

# Issues in the Comparison of Welfare Between Europe and the United States

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# The Contribution of This Paper

- Everything in this paper about Europe refers only to the EU-15.
- Focus on the puzzle “How Could Europe be So Productive Yet so Poor?”
- Relatively low output per capita vs. relatively high labor productivity implies low hours per capita in Europe
- The paper starts by sorting the data on low EU hours per capita. How much is due to low hours per employee? To high unemployment? To low labor-force participation?
- What are the Plausible Causes?
- Then, do those plausible causes explain the post-1995 turnaround in employment per capita?

# Useful Abbreviations to Understand Europe's Evolution

- Abbreviations:
  - Real GDP is  $Y$
  - Population is  $N$
  - Hours of Work are  $H$
- The Standard of Living is output per capita ( $Y/N$ )
- Productivity is output per hour ( $Y/H$ )
- The Key Equation
  - $Y/N \equiv Y/H * H/N$

# Other Helpful Relationships

- A Basic Point about Europe
- The real turnaround since 1995 has been in only part of hours per capita, so we need to split it apart
- $H/N \equiv H/E * E/N$
- Europe has experienced a sharp turnaround of  $E/N$  since 1995 but not  $H/E$ . We'll see charts shortly

# Next, What are the Causes of Low European Hours per Capita?

- There are many hypotheses, but so far there have been few papers that provide a unified treatment of the pre-1995 decline in hours per capita and the post-1995 recovery
- The candidate explanations for low H/N : high taxes, employment and product market regulation, generous unemployment benefits, and strong unions
- These are called “policy variables”
- Much of the literature is a battle of assumptions and anecdotes; we provide econometric evidence quantifying the role of the policy variables in the decline of hours before 1995 and the post 1995 recovery

# Introduction to the Debate

- “Why is Europe so Productive yet so Poor?”
- If  $Y/H$  caught up but  $Y/N$  languished, then the superficial Answer is  $H/N$  has been falling
- Why?
  - Blanchard (*JEP*, p. 4): “The main difference is that Europe has used some of the increase in productivity to increase leisure rather than income, while the United States has done the opposite.”
- Blanchard will be the straw man in this discussion of more subtle interpretations
  - As you will see, his interpretation is outrageously simplistic
  - What has happened in Europe has almost nothing to do with a “taste for leisure”
  - Tastes? In 1960 Europeans worked more  $H/E$  than Americans

# An Opposing View to Blanchard's "Taste for Leisure"

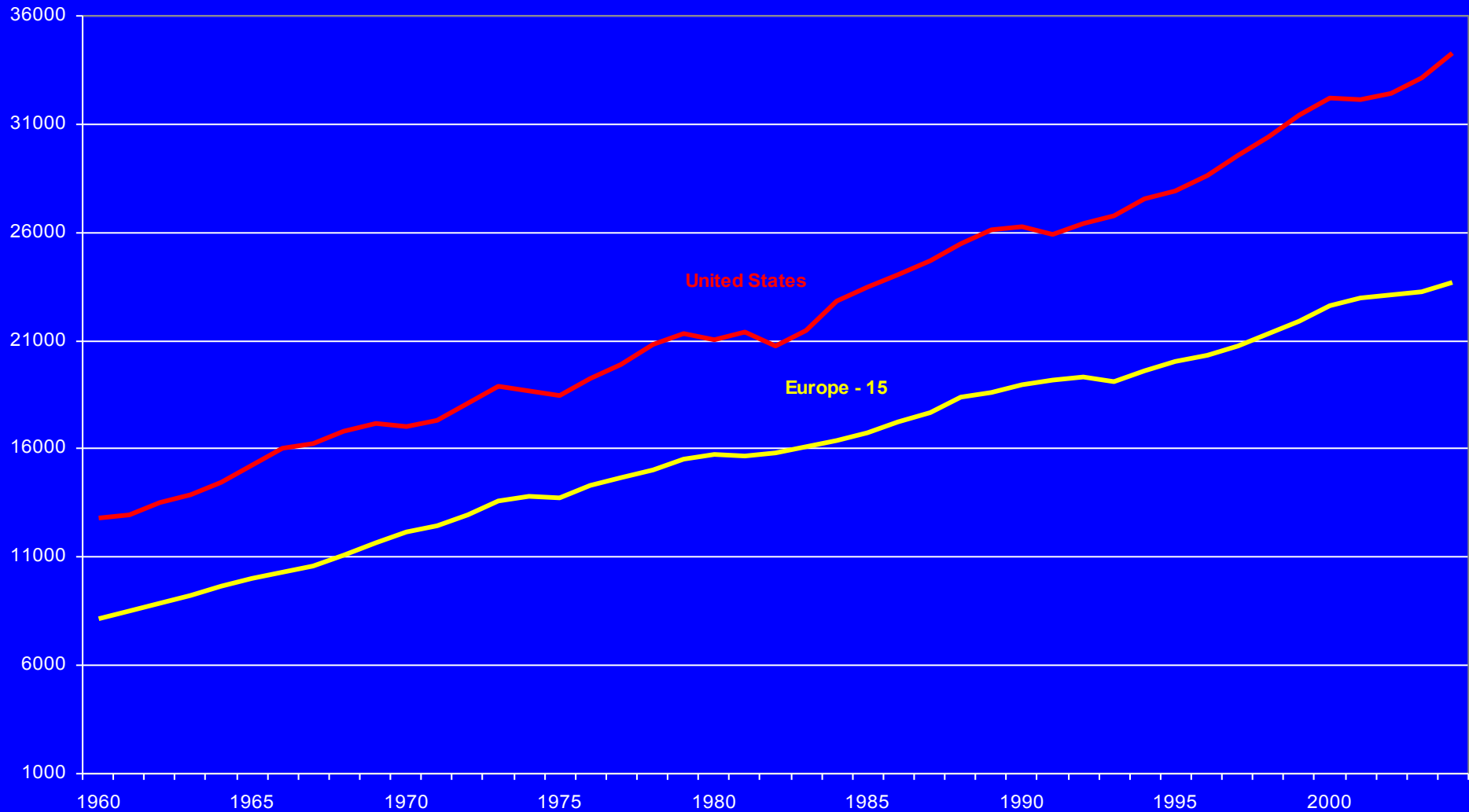
- By definition the decline in Europe's  $Y/N$  related to  $Y/H$  can be divided into:
  - Decline in *relative*  $H/E$  (35% 1960-95)
  - Decline in *relative*  $E/N$  (65% 1960-95)
- Voluntary Leisure?
  - Some of decline in  $H/E$  is not voluntary
  - Most of decline in  $E/N$  is not voluntary
- Two new pieces of stunning evidence on leisure
  - Europeans don't enjoy more leisure, there is a one-for-one tradeoff between market work and household production
  - People actually enjoy work
  - Evidence that people don't enjoy household production

