

Productivity Growth in the US and EU: Possible Lessons for India?

Robert J. Gordon

Presentation at
Sixth Annual NBER-NCAER
Neemrana Conference,
January 17, 2005

Income per Capita: Ultimate Measure of Economic Success

Power of Compounding: The “Rule of 70”

- 1.3% growth, doubles every 53 years (Philippines)
- 5.8% growth, doubles every 12 years (Korea)
- For very long-term growth or comparing rich and poor nations, Income per capita and productivity are the same thing
- Not the same thing for short-term changes or comparisons among rich nations
 - Even in an application to poor nations the distinction between consumption welfare and productivity matters
 - (Rob Feenstra on the terms of trade)

Income per Capita vs. Productivity: Central to Understanding the US vs. EU

- The ultimate goal of economic policy is growth in output per capita (Q/N)
- Productivity is output per aggregate hour worked (Q/A)
- Growth in output per capita differs from productivity when hours per capita (A/N) change

How Could Europe be So Productive Yet So Poor?

Output per Capita (Q/N)

In Europe 75% of U. S.
(failure to converge)

Productivity 95% of U. S.

The Difference:

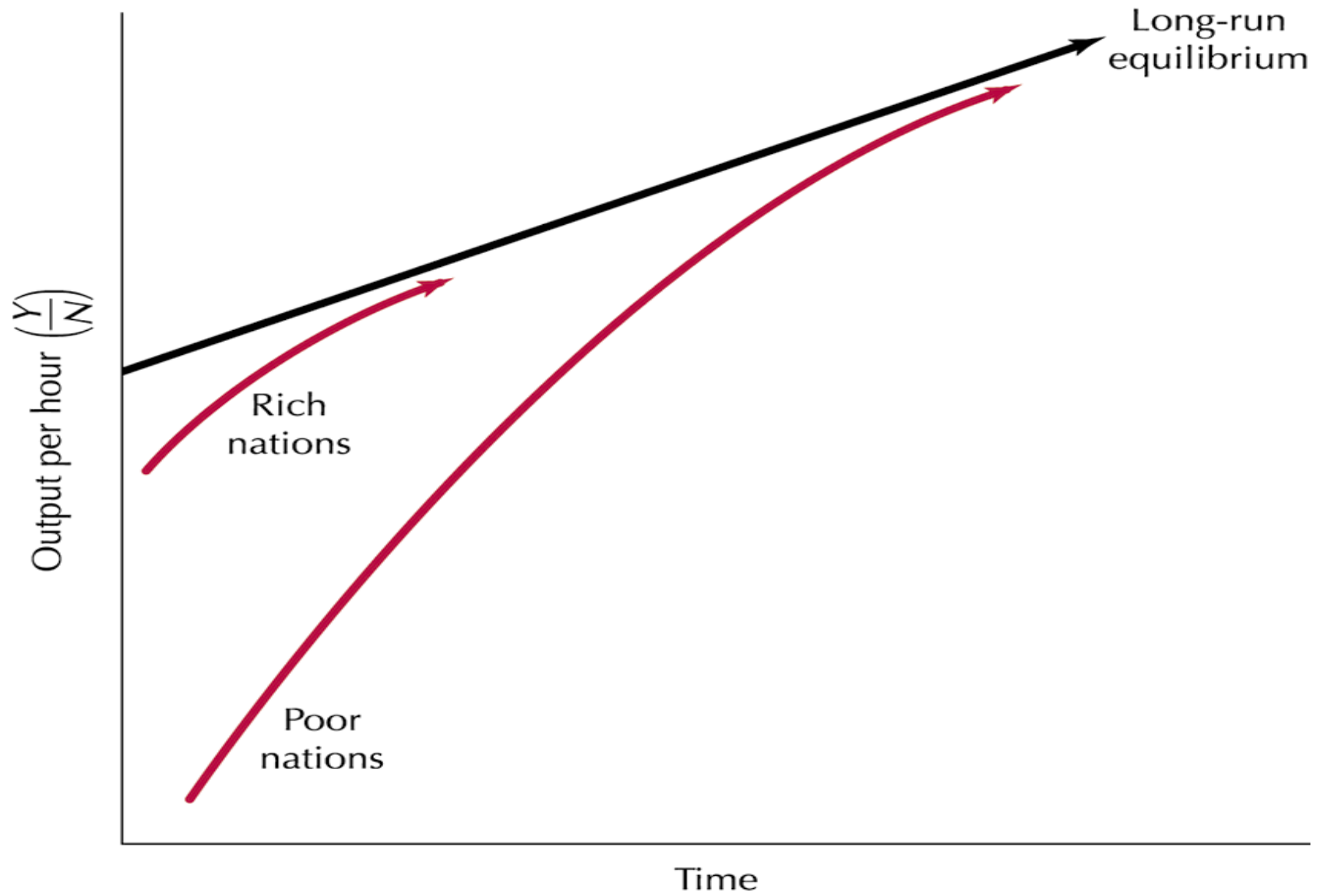
- Hours per Employee (A/E)
- Employment Rate (E/L)
- Labor-force Participation Rate (L/N)

$$\frac{Q}{N} \equiv \frac{Q}{A} \cdot \frac{A}{E} \cdot \frac{E}{L} \cdot \frac{L}{N}$$

Rich vs. Poor Nations: Solow Model Predicts Convergence

- Technology is Freely Available
- All that Holds Back Poor Nations is Low Capital-Labor Ratio
- Marginal Product of Capital is MUCH higher in Poor Countries
- Implies Universal Convergence

