Explanations of Slow Growth in Productivity and Real Wages

Slow Growth in Productivity & Wages

• America’s Greatest Economic Problem?
  – Introduction
    • Slow growth in real wages is closely related to slow growth in productivity.
    • Only by raising its total output per hour can an economy sustain a higher hourly real wage for the average worker.
    • Slow growth in productivity and real wages
      – Increases job insecurity
      – Exacerbates the distribution of income
Slow Growth in Productivity & Wages

• Concepts of Productivity and the Real Wage
  – Introduction
    • Two alternative concepts of productivity
      – Labor productivity, \( y - n \)
      – Multifactor productivity, \( a = y - b \cdot k - (1 - b) \cdot n \)
        » where \( b \) is the elasticity of output to capital
        » can measure \( y, k, \) and \( n \) and approximate \( b \)
    – Rearranging
      » \( a = (y - n) - b \cdot (k - n) \)
      » or labor productivity minus \( b \) time the growth in per capita capital stock

  » \( b \cdot (k - n) \) is almost always a constant

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• Concepts of Productivity and the Real Wage (continued)
  – How the Real Wage is Related to Productivity
    • Labor’s share = \( 1 - b = \frac{W \cdot N}{P \cdot Y} \)
      – total compensation of labor divided by total income
    • or Labor’s Share = \( 1 - b = \frac{W}{P} / \frac{Y}{N} \)
      – real wage divided by labor productivity
    • If labor’s share is a constant then real wages must grow at the same pace as labor productivity
      – if \( 1 - b = k \), then growth of \( (1 - b) = 0 \)
      – and \( (w - p) = (y - n) \)
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• Concepts of Productivity and the Real Wage (continued)
  – How the Real Wage is Related to Productivity (continued)
    • One caveat
      – p is the GDP price deflator
        » yields the real product wage
      – c is the Consumption price deflator
        » yields the real consumption wage
      – p and c can, and usually do differ
        » implies real consumption wage growth can differ from productivity growth

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• CASE STUDY: Behavior of Real Wages and Productivity in the United States
  – The Startling Facts About the Productivity Growth Slowdown
    » Figure 10 - 1
  • Productivity is pro-cyclical
    – Stronger in booms, weaker in recessions
    » Table 10 - 1
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- **CASE STUDY:** Behavior of Real Wages and Productivity in the United States (con’t)
  - One Big Wave?
    - What is unusual, recent slow growth or 1913 - 1972
    - Several facts
      - MFP slowdown not due to lower investment and slower k
      - MFP is highly variable over long periods of time
      - Can identify but not explain slow MFP growth
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- CASE STUDY: Behavior of Real Wages and Productivity in the United States (con’t)
  - Why does Real Wage Growth Lag Behind that of Labor Productivity?
    - Recent behavior of real wages and productivity
      » Figure 10 - 2
      » Table 10 - 2
    - Several things to notice
      - Labor’s share relative constant
      - real product wage approximately labor productivity
      - real consumption wage lagged behind

Figure 10-2
Labor Productivity and the Real Consumption Wage, Four-quarter Moving Average, 1960–96
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• CASE STUDY: Behavior of Real Wages and Productivity in the United States (con’t)
  – Looking for Culprits
    • Did slower productivity growth cause slower real wage growth or vice versa?
    • What caused the productivity growth slowdown?
    • Why have prices for consumption expenditures risen more rapidly than for total output?

• Does Slow Productivity Growth Cause Slow Real Wage Growth, or Vice Versa?
  – An Adverse Productivity Shock Reduces the Real Wage, Hours, or Both
    » Figure 10 - 3 a
  • Potential causes
    – Other factors of production decline
    – If MFP were to decline
      » Implications of rigid versus flexible wages
  • Adverse shock to labor productivity reduces real wages
Slow Growth in Productivity & Wages

- Does Slow Productivity Growth Cause Slow Real Wage Growth, or Vice Versa?
  - The Possibility of Feedback from Low Real Wages to Low Productivity
    » Figure 10 - 3 b
  - Possible causes
    - Any event that increase the supply of labor
      » Increased immigration
      » Increase participation rate
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• Does Slow Productivity Growth Cause Slow Real Wage Growth, or Vice Versa?
  – The Possibility of Feedback from Low Real Wages to Low Productivity (continued)
    » Figure 10 - 3 b
  • Possible causes (continued)
    – Any event that reduces the wage at which labor is willing to work
      » Reduced union power
      » Reduction in real minimum wage
      » Increased anxiety about job security
      » Increased foreign competition