# A Preview of the Charts

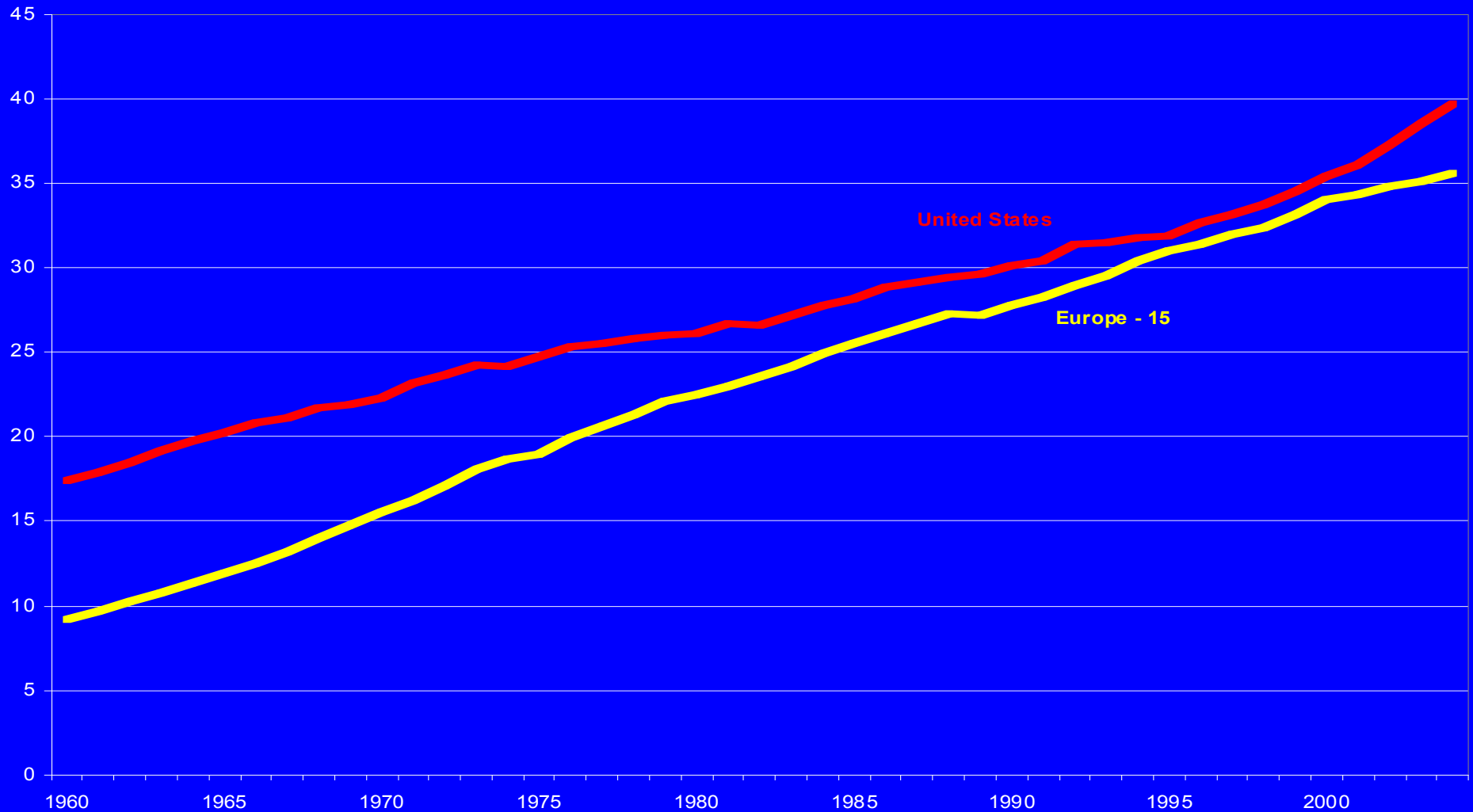
- Comparison of  $Y/N$  and  $Y/H$ , how could Europe be so productive yet so poor?
- Breakdown of  $H/N$  into  $E/N$  vs.  $H/E$
- Raw Numbers on  $E/N$  and  $H/E$
- $E/L$  and  $L/N$  by Age
- Time Series Behavior of Tax Wedge and other Policy Variables: There was actually a change after 1995
  - Lower Taxes after 1995 actually helped cause a turnaround of European  $E/N$  from decline to increase



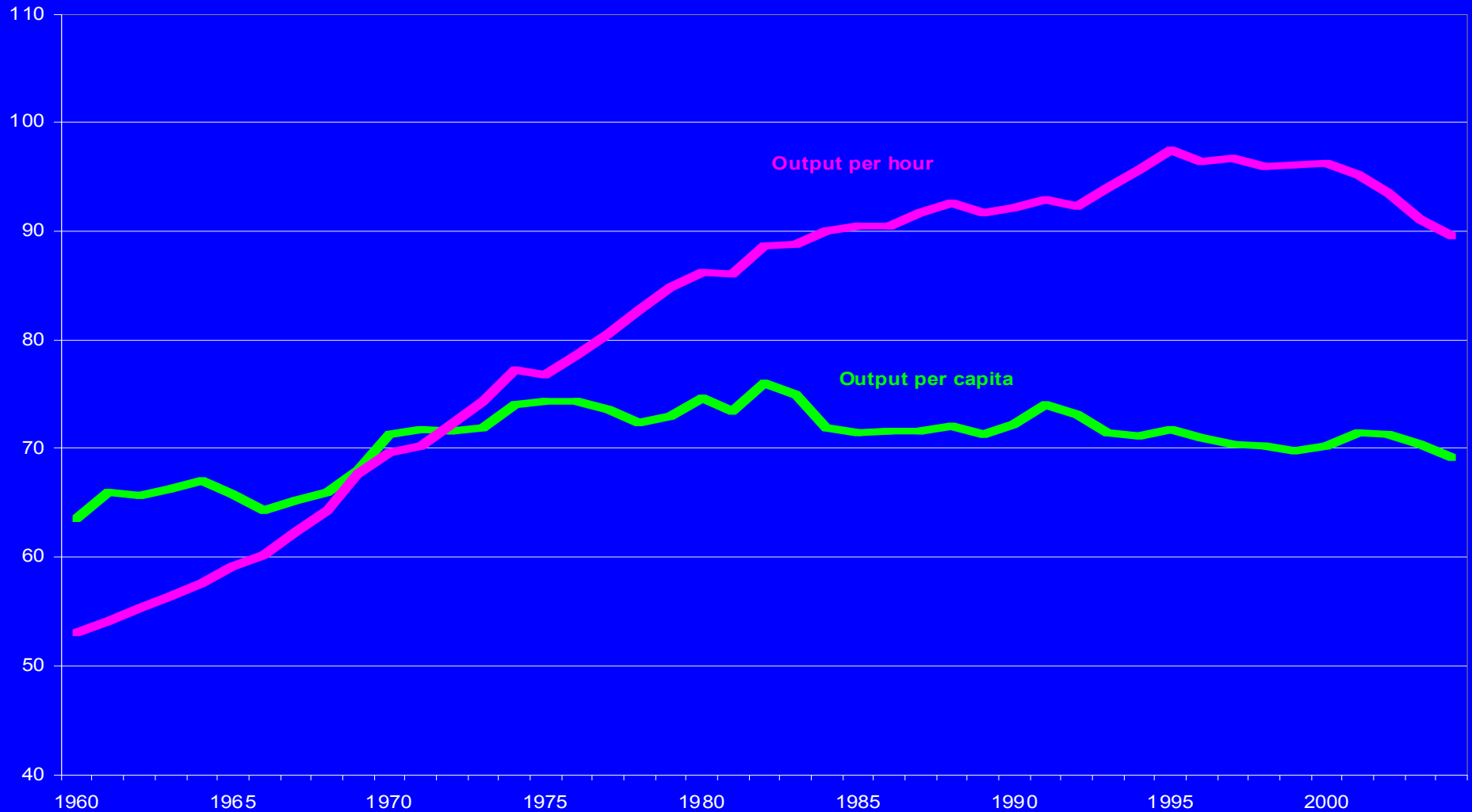
# Y/N since 1960: Europe Fails to Converge and then Falls Behind