POOR NATIONS GROW FASTER WHILE THEY ARE CONVERGING

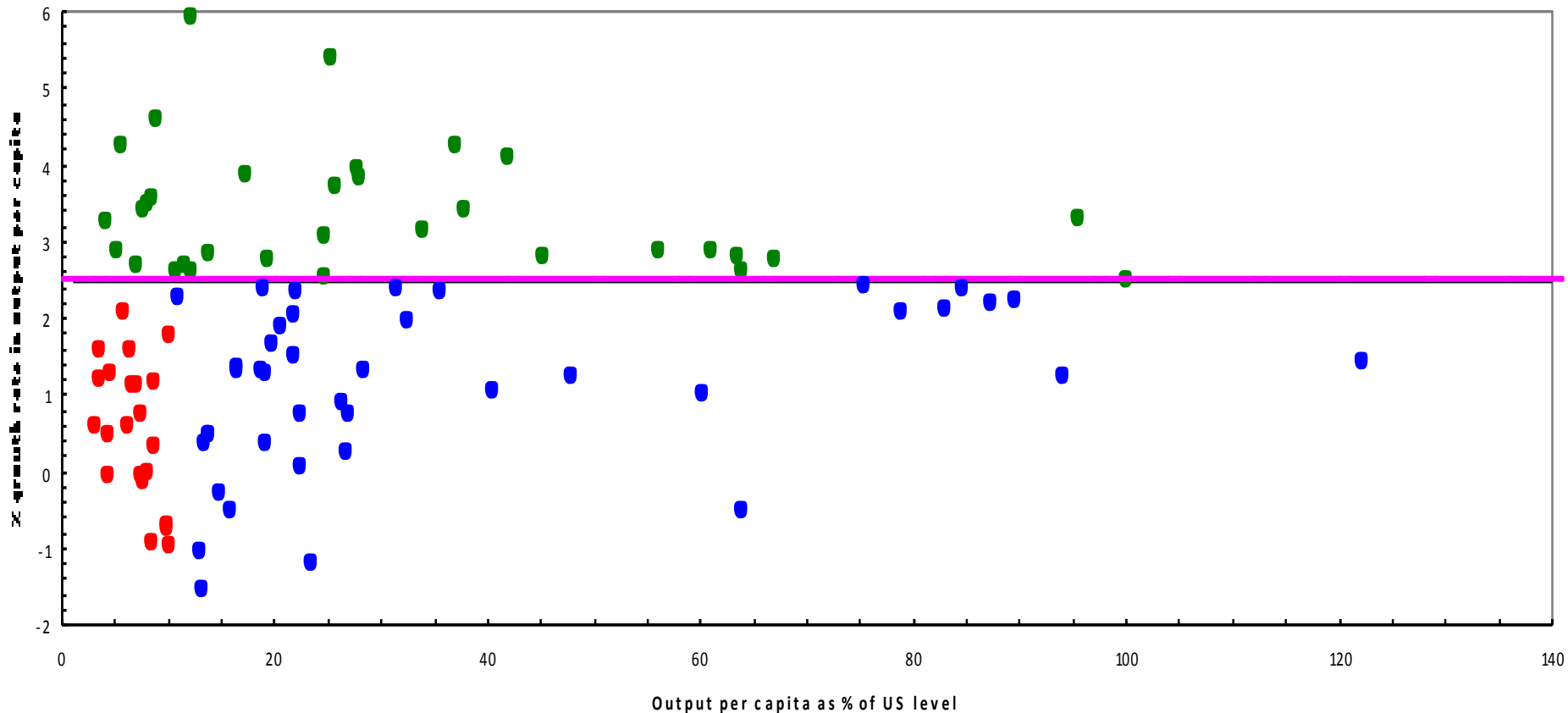


Cross-Country Data: Solow Model Makes a Strong Graphical Prediction

- Convergence Implies the Poorest Nations Grow Fastest
- Look at data over a long period, 1960-2000
- Plot Initial Q/N on the horizontal axis (as a percent of the U. S.)
- Plot Subsequent growth on the vertical axis
- Strong prediction that the plotted points across all countries should have a negative slope

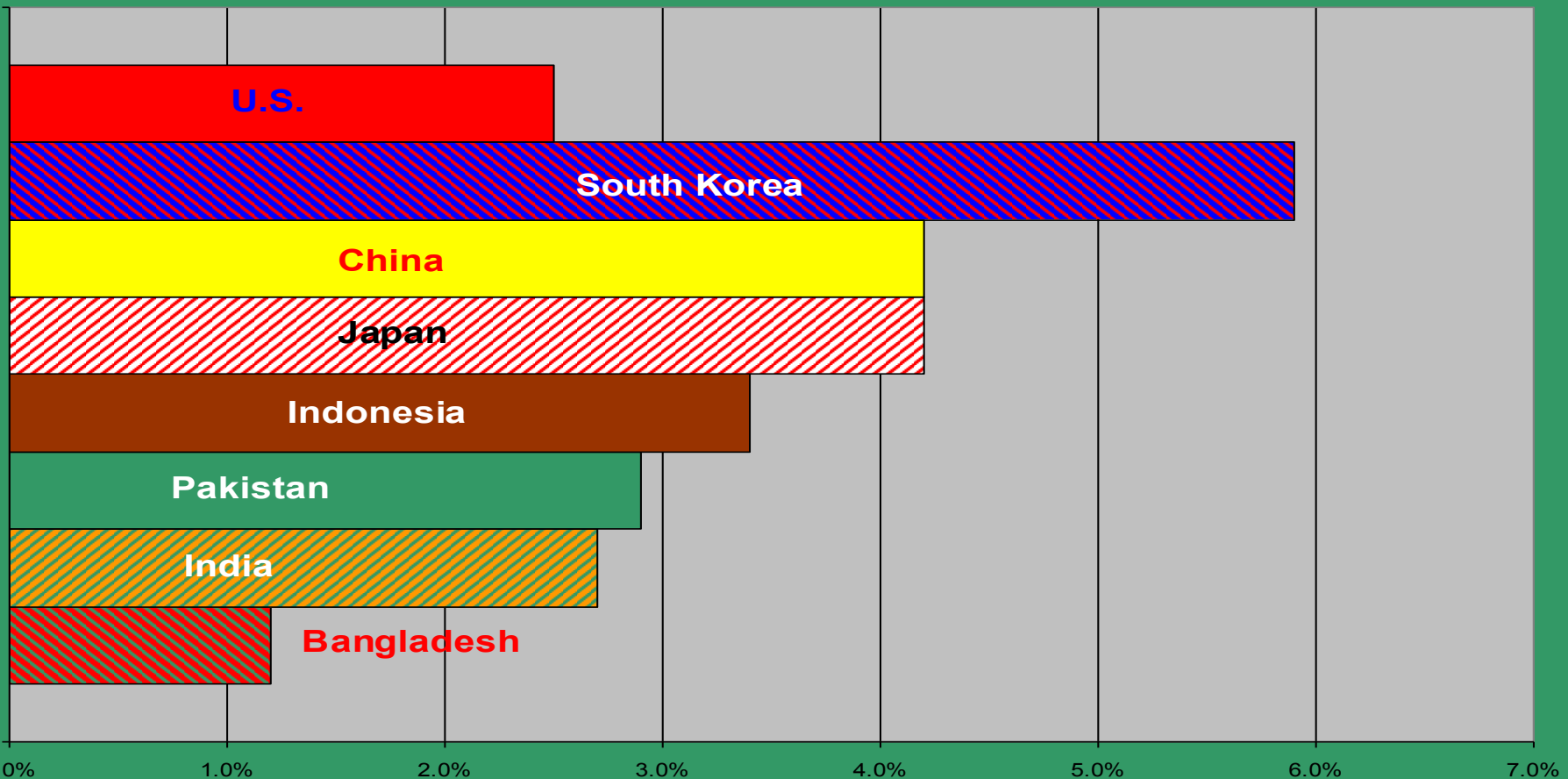
The Failure of Convergence, 1960-2000 (PWT6 data)