Slow Growth in Productivity & Wages

• Does Slow Productivity Growth Cause Slow Real Wage Growth, or Vice Versa?
  – The Possibility of Feedback from Low Real Wages to Low Productivity (continued)
    » Figure 10 - 3
  • The level of labor productivity and the real wage are related
  • The growth of labor productivity and the real wage are also related
    – Inadequate capital formation
    – Inadequate education and training
    – Inadequate infrastructure
Slow Growth in Productivity & Wages

• Sources of Adverse Productivity Shocks
  – Dimensions of the Productivity Slowdown
    » Figure 10 - 3
    • Manufacturing versus nonmanufacturing sectors
      – Within manufacturing, durable vs nondurable goods
      – Within durable goods, computers
    • Labor productivity and MFP both slow
      – Slower capital accumulation is not the culprit

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Slow Growth in Productivity & Wages

• Sources of Adverse Productivity Shocks
  – Slower Growth in Measured and Unmeasured Inputs
    • Measured Capital per Labor Hour
      – k slowed, n accelerated after 1973
      – Inflation and the tax system
      – Labor force participation rate
    • Raw materials and energy
      – Why did MFP not reaccelerate after energy prices fell
    • Decline in Labor Quality
      – Composition of work force changed after 1973
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• Sources of Adverse Productivity Shocks
  – Infrastructure

  – Problems of Particular Industries
    • Mining
    • Construction
    • Public utilities

• Sources of Adverse Productivity Shocks
  – Running Out of Resources and Ideas
    • Depletion hypothesis
      – More people looking for less oil
      – Fewer large important changes in productive techniques
        » Is 1913 - 1972 the exception

  – Is the Slowdown Partly an Illusion?
Slow Growth in Productivity & Wages

• Can Labor Supply Shifts Contribute an Explanation?
  – The Contrast between Europe and the US
    » Table 10 - 4
    • The US and Europe have different labor market policies
    • Implications for employment, unemployment, real wages, and productivity

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• The Role of Growing Inequality
  – Median Real Wage Growth Falls Short of Average Real Wage Growth
    » Figure 10 - 4
  
  – High and Increasing Inequality
    • All of the real wage gains have accrued to workers with above-median real wages
      » Figure 10 - 5
      » Figure 10 - 6
      » Figure 10 - 7
Figure 10-4  Labor Productivity and Three Concepts of the Consumption Real Wage: Mean, Median, and Median Male, 1973–95

Figure 10-5  Ratio of Family Income of the Top 5 Percent of Families to the Bottom 20 Percent, 1947–95

* Part of the increase in inequality in 1995 is attributable to changes in data collection methodology.
Figure 10-6  Annual Growth Rate of Real Family Income, by Quintile (Fifth), 1947–73 Contrasted with 1973–94

CONVERGENCE FOLLOWED BY DIVERGENCE

Figure 10-7  Ratio of Family Income in 90th Percentile to that in 10th Percentile, Mid-1980s

INCOME INEQUALITY IS FAR HIGHER IN THE UNITED STATES THAN IN OTHER ADVANCED NATIONS
Slow Growth in Productivity & Wages

• The Role of Growing Inequality (con’t)
  – Sources of High and Growing Inequality
    • US labor market flexibility
    • Technology has raised the demand for high-skilled workers
    • Increase relative supply of low-skilled workers
      – Increased international competition

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• Is Real Wage Stagnation a Figment of Measurement Error?
  – Alternative Real Wage Indexes
    » Figure 10 - 8
    • Alternative nominal wage measures
    • Alternative price indexes
  – Biased Price Indexes
    • Price indexes overstate inflation in a rapidly changing economy
  – A Balanced Assessment
Slow Growth in Productivity & Wages

• Conclusion: What Policies Are Available to Boost Growth?
  – Policies have focused on boosting savings and investment
    • But low capital formation has not been the problem
  – The role of the government budget deficit
  – The role of human capital
    • Cost and timing
  – The role of regulations
    – Improve the productivity and price statistics