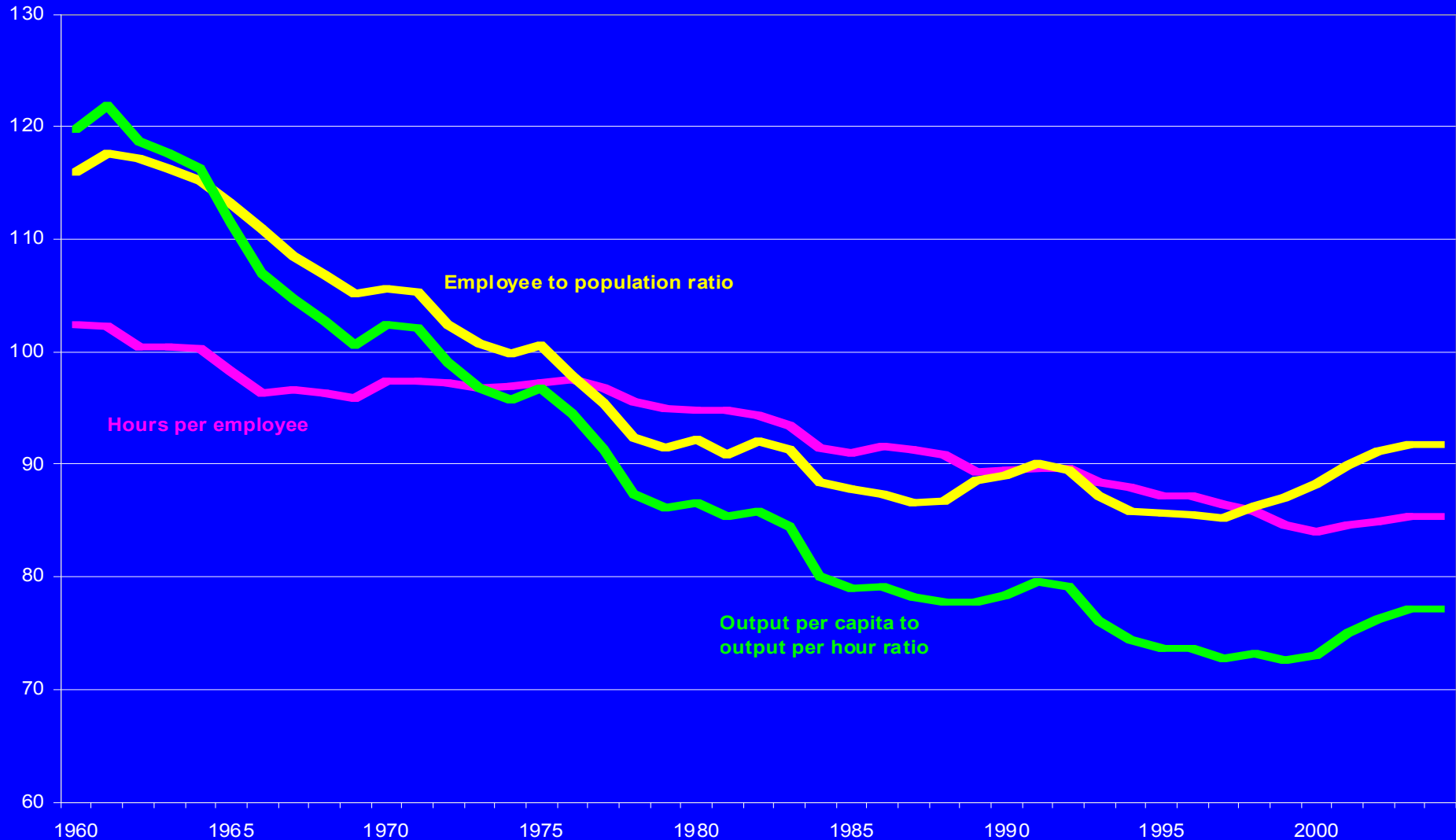
# Productivity (Y/H) Post-1960: The Ratio Reaches 96.9% in 1995



# The EU/US Ratios: Y/N compared to Y/H



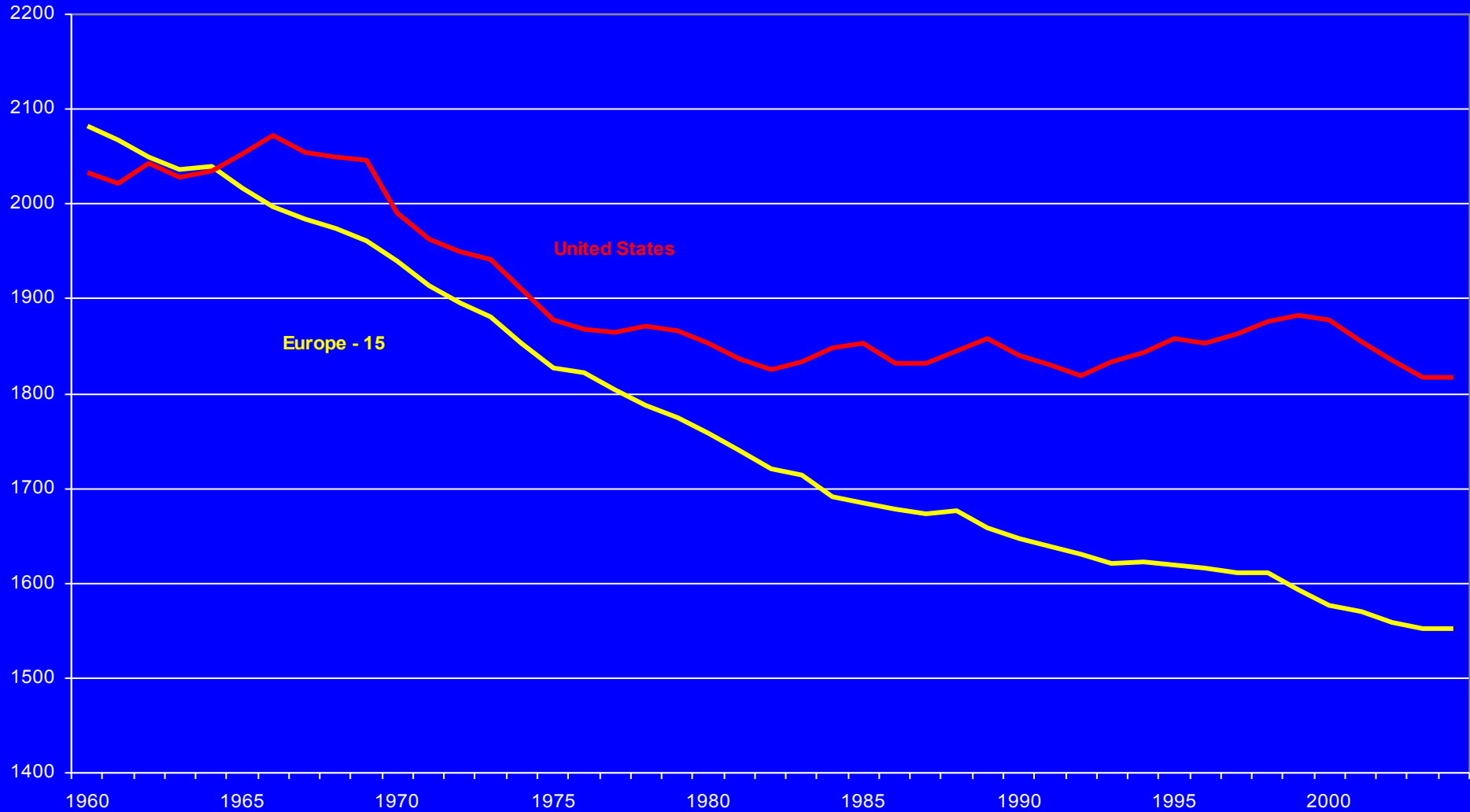
# $(Y/N)/(Y/H)=H/N$ and the Breakdown $E/N$ vs. $H/E$