Fig. 11-3



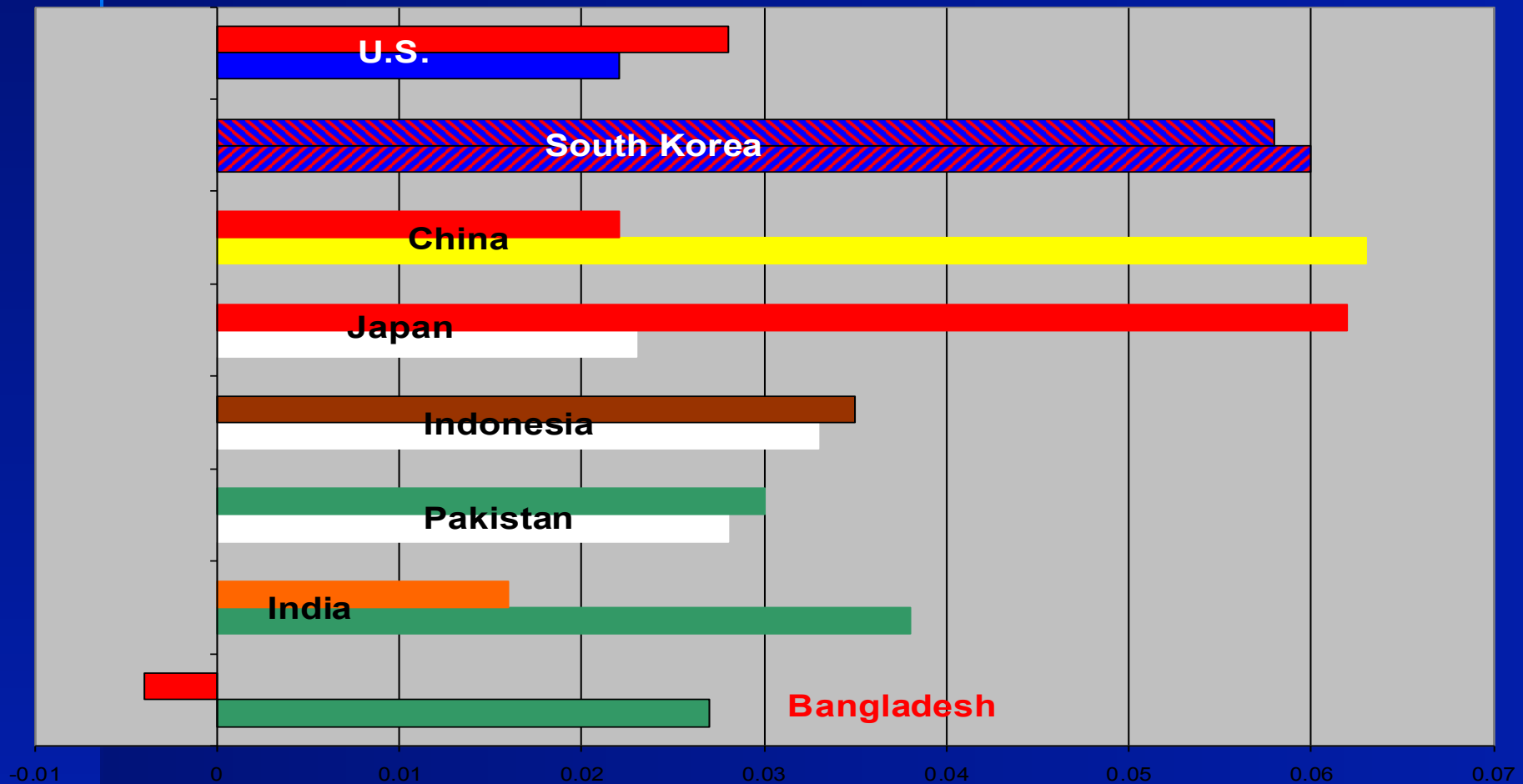
Convergence in Large Asian Nations, 1960-2000

