated with performance measures)

Medium sized manufacturing firms:
- Medium sized (100 - 5,000 employees, median ≈ 250) because firm practices more homogeneous
- Manufacturing as easier to measure productivity
- Also examined management in Hospitals, Schools, Retail, Law Firms, nursing homes, charities, tax collection agencies
EXTERNAL VALIDATION: MANAGEMENT SCORE CORRELATES WELL WITH PERFORMANCE INDICATORS

Labour productivity

Return On Capital Employed, ROCE

Sales growth (%)

* Log scale
** Firms are grouped in 0.5 increments of assessed management score
THE LINK BETWEEN PRODUCTIVITY AND MANAGEMENT HOLDS TRUE ACROSS DIFFERENT COUNTRIES

Labour productivity*

<table>
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<tr>
<th>U.S.</th>
<th>U.K.</th>
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| CN   | JP   |

management practice score**

Labour productivity*

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<tr>
<th>FR</th>
<th>DE</th>
</tr>
</thead>
</table>

| SE   | PL   |

| IT   | PT   |

| GR   |

management practice score**

* Log scale (sales per worker)

** Firms are grouped in 0.5 increments of assessed management score
THE CAUSAL EFFECT OF MANAGEMENT ON PRODUCTIVITY

• Randomized Control Trials of Indian textile firms outside Mumbai
• All Firms receive a “light” management treatment then a randomized treatment group receive in-depth management consultancy from top international consulting firm for ~6 months
• Followed these firms for ~2 years
• Large improvements in management, quality and profitability (~$200,000 p.a.)
• So evidence of an important and large causal effect of these practices on performance
MANY PARTS OF THESE INDIAN PLANTS WERE DIRTY AND UNSAFE

Garbage outside the plant

Garbage inside a plant

Flammable garbage in a plant

Chemicals without any covering
THE PLANT FLOORS WERE DISORGANIZED

- Instrument not removed after use, blocking hallway.
- Old warp beam, chairs and a desk obstructing the plant floor.
- Dirty and poorly maintained machines.
- Tools left on the floor after use.
THE CAUSAL EFFECT OF MANAGEMENT ON PRODUCTIVITY

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• So evidence of an important and large causal effect of these practices on performance
UK MANAGEMENT MID-TABLE BY INTERNATIONAL STANDARDS

Note: Based on 8,261 management interviews between 2006 and 2010. We pool across multiple survey waves to maximize the extent of cross-country management comparison.
HUGE VARIATION OF MANAGEMENT PRACTICES COMPARED WITHIN ALL COUNTRIES

Note: Based on 8,261 management interviews between 2006 and 2009.
MUCH OF THE CROSS-COUNTRY DIFFERENCES DUE TO THE “LOWER TAIL”

Distribution of firm level management practice scores

U.K. U.S.

Low score High score Low score High score

Assessed management practice score
OUTLINE

1. Productivity: what it is & how is UK doing?

2. Why is there a productivity gap?

3. The drivers of better management
   • Competition
   • Ownership & control (Family Firms)
   • Skills & other factors


5. Macro-Policy: Austerity and its implications
Various ways that competition may influence management

- **Selection** – badly run firms more likely to exit
- **Effort** – forces badly run firms to try harder to survive

We find competition is strongly linked with better management through a mixture of selection & effort
COMPETITION IS ASSOCIATED WITH BETTER MANAGEMENT PRACTICES

Assessed management practice score

Note: Reported number of competitors (10=10 or more)
IS COMPETITION A CAUSAL FACTOR IN IMPROVING MANAGEMENT?

• Examine management in NHS hospitals. Mid 2000s reforms increased competition by geographically closer hospitals

• Closing hospitals very politically unpopular, so we use exogenous variation in degrees of political contestability to construct a “natural experiment”
  – Hospital in “marginal” wards much less likely to be closed
MORE HOSPITALS IN MARGINAL CONSTITUENCIES

Notes: Mean number of hospitals per 1 million people within a 30km radius of centre of a political constituency; “winning margin” (x) is % of votes ahead of second party
EFFECT OF AN INCREASE IN COMPETITION (1 EXTRA RIVAL HOSPITAL) ON MANAGEMENT AND CLINICAL QUALITY

% improvement from higher competition

Management\(^1\) (competition exogenous)  Management\(^2\) (competition endogenous)  Patient\(^3\) quality - survival rates from Heart attacks (competition endogenous)

