

# Issues in Productivity Performance, U. S. vs. Europe

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# Why is European Experience Relevant?

- In projecting U. S. forward for 75 years, there could be a tendency to put excessive weight on the experience of the past seven years
- Looking at Europe, or OECD more generally, provides a wider range of experience and of possibilities

# Comparing Europe and the U. S., Initial Cautions

- Depends on time periods
  - U. S. only in the middle of the pack for 1990-2000. Its “miracle” occurred 1995-2000
  - Part of the U. S. Experience in 1995-2000 was in the context of an unsustainable environment for macro growth and IT investment.

# Verdict Depends on Time Period

Table 1

Labor Productivity by Industry Group, U. S. vs. Europe,  
1990-95 vs. 1995-2000, Annual Growth Rates in Percent

	United States			European Union		
	1990-1995	1995-2000	1990-2000	1990-1995	1995-2000	1990-2000
Total Economy	1.1	2.2	1.7	2.4	1.5	2.0
ICT Producing Industries	6.1	6.5	6.3	6.0	8.5	7.3
ICT Using Industries	1.4	4.2	2.8	1.9	1.3	1.6
Non-ICT Industries	0.4	0.4	0.4	2.4	1.0	1.7

# Convergence Predicts Europe Should Grow Faster

- Distinction between Output per Capita ( $Y_{pC}$ ) and Productivity ( $Y_{pH}$ )
- Much of Europe has caught up in  $Y_{pH}$  but not in  $Y_{pC}$
- Illustrated by OECD: European Union  $Y_{pC}$  at 68%,  $Y_{pH}$  at 93%
- Not much convergence left for  $Y_{pH}$

# Why the Discrepancy between $Y_{pH}$ and $Y_{pC}$ ?

- Roughly equal proportions
  - Lower Hours per Employee
  - Lower Employment per Capita
- Hours per Employee?
  - Vacations, voluntary or partly political?
- Employment per Capita
  - Higher Unemployment Rate
  - Lower Labor-Force Participation

# Aggregation in U. S., Lack of Aggregation in Europe

- Puzzle is not failure in Europe, it's heterogeneity in Europe
- If you disaggregated the U. S., you'd find similar differences:
  - Silicon Valley = Ireland + Finland
  - New England = Denmark + Sweden
  - Austin Texas = Australia
  - Heartland = France or Germany

# Further Distinctions: GDP vs. NFPB Output, Employment vs. Hours

- Standard U. S. Productivity Data: NFPB Output per hour
- Many international comparisons: GDP per Employee
- OECD Figure 1.2



# ICT Penetration vs. MFP Acceleration

- Handout Charts Figures 8 & 9
  - Very loose correlation
  - Good guys: N America, Nordic, Ireland, Australasia (what do they have in common, cold weather so they stay inside a lot playing with their computers?)
  - Weather must be important: Spain and Italy are always at the bottom

# U. S. Scores Because of Shares

- Some countries (Finland, Japan, Korea) strong in ICT mfg but not in services
- U. S. has large shares across the board, ICT mfg, telecom svcs, ICT svcs

# Another Distinction among Sources of Growth

- Human capital, disembodied technical change, embodied technical change
- OECD Table 1.3
  - U. S. Fully adjusted MFP 0.75 for 1995-2000
  - Better than Germany/France/Italy/UK
  - Worse than Canada/Australia/Finland

# Disaggregated Analysis

- Van Ark, return to Table 1
- Big difference lies in ICT using industries
- This is where retailing comes in
- Other sources of difference in retailing between U. S. and Europe

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# It's not just new start-ups

- The biggest difference in ICT use is the performance of U. S. retailing
  - Big firms, Wal-Mart and Home Depot
  - Role of Weak Land-use protection
  - Role of Product regulations, esp. shop-closing regulations in Europe

# Further Studies of the Differences in ICT Payoff

- Computer and internet use have a bigger payoff in U. S. than in Germany
- But maybe there's a left-out variable called "x-efficiency"
  - Makes firms more efficient
  - Makes firms buy a lot of computers
  - Wal-Mart vs. K-Mart

# Broader Issues

- U. S. “Experimentation”
- Combines:
  - Private Research Universities (Silicon Valley and Boston)
  - Venture Capital
  - Patent System



# ICT Effects on Productivity Growth: the 3 Channels

- #1, conventional: capital deepening
- #2, conventional: faster MFP growth in the *production* of computers
- #3, more novel, “ICT as an instrument for innovative activity”
  - But the ICT is available everywhere, why is all the biotech industry in SF, Boston, and San Diego?