Average Growth, 1960-2000

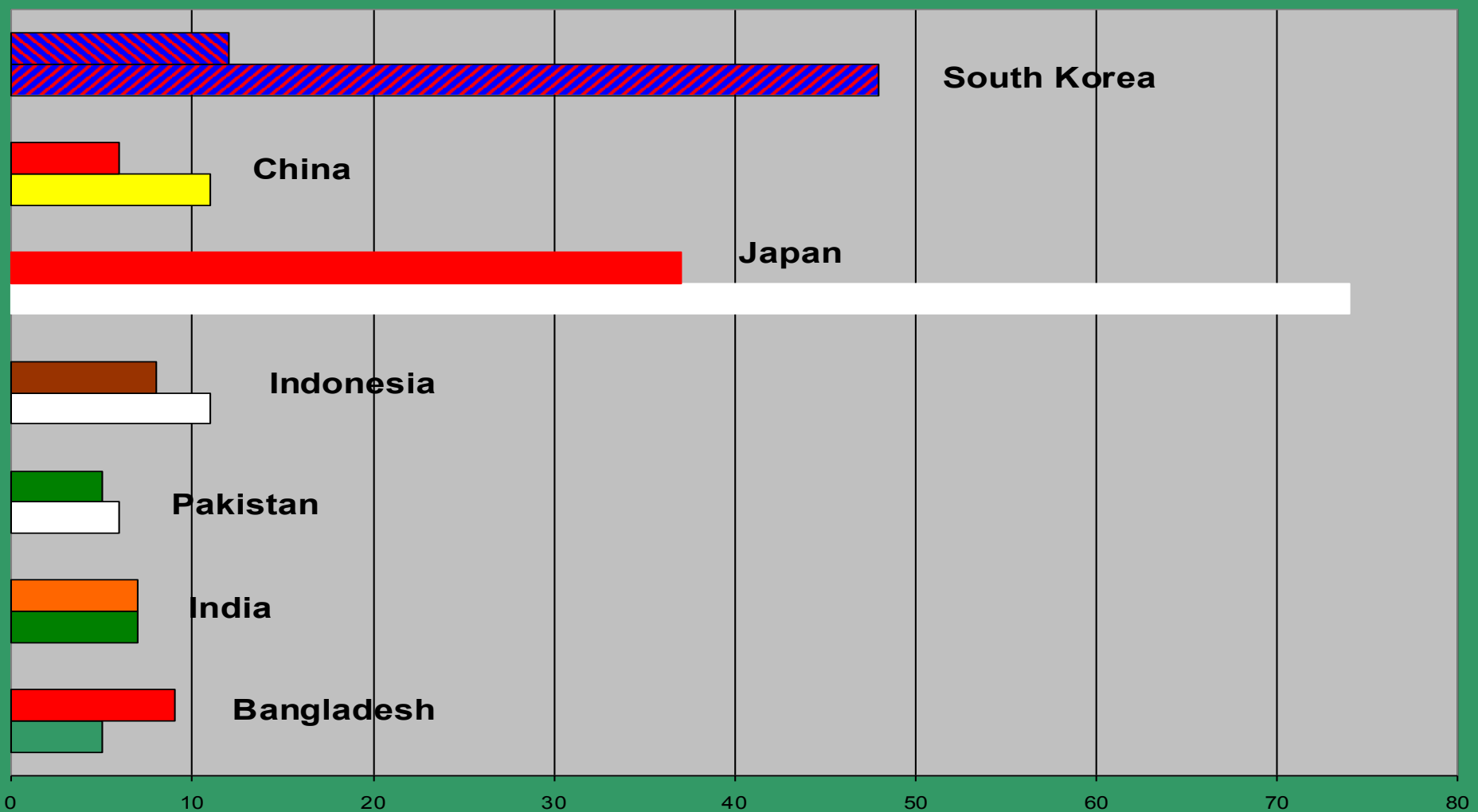


1960-80 vs. 1980-2000: India Does Much Better

Average Growth, 1960-1980 and 1980-2000



Level Relative to U. S., 1960 and 2000



How Can Europe be So Productive Yet So Poor

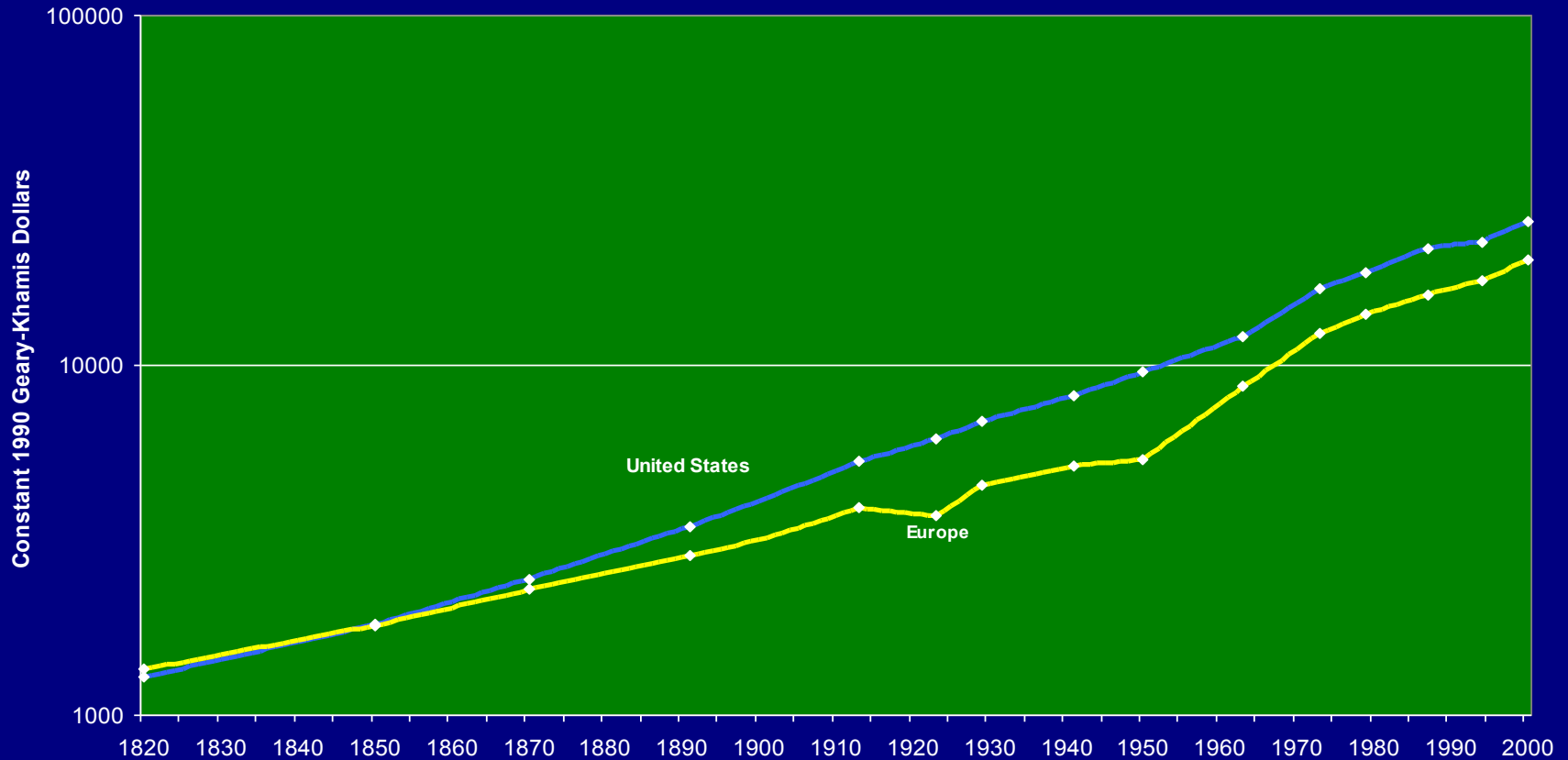
- The History: Europe falls back 1870-1950 and then catches up
- The catch-up, at least until 1995, was almost complete in productivity (Q/A)
- The catch-up petered out in output per capita (Q/N)
- Why?
 - Must be that Europe's A/N is lower
 - When did Europe's A/N decline?
 - How is it decomposed, A/E vs. E/N ?