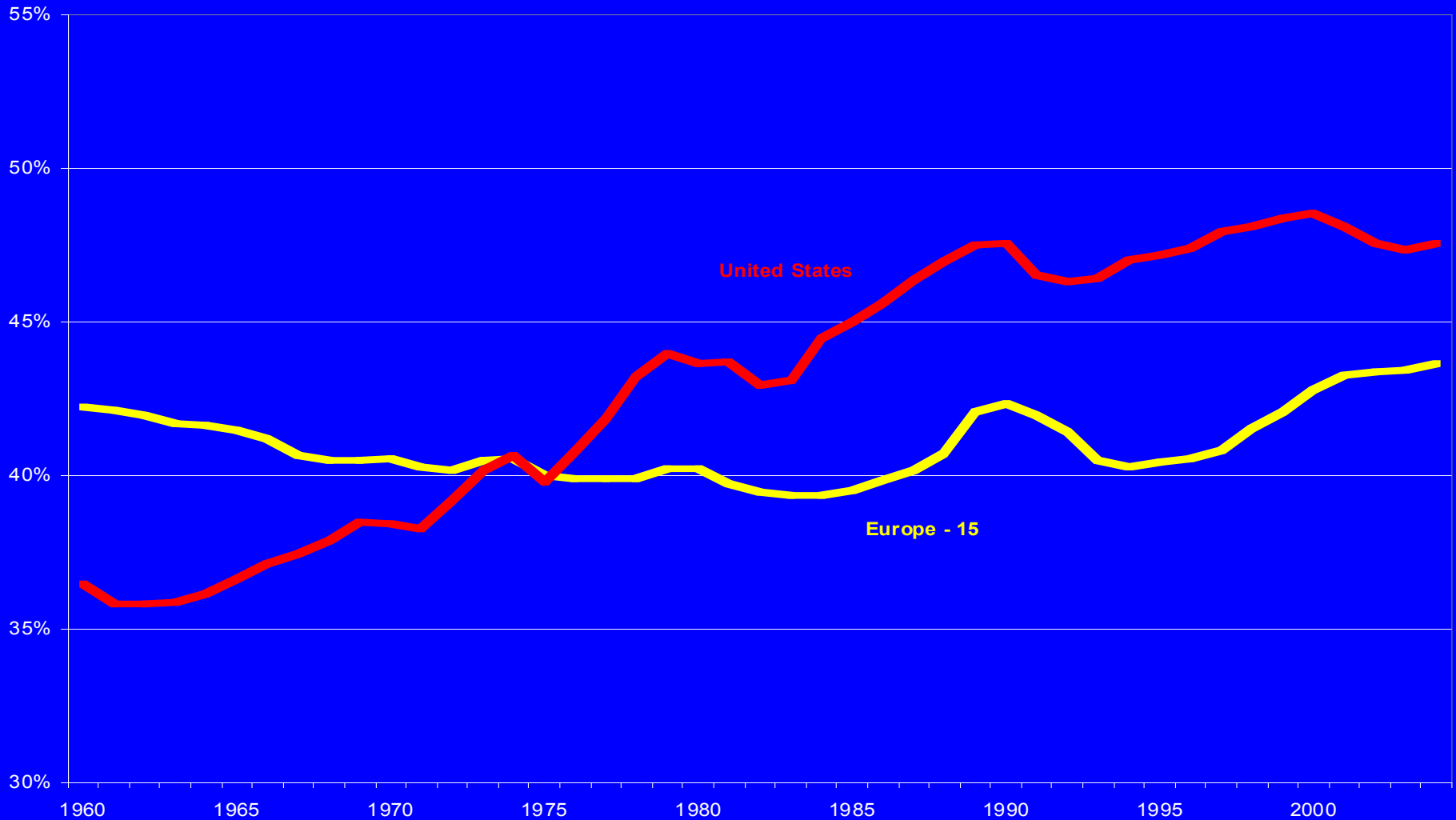
# Recent Papers in the NBER Macro Annual have totally missed . . .

- Everyone (Prescott, Sargent, Alesina) is still debating the sources of low European H/N in 1995 without noticing the post-1995 turnaround
- Why the turnaround?
  - A reversal of labor market regulations?
  - A reversal of product market regulations?
  - A reversal of labor taxes?
- But the decline in hours/employee did not turn around

# Raw Numbers on Hours per Employee



# Employment per Capita: U.S. Women Marched Off to Work 1965-1990



# Summary of Turnaround in E/N vs. H/E, Ratios of EU/US

Levels and Growth Rates of European Hours per Capita, Hours per Employee, and Employees per Capita Compared to the United States, 1960-2004, percent