Source: Bloom, Propper, Seiler & Van Reenen (2010)
Notes: Derived from OLS and 2SLS regressions
FAMILY FIRMS (OWNED WITH ELDEST SON AS CEO) AND GOVERNMENT FIRMS HAVE WORST MANAGEMENT

Average score on 18 management practice questions

Note: Sample of 4,221 medium-sized manufacturing firms. The bottom bar-chart only covers the 3696 firms which have been in the same ownership for the last 3 years. The “Other” category includes venture capital, joint-ventures, charitable foundations and unknown ownership.
MULTINATIONALS APPEAR TO BE WELL MANAGED IN ALL COUNTRIES
BETTER MANAGEMENT IS LINKED WITH HIGHER SKILL LEVELS OF BOTH MANAGERS AND NON-MANAGERS

Degree educated non-managers, %

Degree educated managers, %

Management practice score

- 5
- 6
- 11
- 12
- 15
- 20
- 20
- 25

- 1.5
- 2.0
- 2.5
- 3.0
- 3.5
- 4.0
- 4.5
- 5.0

- 53
- 53
- 54
- 60
- 63
- 66
- 75
- 84
LABOUR MARKET REGULATION ARE NEGATIVELY CORRELATED WITH PEOPLE MANAGEMENT...

Correlation of -0.752
QUANTIFYING EFFECTS OF COMPETITION, FAMILY FIRMS & MULTINATIONAL:

• ACROSS FIRMS ~ $\frac{1}{2}$ VARIATION

• ACROSS COUNTRIES ~ $\frac{1}{2}$ VARIATION
“GOOD DOMESTIC” (MANY COMPETITORS, NOT PG FAMILY) OR MULTINATIONAL

5.9% firms in tail¹

“BAD DOMESTIC” (FEW COMPETITORS OR PG FAMILY)

18.1% firms in tail¹

¹ Tail defined as a score ≤ 2. In the whole sample 9.6% of firms are in the tail. PG = “Promo geniture”
OUTLINE

1. Productivity: what it is & how is UK doing?

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STRUCURAL REFORMS TO IMPROVE MANAGEMENT & PRODUCTIVITY

• **Product market Competition**
  – Competition policy, Trade policy, planning
  – Public sector (e.g. UK hospital reforms)

• **Meritocratic CEO appointment not eldest sons**
  – e.g. 100% Inheritance Tax exemption for family business assets, promotes family firms (cf. Mirrlees Review)

• **Human Capital**
  – UK weak at lower end (e.g. EMA, Apprenticeships,)

• **Openness to foreign investment**
• **Labour market regulation**
• **Financial market regulation**
IMPLICATIONS FOR POLICY MAKERS – INNOVATION

• Structural reforms will tend to also boost innovation

• Universities and basic science
  – Funding & Browne Response; student visas
  – University linkages (Technology Transfer)

• R&D policies
  – R&D tax credits raise R&D (Bloom, Griffith & VR, 2002) but improving supply side better
1. Productivity: what it is & how is UK doing?

2. Why is there a productivity gap?
   - Technological Innovation
   - The role of management

3. The drivers of better management


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AUSTERITY – LABOUR’S PLANS FOR FISCAL TIGHTENING

5% of GDP by 2016/17
(£72.4bn by 2015/16)

Source: IFS, HMT
EXTREME AUSTERITY – JUNE EMERGENCY BUDGET. LARGEST CUT SINCE WW2

Source: IFS, HMT
EXTREME AUSTERITY – OCTOBER SPENDING REVIEW. SAME STORY.

7% of GDP a year earlier

Source: IFS, HMT
COSTS OF ACCELERATED AUSTERITY

• Withdrawal of demand risks recovery
  – Private sector cannot speedily adjust to the fiscal shock
  – Recovery is fragile (e.g. 2010 UK growth through construction & stimulus & US very weak)

• Long-run effects of short-run fiscal contraction
  – Scrapping of human and fixed capital (a pessimistic view of UK capacity becomes a self-fulfilling prophecy)
  – Example: long-term unemployment (Pissarides)

• Destruction of successful policies
  – Crisis forces removal of unsuccessful policies, but also a bonfire of successful programs (e.g. EMA)
  – Combined with huge changes (e.g. decentralization to GPs in NHS upheaval) creates uncertainty