The Following Graphs are Based on a NBER WP

- “Two Centuries of Economic Growth: Europe Chasing the American Frontier”
- How to Find this and other of my papers and conference presentations:
- Just type “Robert J. Gordon” into Google
- Don’ t type “Robert Gordon” which will give you Robert Gordon University in Scotland

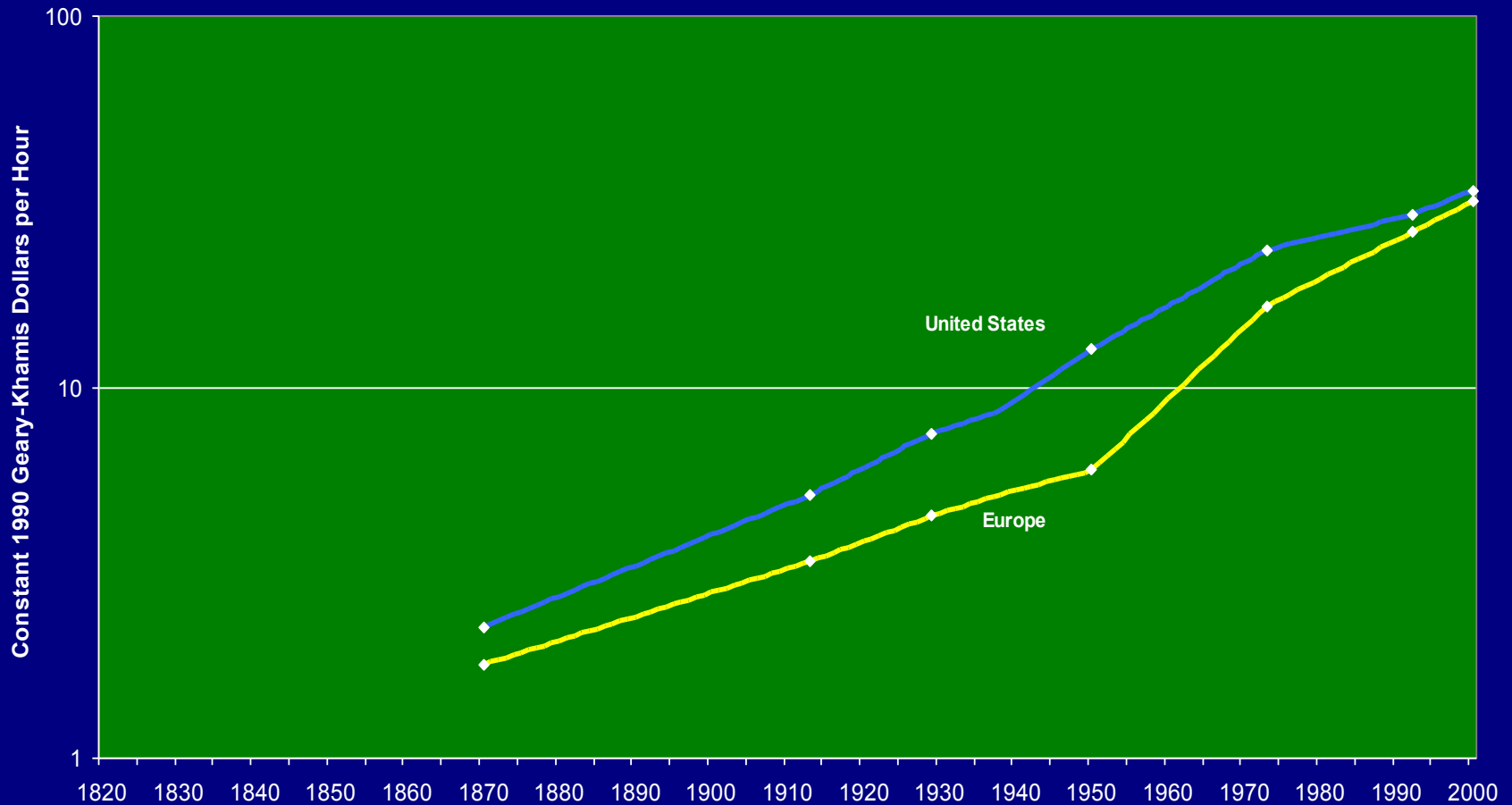
Per Capita Real GDP: Another Failure of Convergence