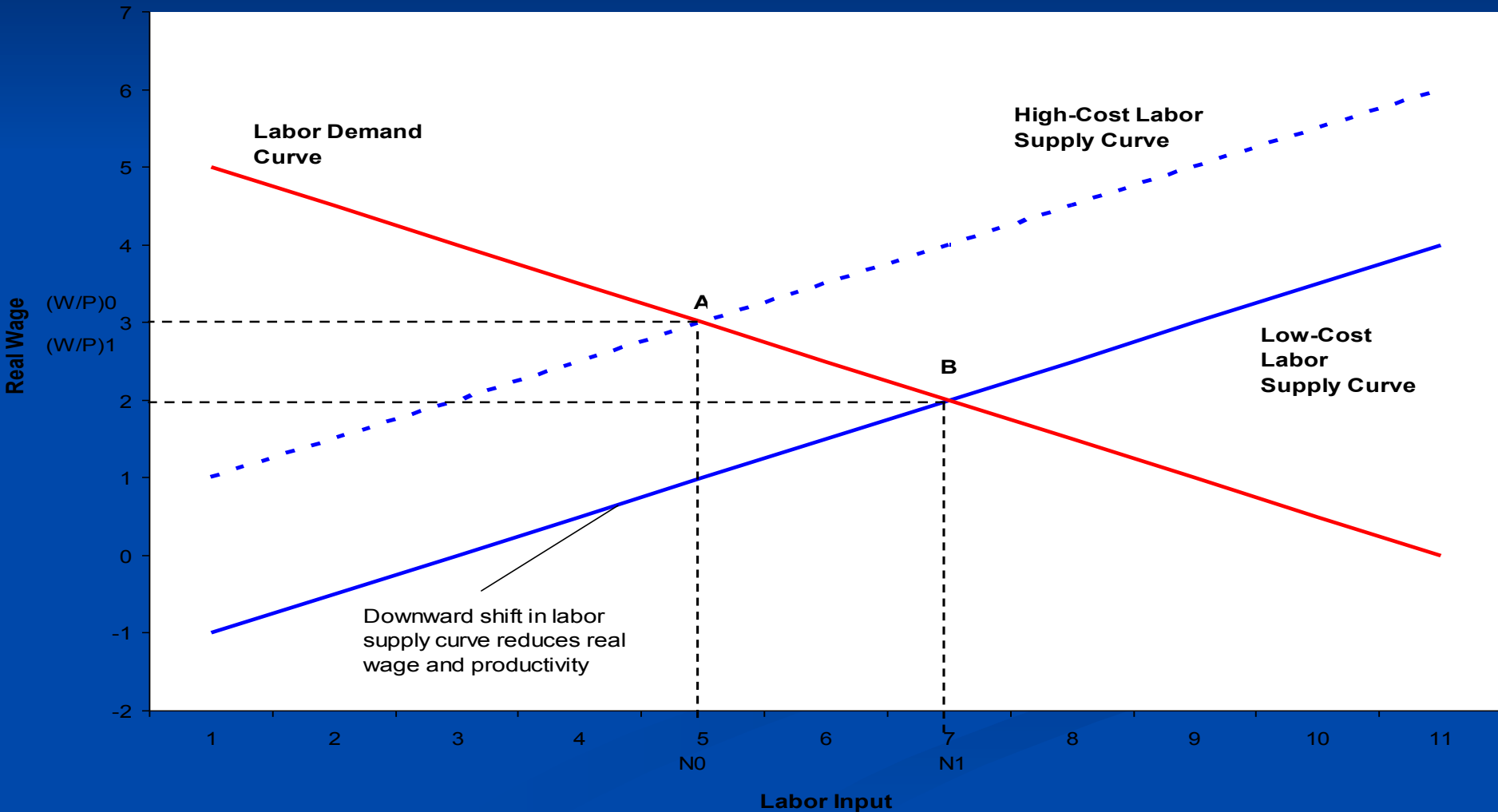
	Hours per Capita	Hours per Employee	Employees per Capita
<b>Levels</b>			
1960	119.8	102.4	115.9
1970	102.4	97.4	105.6
1995	73.6	87.1	85.7
2004	77.2	85.4	91.7
<b>Annual Growth Rates</b>			
1960-70	-1.6	-0.5	-0.9
1970-95	-1.3	-0.4	-0.8
1995-2004	0.5	-0.2	0.8



# An Outline of Issues for Discussion

- Europe's failure to converge is not just a matter of voluntary vacations
- Much more of the change 1960-95 was the decline in employment per capita
  - High Unemployment by making labor expensive
  - Low Labor-force participation concentrated in young and old ages
    - Did politics mandate early retirement, what a waste!
- Even lower hours are not entirely voluntary
  - “If the French really wanted to work only 35 hours, why do they need the hours police?”

# Textbook Labor Economics



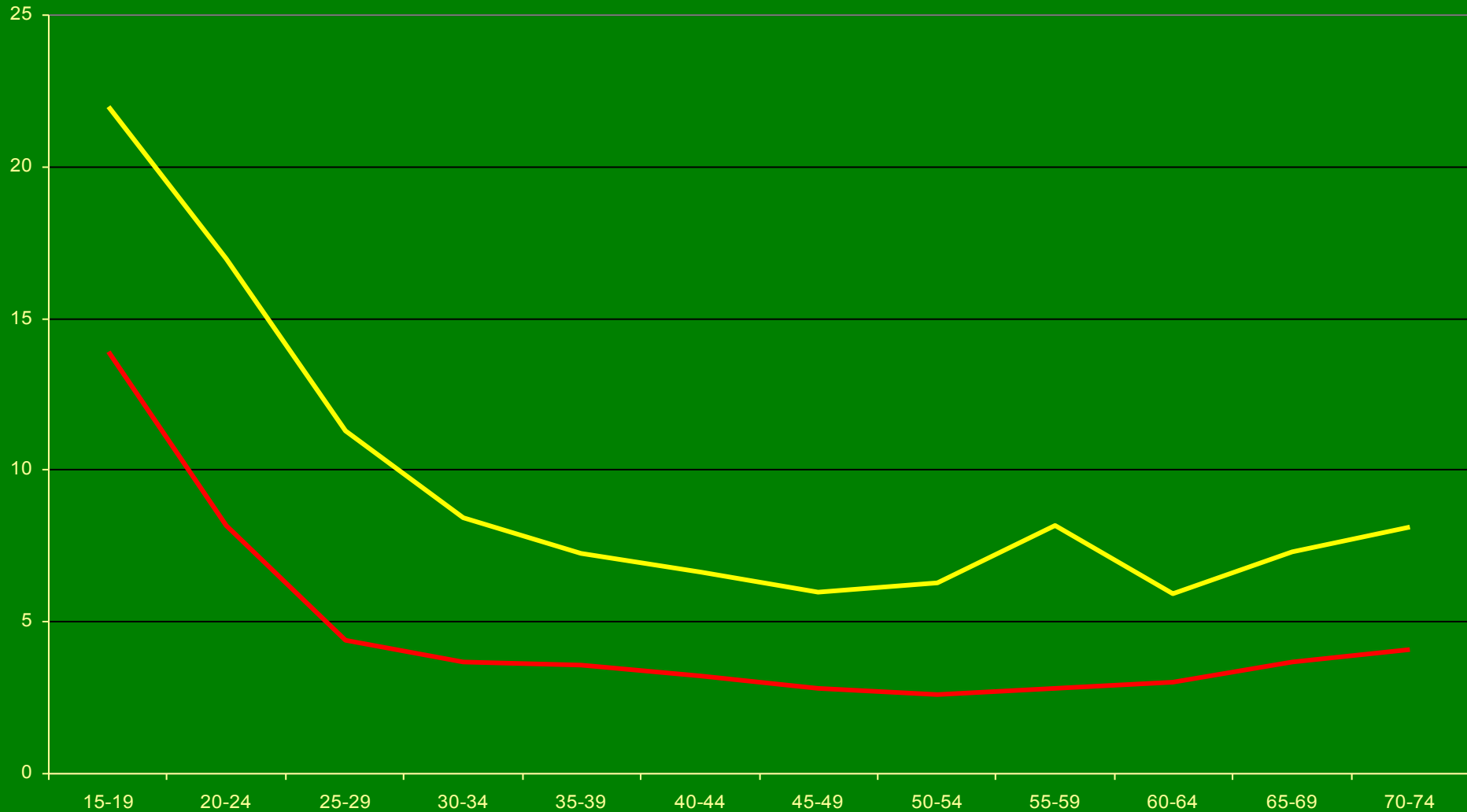
# What Matters for Welfare is $Y/N$ + Differential Leisure, not $Y/H$

- Europeans have “bought” their high productivity ratio with every conceivable way of making labor expensive
  - High marginal tax rates (payroll and income taxes)
  - Unions
  - Firing restrictions
  - Early retirement (55! 58!) with pensions paid for by working people
  - Lack of encouragement of market involvement by teens and youth