• Fairness
BENEFITS OF ACCELERATED AUSTERITY

• UK faces a “Greek scenario?”: unsustainable debt
  – Deficit driven by global recession & consensus on need for reduction, mainly via spending cuts
  – Reduce borrowing costs? Not if contraction severe
  – Debt crisis exaggerated:(i) Historically moderate (42% in 2006; 79% 2011; av=102%); (ii) maturity;(iii) no default

• Credibility & Confidence
  – “Frontloading” to reassure irrational bond markets?
  – Better to deliver a realistic good plan than fail to deliver an unrealistic bad plan

• Productive capacity is much lower
  – Too pessimistic? some genuine productivity progress post 1997
EXTREME AUSTERITY – THE NEED FOR A “PLAN B”

• Chancellor has argued against a Plan B

• Mervyn King & MPC to the rescue?
  – Low interest rates?
  – Quantitative Easing

• Tax cuts & spending increases
  – Hard to fine tune
  – Extreme loss of credibility
WHAT “REBALANCING” IS NECESSARY?

• Within Private sector
  – Away from finance, construction, etc.
  – Towards manufacturing, high tech service exports

• Between Public and private sector
  – Need to reduce public spending
  – But to what level? Problem in 2000-07 was that taxes should have been raised more to cover spending choices
  – Expansion of health & education a choice post 1999
  – Reducing also a political choice, not an economic necessity, e.g. US vs. Northern EU
CONCLUSIONS

• Sources of productivity growth are innovation (well-studied) and management (understudied)

• Management and productivity can be improved by micro-economic structural reforms - especially over competition, human capital, tax reform, labour markets.

• Extreme austerity a political choice not economic necessity, will have long-lasting negative effects
  – An experiment
MY FAVOURITE QUOTES:

The difficulties of defining ownership in Europe

*Production Manager:* “We’re owned by the Mafia”

*Interviewer:* “I think that’s the “Other” category……..although I guess I could put you down as an “Italian multinational” ?”

Americans on geography

*Interviewer:* “How many production sites do you have abroad?

*Manager in Indiana, US:* “Well…we have one in Texas…”
Interviewer: “Would you mind if I asked how much your bonus is as a manager?”
Manager: “I don't even tell my wife how much my bonus is!”
Interviewer: “Frankly, that’s probably the right decision...”

Staff retention the American way
Manager: “I spend most of my time walking around cuddling and encouraging people - my staff tell me that I give great hugs”

The trusted Secretary
French secretary: “You want to talk to the plant manager? There are legal proceedings against him, so hurry up!!”
MY FAVOURITE QUOTES:

The traditional British Chat-Up

[Male manager speaking to an Australian female interviewer]

Production Manager: “Your accent is really cute and I love the way you talk. Do you fancy meeting up near the factory?”

Interviewer “Sorry, but I’m washing my hair every night for the next month….”
MY FAVOURITE QUOTES:

The traditional Indian Chat-Up

Production Manager: “Are you a Brahmin?’

Interviewer “Yes, why do you ask?”

Production manager “And are you married?”

Interviewer “No?”

Production manager “Excellent, excellent, my son is looking for a bride and I think you could be perfect. I must contact your parents to discuss this”
FURTHER READING

   http://pubs.aeaweb.org/doi/pdfplus/10.1257/jep.24.1.203%


   http://cep.lse.ac.uk/pubs/download/dp0788.pdf

4. UK productivity
   http://cep.lse.ac.uk/briefings/pa_uk_productivity.pdf
Back Up
### RECENT TRENDS IN PRODUCTIVITY

- **TFP p.a. growth (Conference Board, Sept. 2010)**

<table>
<thead>
<tr>
<th></th>
<th>US</th>
<th>UK</th>
<th>France</th>
<th>Germany</th>
<th>Japan</th>
</tr>
</thead>
<tbody>
<tr>
<td>1995-2005</td>
<td>0.9%</td>
<td>0.5%</td>
<td>0.3%</td>
<td>0.8%</td>
<td>0.1%</td>
</tr>
<tr>
<td>2005-2009</td>
<td>-0.5%</td>
<td>0.5%</td>
<td>-0.5%</td>
<td>0.5%</td>
<td>0.1%</td>
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</tbody>
</table>
### TARGETS - *e.g.* “HOW TOUGH ARE TARGETS?”

| Score | (1) Goals are either too easy or impossible to achieve; managers low-ball estimates to ensure easy goals | (3) In most areas, top management pushes for aggressive goals based on solid economic rationale. There are a few "sacred cows" not held to the same rigorous standard | (5) Goals are genuinely demanding for all divisions. They are grounded in solid, solid economic rational |

