Decoupling of Wage Growth and Productivity Growth? Myth and Reality

João Paulo Pessoa
John Van Reenen
Centre for Economic Performance, LSE

LSE/Resolution Foundation Presentation
November 21st 2011
INTRODUCTION

• Growth of inequality a major problem in UK and US over last 30 years (since late 1970s)
• In last 15 years evidence for “polarization”
  – Upper half inequality (90th-50th percentiles of wage distribution) continues to grow, but 50-10 compresses and shrinks
  – In US median and mean wages stagnant over 30 years (unlike UK where there has been real wage growth at median and bottom decile)
  – And top 1% doing very well (Bell and VR, 2011)
• Debate over decoupling: differences in productivity and wages. Workers not getting a “fair share” as productivity growth has been healthy
• Surprising as productivity growth a good thing – increases the size of the pie.
OUR FINDINGS

• There is essentially no “Net decoupling” in UK and US
  – Difference between growth of GDP per hour and hourly compensation using the same price deflator (e.g. GDP deflator/PPI)
  – Consistent with Econ 101
• There has been substantial “Gross Decoupling” in UK
  – Difference between growth of GDP per hour deflated by PPI and median hourly wages deflated by CPI/RPI
  – This is mainly because of (a) growth of inequality (mean – median wages) and (b) faster growth of compensation than wages (e.g. pension payments)
• Similar story in US except bigger gross decoupling & a little bit of net decoupling.
  – Also CPI deflator grows faster than GDP deflator
POLICY IMPLICATIONS

• Decoupling debate is a distraction? We should care about median living standards & inequality irrespective of what is happening to productivity growth

• Decoupling interpreted as workers getting a smaller fraction of the pie, but isn’t true. Problem is distribution among employees not capital vs. labor

• Decoupling dangerous because it makes people think – “why support policies to enhance productivity growth when the ordinary Joe doesn’t get much out of it”. But growth creates better possibility of re-distribution
OUTLINE

1. Decoupling “Theory”
2. Decoupling in the UK
3. Decoupling in the US
4. Labour Shares of National Income
5. Industry Level Analysis
6. Conclusions: Facts and Policy
THEORY

• Firm chooses labour to maximise profits given labour costs. Implies that (for neutral technical change) growth of hourly compensation equals growth of output per hour.

• **Net Decoupling** = Growth of GDP/Hour deflated by GDP-PPI LESS Average Compensation per hour deflated by PPI.

• **Gross Decoupling** = Growth of GDP/Hour deflated by GDP-PPI LESS Median wages per hour deflated by CPI.

• So (in growth rates) Gross – Net Decoupling =
  1. Average Compensation – average Wages
  2. Average wages – median wages
  3. CPI - PPI
OUTLINE

1. Decoupling “Theory”

2. Decoupling in the UK

3. Decoupling in the US

4. Labour Shares of National Income

5. Industry Level Analysis

6. Conclusions: Facts and Policy
(ALMOST) NO NET DECOUPLING IN UK
UK GROSS DECOUPLING: REAL GDP PER HOUR (1972=1)
UK GROSS DECOUPLING: LFS MEDIAN HOURLY EARNINGS (RPI) INC. SELF EMPLOYED
UK GROSS DECOUPLING 39%:
LFS MEDIAN HOURLY EARNINGS (RPI)
COMPARING GROSS AND NET DECOUPLING