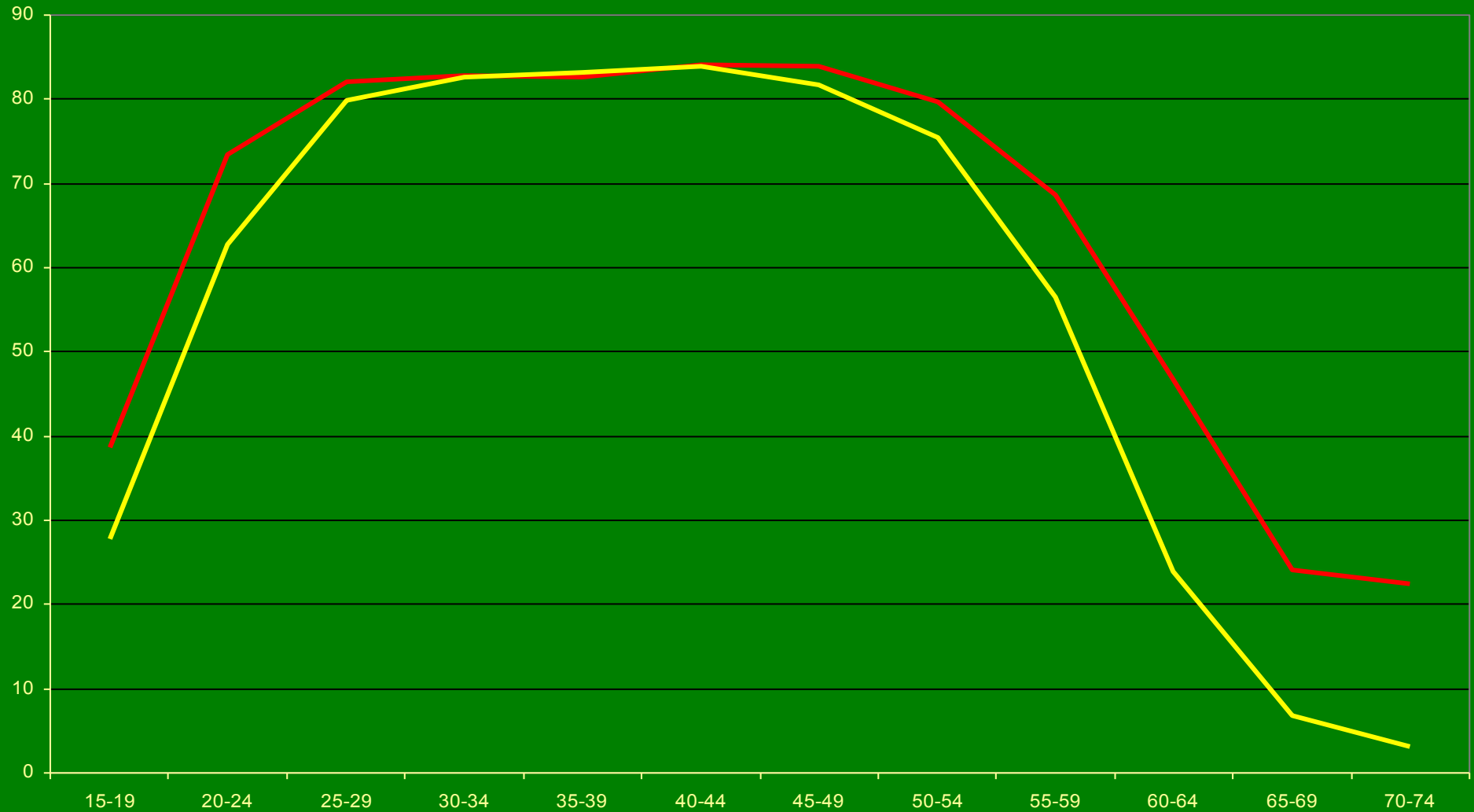
# The Decline in Europe's $E/N$ Matters more than $H/E$

- First, which age groups are suffering from higher unemployment in Europe?
- Second, which age groups experience lower labor force participation in Europe?
- Third, how does it come together in the distribution of low  $E/N$  by age group?
- Note: These graphs are for total working age population by age and blur male/female differences.

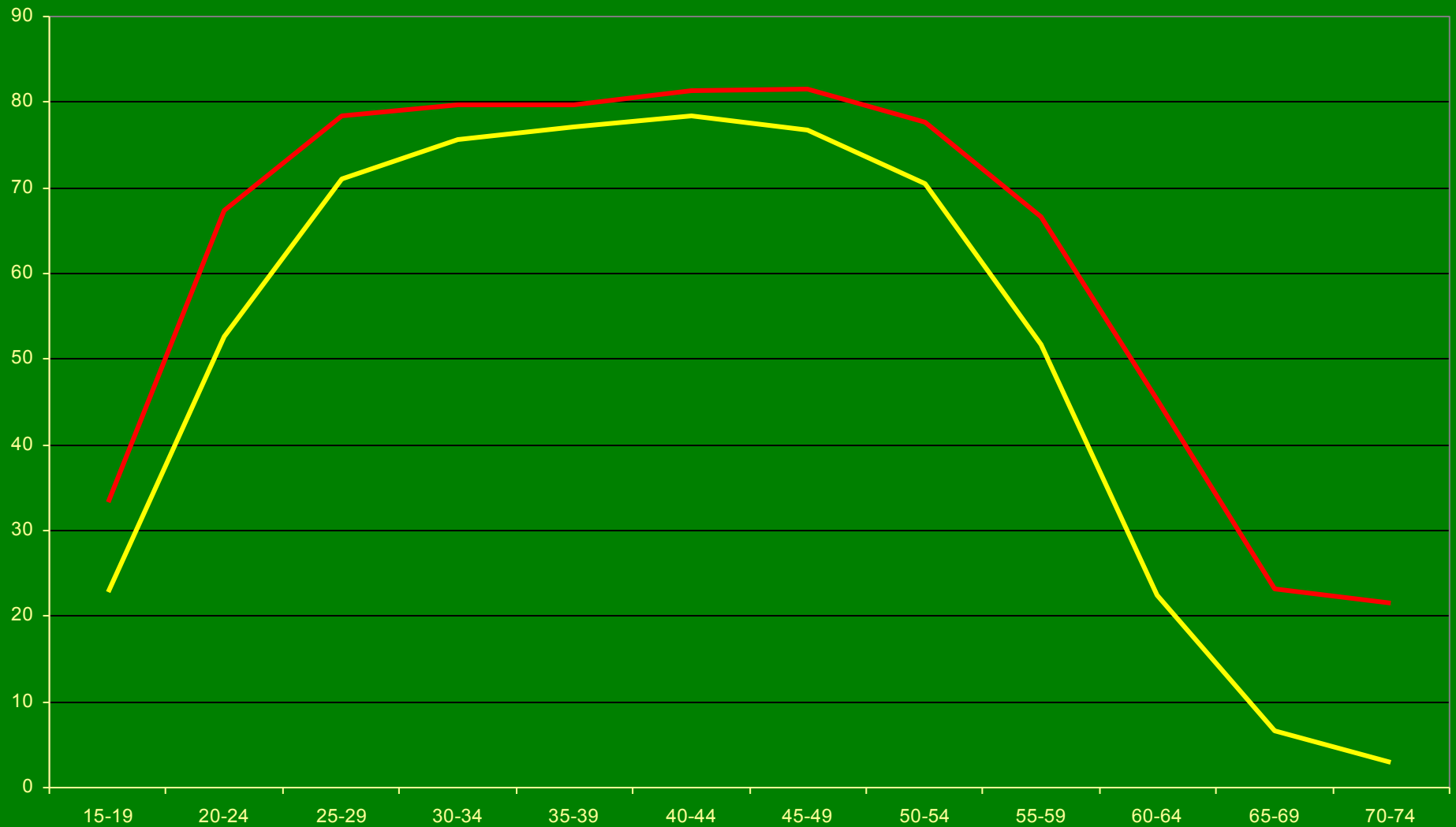
# Unemployment by Age: EU vs. US in 2002