per Capita Real GDP, Europe and the United States,
Selected Years, 1820-2000



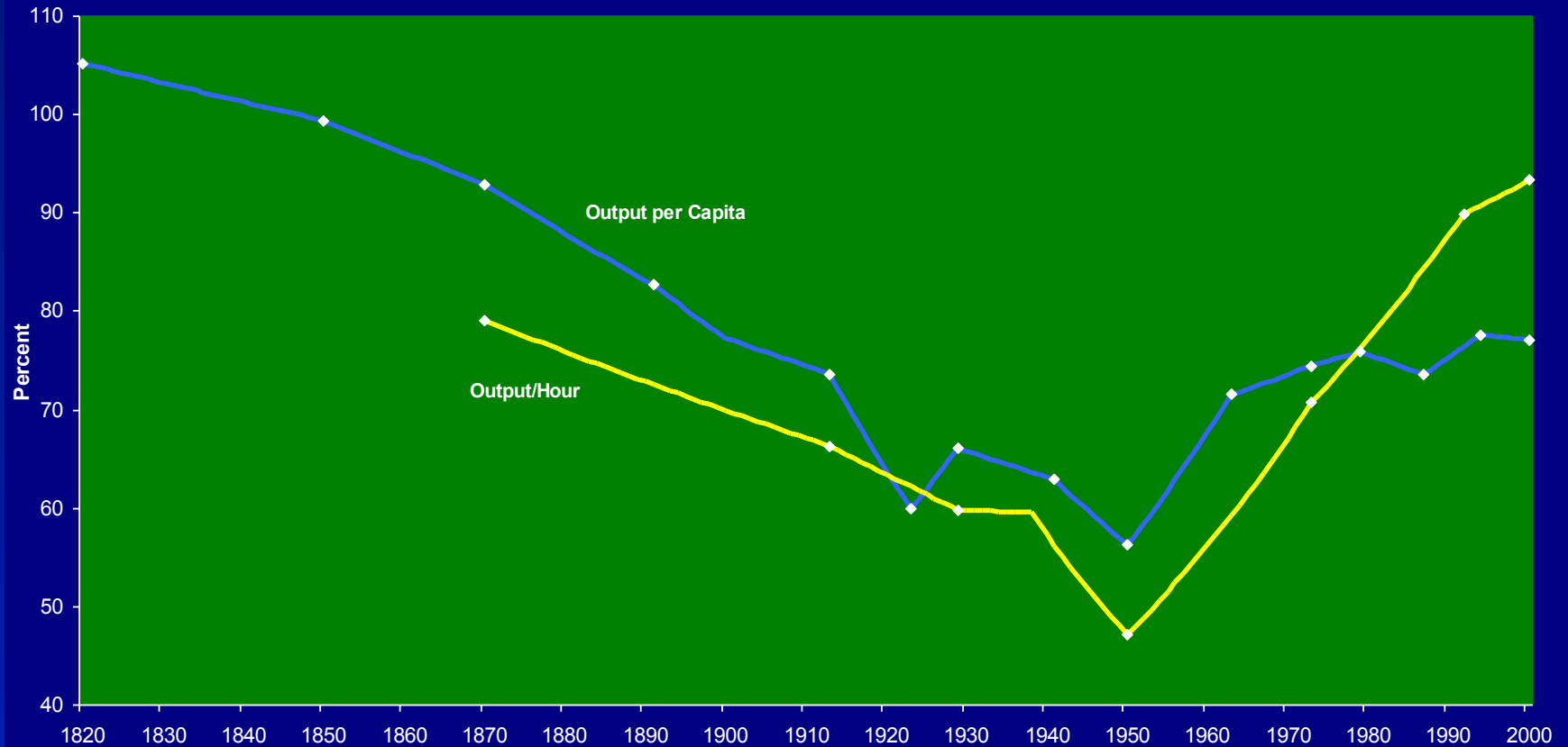
Real GDP per Hour

Real GDP per Hour, Europe and the United States,
Selected Years, 1870-2000



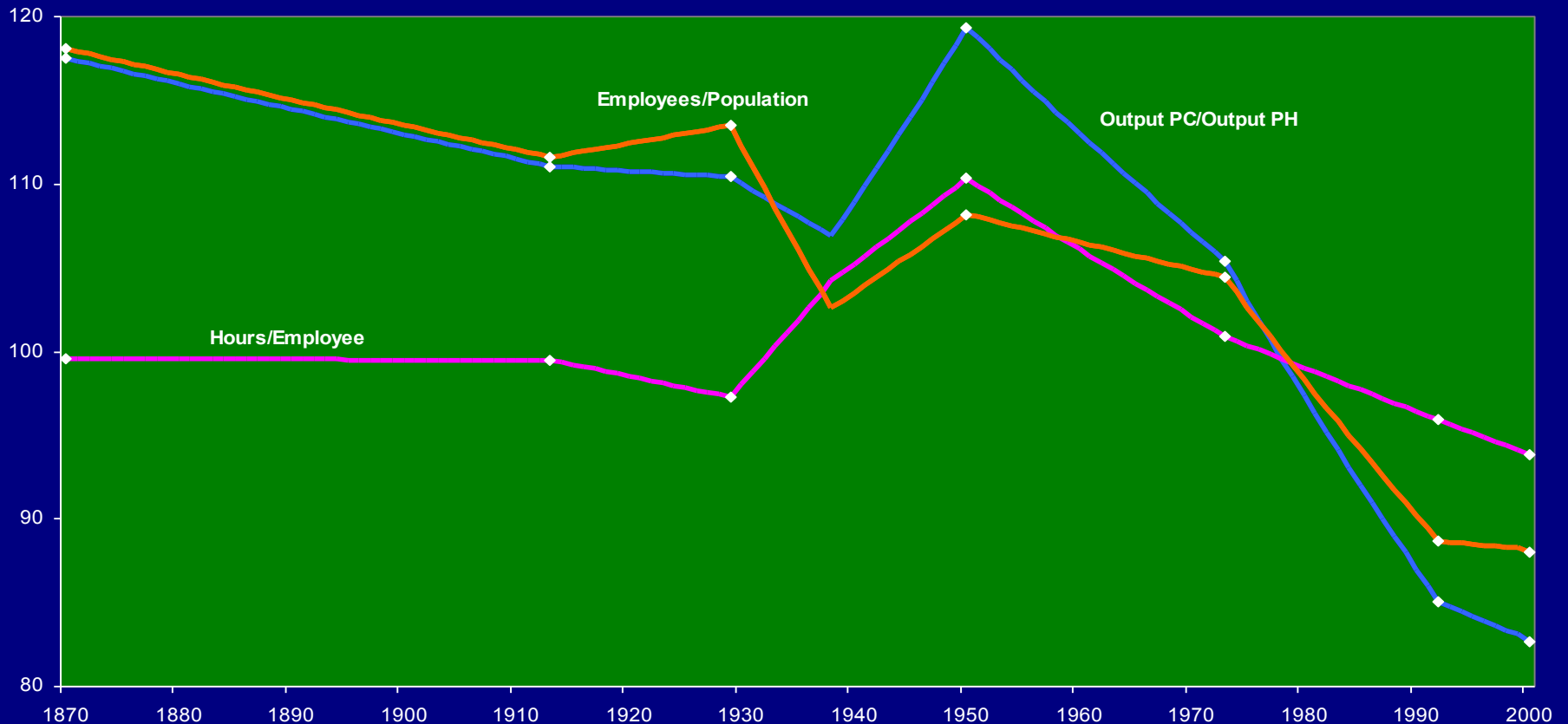
Output per Capita and Output per Hour

Ratio of Europe to the United States,
Output per Capita and Output per Hour,
selected years, 1820-2000



Decomposing the Decline in A/N into A/E and E/N

Ratio of Europe to the United States, Ratio of Output per Capita to Output per Hour,
Decomposed into Hours/ Employee and Employee/Population Ratios, selected
years, 1870-2000