<table>
<thead>
<tr>
<th>Year</th>
<th>Labour Productivity: GDP per Hour (GDP Deflator)</th>
<th>ONS Employees Mean Hourly Compensation (GDP Deflator)</th>
<th>ONS Employees Mean Hourly Wage (GDP Deflator)</th>
<th>LFS Employees Mean Hourly Earnings (GDP Deflator)</th>
<th>LFS Employees Mean Hourly Earnings (RPI)</th>
<th>LFS Workers Median Hourly Earnings (RPI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1970</td>
<td>1.0</td>
<td>1.0</td>
<td>1.0</td>
<td>1.0</td>
<td>1.0</td>
<td>1.0</td>
</tr>
<tr>
<td>1975</td>
<td>1.1</td>
<td>1.1</td>
<td>1.1</td>
<td>1.1</td>
<td>1.1</td>
<td>1.1</td>
</tr>
<tr>
<td>1980</td>
<td>1.2</td>
<td>1.2</td>
<td>1.2</td>
<td>1.2</td>
<td>1.2</td>
<td>1.2</td>
</tr>
<tr>
<td>1985</td>
<td>1.3</td>
<td>1.3</td>
<td>1.3</td>
<td>1.3</td>
<td>1.3</td>
<td>1.3</td>
</tr>
<tr>
<td>1990</td>
<td>1.4</td>
<td>1.4</td>
<td>1.4</td>
<td>1.4</td>
<td>1.4</td>
<td>1.4</td>
</tr>
<tr>
<td>1995</td>
<td>1.5</td>
<td>1.5</td>
<td>1.5</td>
<td>1.5</td>
<td>1.5</td>
<td>1.5</td>
</tr>
<tr>
<td>2000</td>
<td>1.6</td>
<td>1.6</td>
<td>1.6</td>
<td>1.6</td>
<td>1.6</td>
<td>1.6</td>
</tr>
<tr>
<td>2005</td>
<td>1.7</td>
<td>1.7</td>
<td>1.7</td>
<td>1.7</td>
<td>1.7</td>
<td>1.7</td>
</tr>
<tr>
<td>2010</td>
<td>1.8</td>
<td>1.8</td>
<td>1.8</td>
<td>1.8</td>
<td>1.8</td>
<td>1.8</td>
</tr>
</tbody>
</table>
COMPARING GROSS AND NET DECOUPLING: **BIG EFFECT OF COMPENSATION VS. BENEFITS**

![Graph showing labor productivity and mean hourly compensation](image-url)
COMPARING GROSS AND NET DECOUPLING: NO EFFECT OF DIFFERENT WAGE DATA: ONS VS. LFS
COMPARING GROSS AND NET DECOUPLING: NO EFFECT OF DIFFERENT DEFLATORS
COMPARING GROSS AND NET DECOUPLING: BIG EFFECT OF USING MEDIAN INSTEAD OF AVERAGE WAGE (INEQUALITY RISING)
DECOMPOSITION OF THE 39% GROSS DECOUPLING IN UK BETWEEN 1972-2010
1972-2010 DECOMPOSITION OF GROSS DECOUPLING IN UK

Net Decoupling
Benefits
ONS - LFS Divergence
Deflators
Inequality
Self-Employment

Inequality

Net Decoupling

Benefits

2010

-0.8%

15.0%

3.4%

2.0%

17.5%

-5%

0%

5%

10%

15%

20%

25%

30%

35%

40%
1972-2010 DECOMPOSITION OF GROSS DECOUPLING IN UK

Net Decoupling
Benefits
ONS - LFS Divergence
Deflators
Inequality
Self-Employment

Deflators
- 15.0%
- 3.4%
- 2.0%
- 17.5%
- 0.8%
- 5%
0%
10%
15%
20%
25%
30%
35%
40%

ONS – LFS average wages

Self-employment
- 1.6%
- 15.0%
20%

2010
DECOUPLING IN UK FOR SELECTED YEARS (BASE IS 1972)
ACCOUNTING FOR UK GROSS DECOUPLING 1972-2010

• Inequality increases: 13%

• Non-wage Compensation (mainly increasing pension contributions): 17.5%

• Minor factors
  – Differences between ONS and LFS wages (2%)  
  – Price deflators RPI – GDP deflator (3%)  
  – Growth of Self employed (2%)
OUTLINE

1. Decoupling “Theory”

2. Decoupling in the UK

3. Decoupling in the US

4. Labour Shares of National Income

5. Industry Level Analysis

6. Conclusions: Facts and Policy
SOME US NET DECOUPLING (~13% 1972-2010)
NIPA AVERAGE COMPENSATION (GDP DEFL.)
HUGE US GROSS DECOUPLING OF 76% (MIDIAN WAGE OF WORKERS DEFLATED BY CPI)

<table>
<thead>
<tr>
<th>Year</th>
<th>Labour Productivity: GDP per Hour (GDP Deflator)</th>
<th>CPS Employees Median Hourly Earnings (CPI)</th>
<th>CPS Workers Median Hourly Earnings (CPI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1970</td>
<td>1.8</td>
<td>0.8</td>
<td>1.0</td>
</tr>
<tr>
<td>1975</td>
<td>1.9</td>
<td>0.9</td>
<td>1.1</td>
</tr>
<tr>
<td>1980</td>
<td>1.7</td>
<td>1.0</td>
<td>1.2</td>
</tr>
<tr>
<td>1985</td>
<td>1.6</td>
<td>1.1</td>
<td>1.3</td>
</tr>
<tr>
<td>1990</td>
<td>1.5</td>
<td>1.2</td>
<td>1.4</td>
</tr>
<tr>
<td>1995</td>
<td>1.4</td>
<td>1.3</td>
<td>1.5</td>
</tr>
<tr>
<td>2000</td>
<td>1.3</td>
<td>1.4</td>
<td>1.6</td>
</tr>
<tr>
<td>2005</td>
<td>1.2</td>
<td>1.5</td>
<td>1.7</td>
</tr>
<tr>
<td>2010</td>
<td>1.1</td>
<td>1.6</td>
<td>1.8</td>
</tr>
</tbody>
</table>
US DECOUPLING: BENEFITS