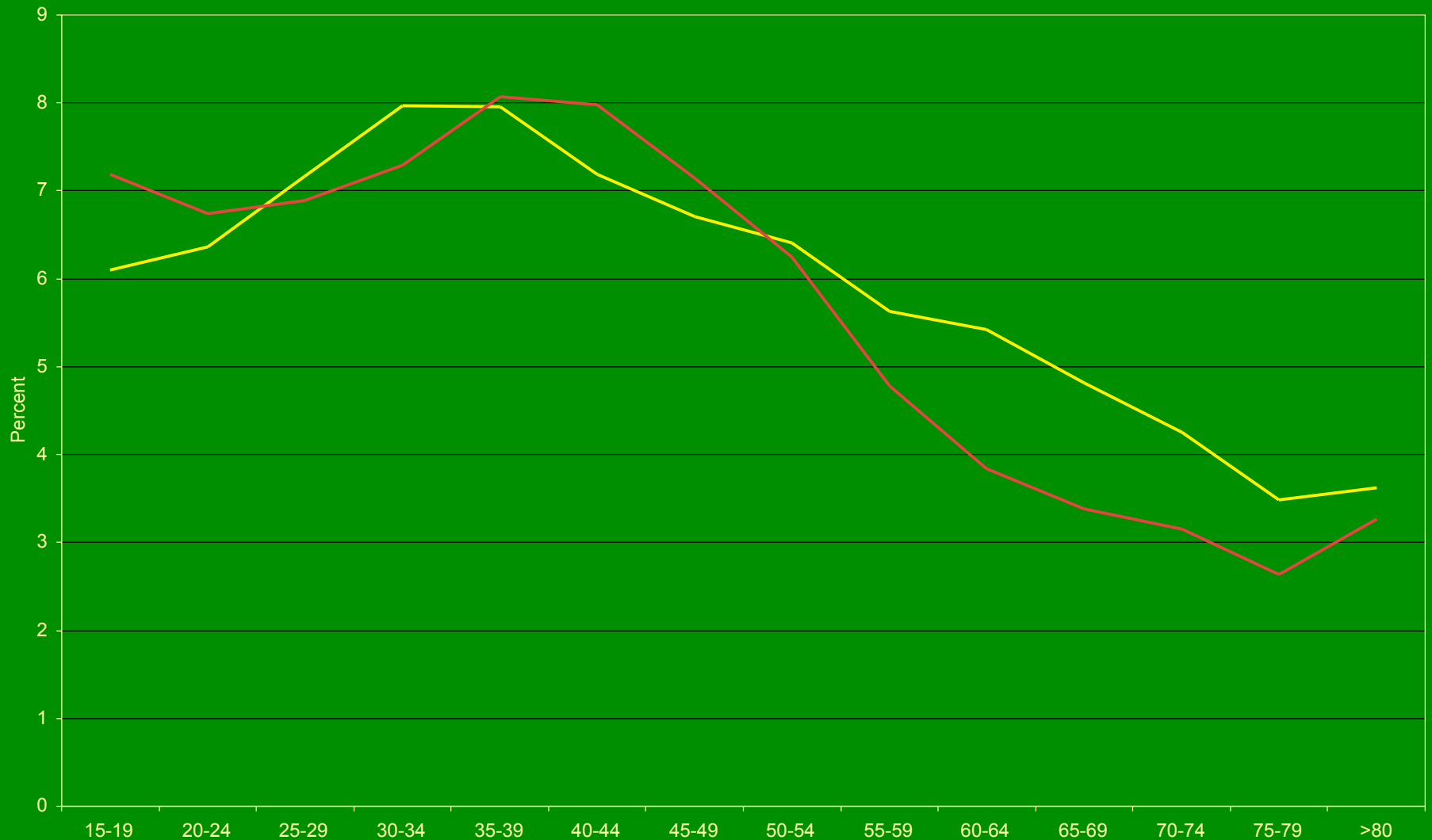
# Labor-force Participation by Age



# Putting it Together: Europe vs. US E/N by Age Group



# Share of Population by Age Group





# Decomposing the EU/US Difference in the E/N Ratio

age distribution	unemployment	LFPR	E/N ratio
EU	EU	EU	87.14
US	EU	EU	86.19
EU	US	EU	91.23
EU	EU	US	97.11
US	US	EU	90.77
EU	US	US	102.1

# Brief Summary of the Recent Prescott Debate

- Prescott says it's all higher taxes in Europe
- This is consistent with
  - Firms cutting jobs
  - Employees choosing untaxed leisure
  - So decline in both H/E and E/N are involved
- Problems:
  - Sargent, identification problem about welfare system
  - Alesina, labor supply elasticities don't match
    - The labor-supply elasticity for adult men is zero
    - The elasticity for females and teenagers is high, but they are only half of the story
    - Thus Prescott can explain only half of labor withdrawal
  - Me, not consistent with age distribution story

# Alesina on Unions and Regulation

- Contrast between U. S. and EU
- U. S. union penetration peaked in late 30s, 1940s, declined after 1950s
- Europe peaked in late 1970s, early 1980s
- No disagreement about what unions do to the labor supply and demand diagrams
  - Unions push the economy northwest

# Channels of European Union Influence (Alesina)

- Unions keep wages artificially high
- Unions may pursue a political agenda to reduce work hours
- Unions have pushed for early retirement financed by state pensions
- Unions impede the reallocation of labor in response to sectoral shocks
- Neither Alesina nor critics notice turnaround in Europe's E/N after 1995

# Critique of Modern Macro Interpretations

- About Alesina, timing is wrong. Union density increased 1960-80, but then fell to 1995 to about the same level as 1960
- This argument from Rogerson (2006) ignores inertia in political process
- Decline in unions and decline in taxes consistent with post-1995 turnaround in H/N

# Going Beyond the Arguments to New Econometric Results

- Which Policy Variables Contributed to decline in Europe H/N before 1995?
- Do these variables explain post-1995 turnaround after 1995?
- Key resource: Bassanini and Duval (2006) OECD. The best framework, the best data
- Following in their footsteps: Dew-Becker and Gordon (2007), making more out of their framework than they do

# The Basic Econometric Results

- Why Did European E/N Decline before 1995 and rise after 1995?
- Econometric regressions of E/N on seven variables
  - Tax wedge
  - Employment Protection Legislation
  - Product Market Regulation
  - Average Replacement Rate (ARR) of Unemployment Benefits
  - Union Density
  - Output Gap (controlling for the business cycle)
  - Time Dummies (and country dummies)