The Basic Irony: Europe Catches Up in Productivity by Cutting Hours per Capita

- Making Labor Expensive to Hire with High Minimum Wage and High Payroll and Social Taxes on Labor
- Pushes Firms Back up the Labor Demand Curve
 - Hours are Cut
 - Marginal and Average Product of Labor are Raised
 - Shortage of jobs, esp. low-skilled job

Standard of living: held down by vacations (H/E)

- Have citizens chosen to use their prosperity to take longer vacations in contrast to Americans?
- Have Europeans been forced to take vacations because of union or parliamentary politics?
- Not Just Vacations, Short Work Weeks
 - The French Hours Police

Europe's Low E/N Matters as much as Low H/E

- High Unemployment
 - High Youth Unemployment
 - High long-term Unemployment
- Low Labor-force Participation
 - Of Youth
 - Of Elderly
 - Average retirement age in France is 58

Social Consequences of Low E/N

- Lack of Job Opportunities for Youth:
 - Late Development of Independence
 - U. S. Youths working in High School and College
- Consequences for Adults
 - Late Marriage Ages
 - Low Fertility Rates
 - Italy: Living at Home with Mama

Phelps: Corporatism in EU, Competition in U. S.

- Corporatism: “penalties, impediments, prohibitions, mandates” that dampen “creative destruction”
 - Does this sound familiar, Indians?
- Youth in Europe, culture of “dependency”
- European youth expect college education for free
- American teens develop independence at age 16 by working at McDonalds
- American college students work and borrow to pay part of their college expenses

Arc de Triomphe in every U. S. City?

Is Q/N Exaggerated?

- Three categories of reasons
 - Excess Energy Use
 - Harsh Climate, Air conditioning
 - Low petrol taxes, high petrol use
 - Overly dispersed metro areas, more energy use
 - Low density means commuting congestion
 - 2m people in prisons, wasted lives and resources
- U. S. Medical Care Inefficiency
 - Medicare Financing Crisis
 - Lack of universal health insurance
 - Defined benefit pension plans and retiree medical costs hurt “legacy” firms
 - General Motors vs. Toyota

Summarizing Welfare Comparison

- Started with Europe/ US Ratios

Q/N 77

Q/A 93

- One-third of A/N difference is voluntary

Q/N 82

Q/A 93

- One-half of remaining YPC difference disappears because U. S. GDP is overstated

Q/N 91

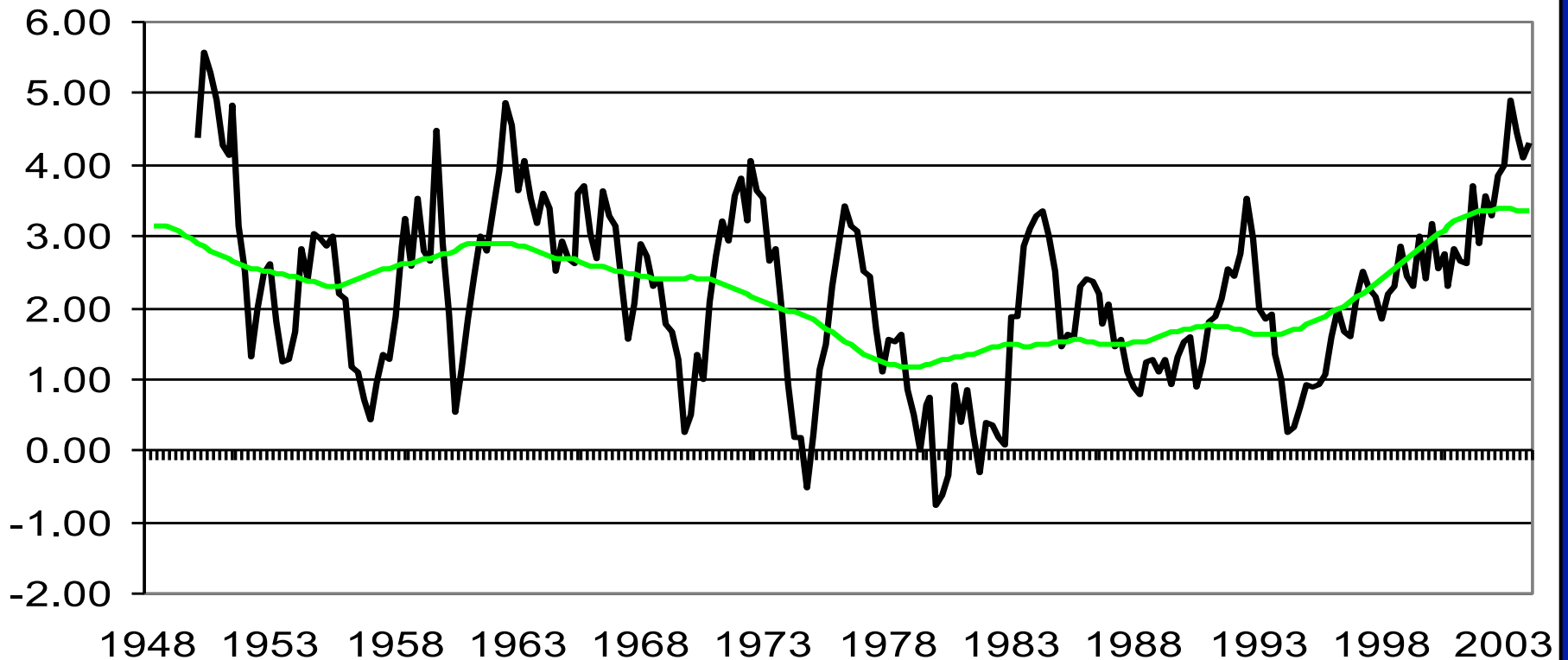
Q/A 102

The New Productivity Growth Divergence: 1995-2003

- Growth rates of GDP per Hour Worked
 - U. S. 2.3
 - Europe 1.2
 - Difference 1.1
- Over eight years, causes Europe/US productivity ratio to fall back from 94 to 85 percent

The U. S. Productivity Growth “Explosion”