![Graph showing the decoupling of labor productivity and employee compensation over time.](image-url)
US DECOUPLING: NIPA VS. CPS WAGE SERIES

The graph illustrates the comparison between various wage and productivity indices from 1970 to 2010. The indices include:

- Labour Productivity: GDP per Hour (GDP Deflator)
- NIPA Employees Mean Hourly Compensation (GDP Deflator)
- NIPA Employees Mean Hourly Wage (GDP Deflator)
- CPS Employees Mean Hourly Earnings (GDP Deflator)
- CPS Employees Median Hourly Earnings (CPI)
- CPS Workers Median Hourly Earnings (CPI)

The graph shows a significant divergence in the growth rates of these indices over the years, highlighting the decoupling between productivity and wages.
US DECOUPLING: DEFLATORS
US DECOUPLING: INEQUALITY

Inequality
ACCOUNTING FOR US GROSS DECOUPLING 1972-2010

- Inequality increases: 15% by 2010
- Compensation growth greater than wages growth (mainly health insurance); 15% by 2010
- GDP deflator rises more slowly than CPI (31% by 2010)
  - ICT investment good price deflator
  - Oil
  - PPI understated? CPI overstated?
  - Other factors?
- Minor factors
  - Differences between NIPA & CPS
  - Self employed
DECOMPOSITION OF GROSS DECOUPLING SELECTED YEARS - US
OUTLINE

1. Decoupling “Theory”

2. Decoupling in the UK

3. Decoupling in the US

4. Labour Shares of GDP

5. Industry Level Analysis

6. Conclusions: Facts and Policy
UK LABOUR SHARE OF GDP PRETTY STABLE BETWEEN 62-68% OVER LAST 30 YEARS
US LABOUR SHARE OF GDP BETWEEN 61-65% OVER LAST 30 YEARS
LABOUR SHARES FALLING IN SOME OTHER COUNTRIES LIKE FRANCE AND ITALY
LABOUR SHARES FALLING IN SOME OTHER COUNTRIES LIKE JAPAN AND GERMANY
OUTLINE

1. Decoupling “Theory”
2. Decoupling in the UK
3. Decoupling in the US
4. Labour Shares of GDP
5. Industry Level analysis
6. Conclusions: Facts and Policy
DECOUPLING AT THE INDUSTRY LEVEL

- Unclear what this means. In basic model wages = skill price does not vary by industry & should not be related to industry-specific (or firm-specific) productivity
- Alternative models (e.g. rent sharing) could generate such a relationship
- We look in UK at net decoupling at industry level
  - Wages follow productivity in general
  - Compensation generally risen a bit faster than productivity in market sector (especially in personal services & finance)
  - In Non-market sector productivity rises faster than wages (i.e. decoupling)! Probably because public sector and real estate value added hard to measure
OUTLINE

1. Decoupling “Theory”

2. Decoupling in the UK

3. Decoupling in the US

4. Labour Shares of GDP

5. Industry Level Analysis

6. Conclusions: Facts and Policy
CONCLUSIONS: FACTS

• Important to define terms: Gross vs. Net Decoupling
• In UK
  – net decoupling almost zero: productivity and compensation grow at similar rates in long-run (over last 40 years)
  – Gross decoupling of about 40%
• Difference is mainly because (i) mean wages grew faster than median wages (inequality) and (ii) compensation grew faster than wages (pension benefits)
• In US gross decoupling bigger, but net decoupling also pretty small. In addition to inequality & nonwage compensation, there is a big divergence between GDP deflator and CPI
CONCLUSIONS: POLICY

• Growth of wage/income inequality is extremely important. Focus of applied economics for 2 decades+

• Unclear what “decoupling” adds. Interesting if compensation grew more slowly than productivity (net decoupling) – workers losing out
  – But not happening!

• Interesting that nonwage comp is growing fast (pension and health reform?).
  – But don’t need to know anything about productivity for this

• Focus on gross decoupling distracts from urgent need to raise growth rates which is the problem facing developed world today