Note: All 18 dimensions and over 50 examples in Bloom & VanReenen (2006).
INTERVAL VALIDATION OF THE SCORING

Re-interviewed 222 firms with different interviewers & managers

Firm average scores (over 18 question)

Firm-level correlation of 0.627
Note: Data from a total of 1,718 firms interviewed in 2006 and 2009/10 (263 US, 118 German, 253 UK, 157 French, 197 Chinese, 107 India firms).
Source: OECD Education at a Glance 2010

% 25-64 with below upper secondary, upper secondary & tertiary education (2008)
CHANGE IN THE SHARE OF UK EMPLOYMENT & VALUE ADDED (1998-2007)

(Share of GVA)

Financial Services (9.1%)
Other Business Services (9.8%)
Health and Social Work (7.3%)
Computer and Related Activities (3.1%)
Education (5.9%)
Renting of Machinery and Equipment (1.0%)
Research and Development (0.4%)
Post and Telecommunications (2.5%)

Construction (6.3%)
Mining and Quarrying (2.9%)
Other Community, Social and Personal Services (3.9%)
Public Admin. and Defence (5.0%)
Retail (5.3%)
Hotels and Restaurants (2.8%)
Real Estate Activities (9.2%)
Utilities (2.4%)
Agriculture, Forestry & Fishing (0.8%)
Transport, Storage and Distribution (10.7%)

Pharmaceuticals (0.8%)
Chemicals (0.7%)
ICT, Precision Instruments and Aerospace (1.3%)
Industrial Machinery and Transport Equipment (2.1%)
Building and Repairing of Ships and Boats (0.1%)
Food, Beverages, Tobacco Manufacture (1.6%)
Metal, Plastic and Non-Mineral Products (2.4%)
Other Manufacturing (2.6%)

Change in share between 1998 and 2008 (percentage points)

Source: BIS (2010)
COMPETITION REGIME PERFORMANCE

Source: BIS (2010), KPMG
UK STRONG POSITION IN ELITE SCIENCE

- UK 1% of world’s population but....
  - 7.9% of all scientific papers (2nd in world)
  - 11.8% of all citations to these papers (2nd in world)
  - 14.4% of all top papers (in top 1% of citations), 2nd
  - 32 papers per $bn GDP – 1st in G8
  - Citations per $bn GDP – 1st in G8
  - 2.5 papers per $m GERD - 1st in G8 (3rd in world)

- Universities are very strong area of UK comparative advantage
  - Major export industry
  - Threatened by spending cuts
  - Threatened by new student visa regime
**INCENTIVES - e.g. “HOW DOES THE PROMOTION SYSTEM WORK?”**

<table>
<thead>
<tr>
<th>Score</th>
<th>(1) People are promoted primarily upon the basis of tenure</th>
<th>(3) People are promoted upon the basis of performance</th>
<th>(5) We actively identify, develop and promote our top performers</th>
</tr>
</thead>
</table>

Note: All 18 dimensions and over 50 examples in Bloom & VanReenen (2006).
### CAUSAL EFFECT OF COMPETITION ON MANAGEMENT & PATIENT OUTCOMES (DEATH RATES) IN HOSPITALS

<table>
<thead>
<tr>
<th>Type of Regression</th>
<th>OLS</th>
<th>IV: 1(^{st}) Stage</th>
<th>IV: 2(^{nd}) Stage</th>
<th>IV: 2(^{nd}) Stage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dependent variable</td>
<td>Management</td>
<td># Competing Hospitals</td>
<td>Management</td>
<td>Emergency AMI death rate</td>
</tr>
<tr>
<td># Competing Hospitals</td>
<td>0.121** (0.058)</td>
<td>0.361* (0.215)</td>
<td>-1.827* (1.037)</td>
<td></td>
</tr>
<tr>
<td>Marginal Constituencies</td>
<td>5.850*** (1.553)</td>
<td></td>
<td></td>
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<tr>
<td>F-statistic of excluded instrument</td>
<td>14.18</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Observations</td>
<td>161</td>
<td>161</td>
<td>161</td>
<td>140</td>
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</table>

Source: Bloom, Propper, Seiler & Van Reenen (2010)

Notes: Constituency marginal if won by <5%. S.Es clustered by hospital. Controls include casemix (age/gender of admissions), population density, age profile (11 categories), Foundation Trust & interviewer dummies (4); % Labour votes, #political constituencies & mortality in catchment area; respondent tenure & whether she was a manager or clinician, regional dummies, # hospital sites, # admissions, % managers with a clinical degree and a dummy for joint decision making at the hospital level.
The labor market has proven relatively resilient, as employment has stabilized earlier than usual.