LP Actual vs Trend

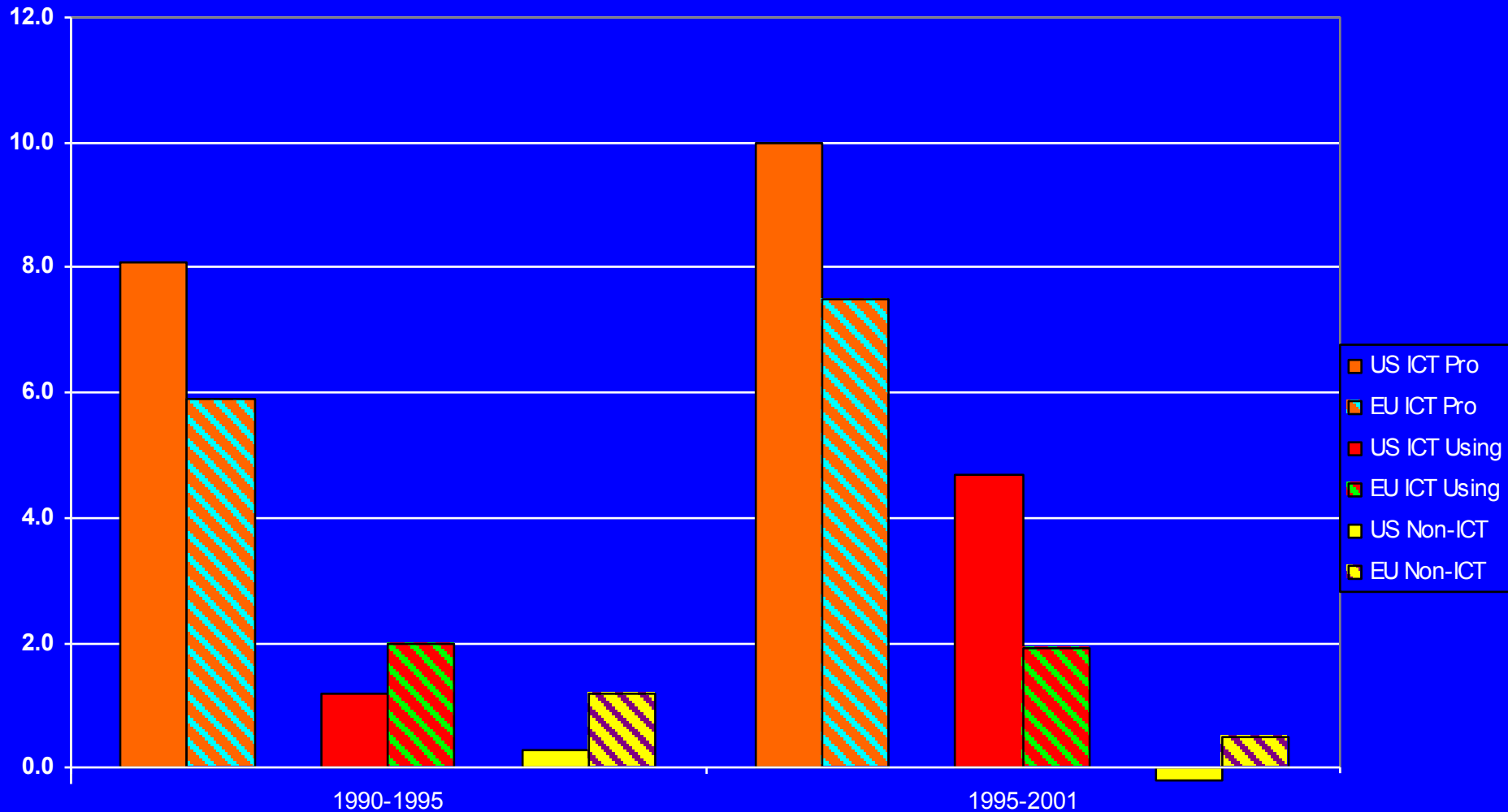


Basic Paradox about IT

- Both Europe and U. S. Rapidly Adopted New Economy Technology in late 1990s
 - Personal Computers
 - Web Access
 - Mobile Phones
- But Europe hasn't taken off
- Conclusion: Role of IT in U. S. revival must have been exaggerated

Finding the Culprit Industries

Output per Hour by Industry Group, EU and US, 1990-2003



Where is the Difference? The Van-Ark Decomposition

- 55% retail trade
- 24% wholesale trade
- 20% securities
- Rest of the economy: ZERO
- U. S. negative in telecom,
backwardness of mobile phones

Europe in Retailing

- Not uniform – Carrefour, Ikea
- U. S. “Big Boxes” (Wal-Mart, Home Depot, Best Buy, Target)
- Europe:
 - Land-use regulation, planning approval
 - Shop-closing restrictions
 - Protection of central-city shopping precincts
 - The MIX of retailing heavily skewed to old-fashioned small retail units
 - Paris drug stores vs. Walgreens

Explanations of Rapid U. S. Productivity Growth: 2000-2003

- Unusual degree of downward pressure on profits
- Intangible capital became important after ICT boom
 - Productivity benefits of ICT investment could have been delayed
 - Mismeasurement of timing of productivity growth
- Questions: Profits are now booming, shouldn't productivity effect go away?
- Productivity growth <2.0% 04:Q3 + 04:Q4

Lessons for India from Comparing EU and US

- First, We Must Qualify This Heavily
 - Nothing in EU or US remotely comparable to the poverty population in India.
 - Indians on their own in policies to reach that “last mile” into the rural villages
- Corporatism vs. Competition: India is the Expert on Corporatism
 - India also knows about small traditional retailing
 - India is an expert on land-use planning, a key explanation of why Europe has lagged behind US in retail productivity growth
 - Encourage Development of Large-Format Retailing

Lessons, Part II

- A Subtle Conclusion about Infrastructure
 - France Has Better Infrastructure than US
 - Freeways = US Interstate Highways
 - TGV
 - Paris: metro, RER, busses (with electronic signs)
- But France has slow Economic Growth
- Conclusion: Infrastructure is neither necessary nor sufficient for econ growth

More Thoughts About India

- “India is Long on Engineering Graduates and Short on Roads”
- Divert Resources by developing an educational opportunity bank, make ugrads borrow, then repay contingent on future income
- Put freed resources into primary, secondary education

Final Thoughts About Infrastructure

- Why Should the Government Raise its Fiscal Deficit to Finance an Airport?
- The World is Waiting to Develop India's Airports
 - The Big 3: BAA, Schipol, and FRAPORT
 - Paraphrasing Churchill 1941 (“give us the tools and we will finish the job”)
 - Give us the land and we will build your airports