Employment around Recessions
(Last pre-recession quarter - t-1 = 100)

Source: IMF (2010), Article IV Consultation
Source: IMF (2010), Article IV Consultation
..to close the UK's large structural deficit and restore debt sustainability.

Source: IMF (2010), Article IV Consultation
### Public Sector Finances (percent of GDP) 1/

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<tr>
<td>Overall balance</td>
<td>-11.0</td>
<td>-10.1</td>
<td>-7.5</td>
<td>-5.5</td>
<td>-3.5</td>
<td>-2.1</td>
<td>-1.1</td>
</tr>
<tr>
<td>Cyclically adjusted overall balance</td>
<td>-8.7</td>
<td>-7.4</td>
<td>-5.0</td>
<td>-3.4</td>
<td>-1.8</td>
<td>-0.8</td>
<td>-0.3</td>
</tr>
<tr>
<td>Current balance</td>
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<td>-7.5</td>
<td>-5.8</td>
<td>-4.1</td>
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<td>Cyclically adjusted current balance</td>
<td>-5.3</td>
<td>-4.8</td>
<td>-3.3</td>
<td>-2.0</td>
<td>-0.7</td>
<td>0.3</td>
<td>0.8</td>
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<tr>
<td>Fiscal stance 2/</td>
<td>2.4</td>
<td>1.3</td>
<td>2.4</td>
<td>1.7</td>
<td>1.6</td>
<td>1.0</td>
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<td>of which: new policy measures</td>
<td>...</td>
<td>-0.5</td>
<td>-0.5</td>
<td>-0.5</td>
<td>-0.4</td>
<td>-0.3</td>
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<tr>
<td>General government gross debt</td>
<td>71.2</td>
<td>78.9</td>
<td>83.6</td>
<td>85.5</td>
<td>84.9</td>
<td>83.1</td>
<td>80.4</td>
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#### June 2010 Budget

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<tr>
<td>Overall balance</td>
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<td>Cyclically adjusted overall balance</td>
<td>-8.1</td>
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<td>General government gross debt</td>
<td>71.6</td>
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#### Staff projections

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<td>Overall balance</td>
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<tr>
<td>Cyclically adjusted overall balance</td>
<td>-7.2</td>
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<tr>
<td>General government gross debt</td>
<td>78.5</td>
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</table>

Sources: Office for National Statistics, HM Treasury, and staff estimates.

1/ Fiscal year starts in April and ends in March.
2/ Negative of the change in cyclically adjusted balance.
The UK sovereign debt has a favorable structure, featuring a longer average maturity than in any comparator country.

Source: IMF (2010), Article IV Consultation
### Table 1. United Kingdom: Selected Economic and Social Indicators, 2005-11

<table>
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<td>1.5</td>
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<td>Private final domestic demand</td>
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<td>CPI, and period</td>
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<td>3.1</td>
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<td>2.6</td>
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<td>Unemployment rate (in percent)</td>
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<td>Gross national saving (percent of GDP)</td>
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<td>13.6</td>
<td>14.5</td>
<td>15.2</td>
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<td><strong>Public Finance</strong> (fiscal year, percent of GDP) 2/</td>
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<tr>
<td>General government balance</td>
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<td>-11.3</td>
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<td>-2.4</td>
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<td>-7.2</td>
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**Money and Credit (end period, 12 month percent change) 3/**
### Table A1. United Kingdom: Public Sector Debt Sustainability Framework, 2005-2015
(in percent of GDP, unless otherwise indicated)

<table>
<thead>
<tr>
<th>Baseline: Public sector debt 1/</th>
<th>Actual</th>
<th>Projections</th>
<th>Debt-stabilizing primary balance 8/</th>
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<tbody>
<tr>
<td>o/w foreign-currency denominated</td>
<td>41.7</td>
<td>42.4</td>
<td>43.1</td>
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<td>0.1</td>
<td>0.1</td>
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</tbody>
</table>
CEP 21st Birthday public lecture

Restoring Growth

Professor John Van Reenen
Director, Centre for Economic Performance, LSE

Stuart Corbridge
Chair, LSE