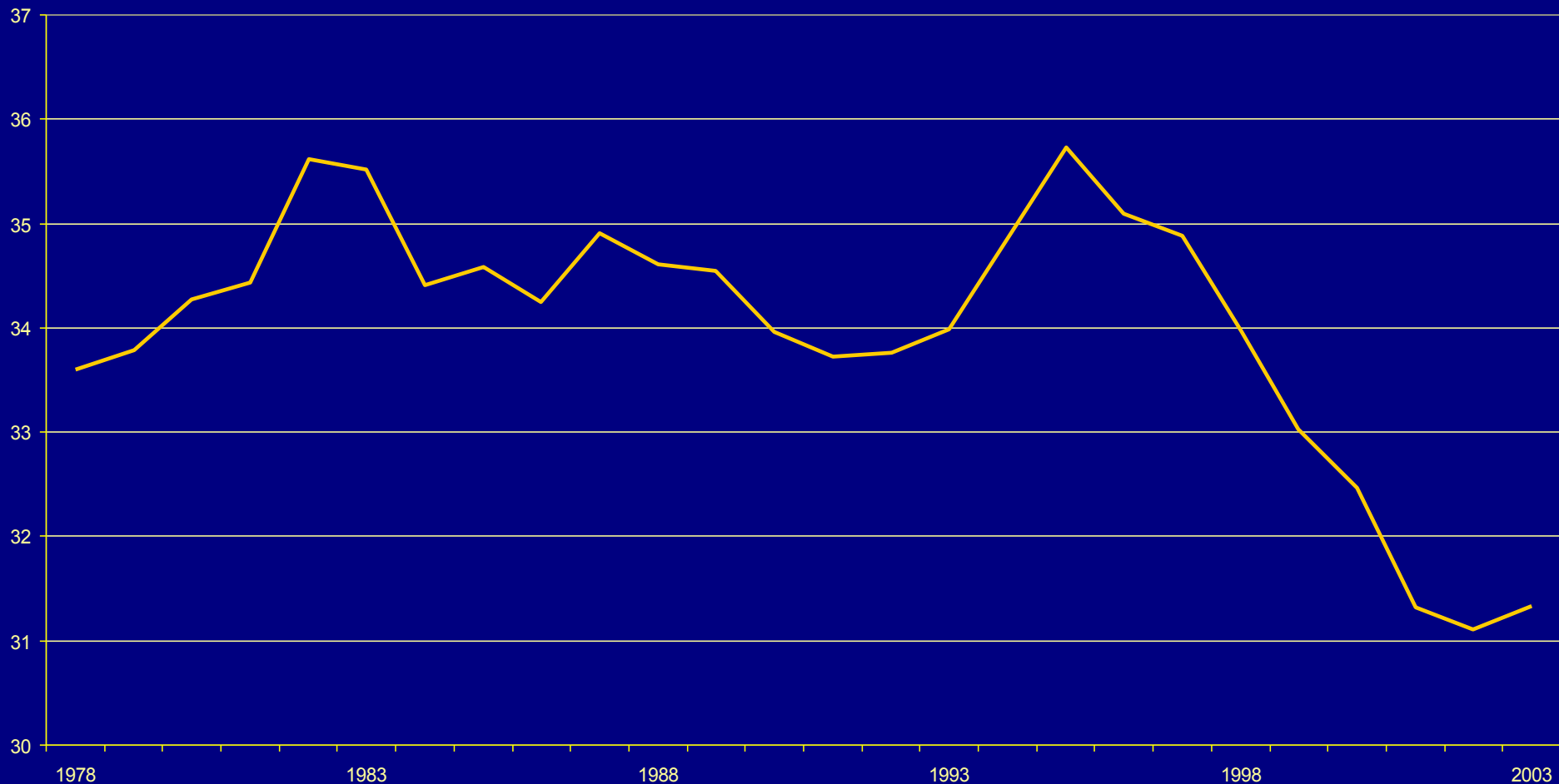
# What We Learn: Changes from the Bassanini-Duval Framework

- They include Canada, US, Japan
  - We are interested just in EU-15
- They run regressions only for males and females
  - We are interested in regressions on males, females, and both sexes to get an overall-EU evaluation
- They don't even notice post-1995 turnaround in E/N and make no effort to quantify it
- Our unique contribution: we show that the much discussed causes of low EU H/N pre-1995 actually contribute a part (*but not all*) of the explanation of the post-1995 turnaround

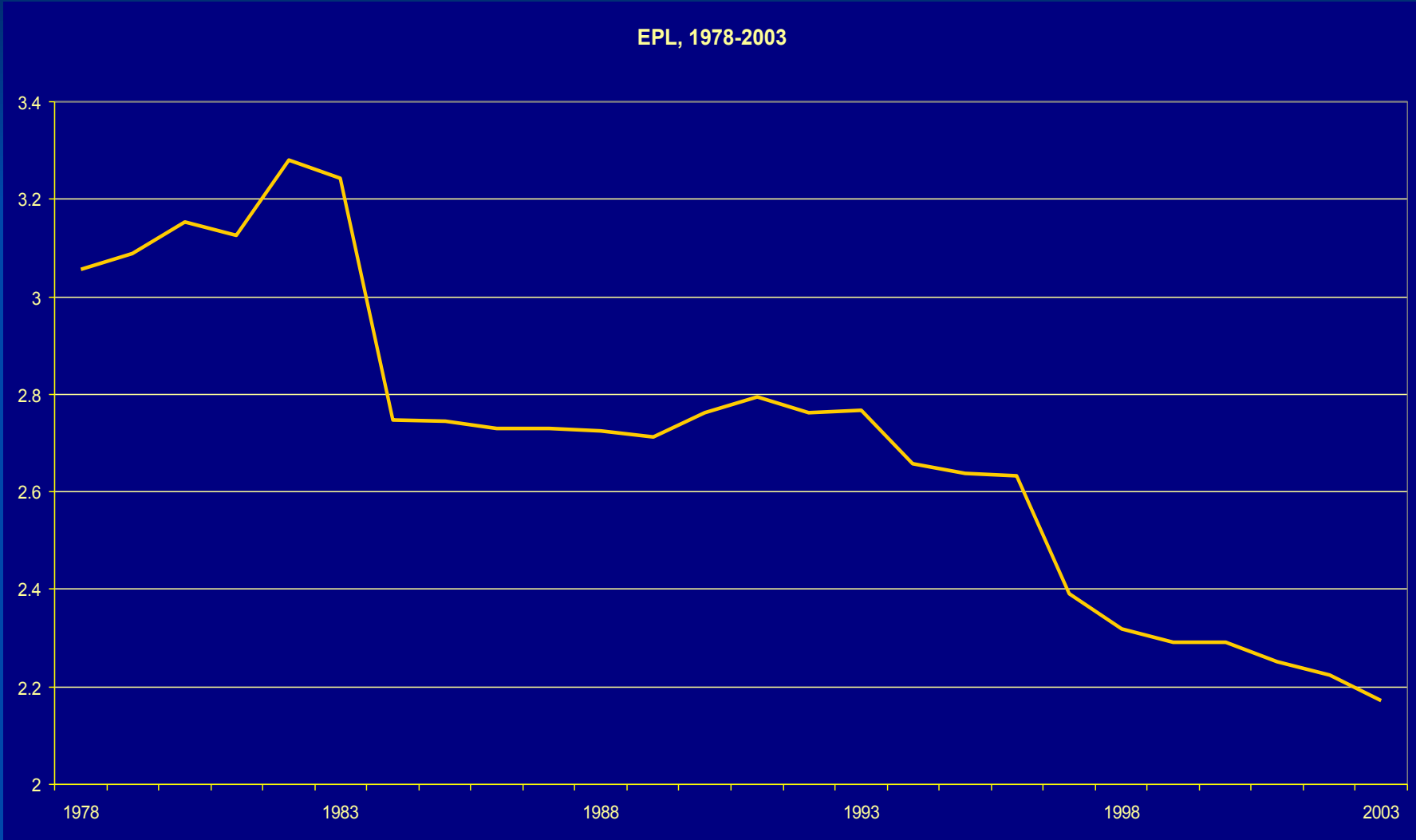


# Notice How the Explanatory Variables Turnaround, starting with tax wedge

Tax Wedge, 1978-2003

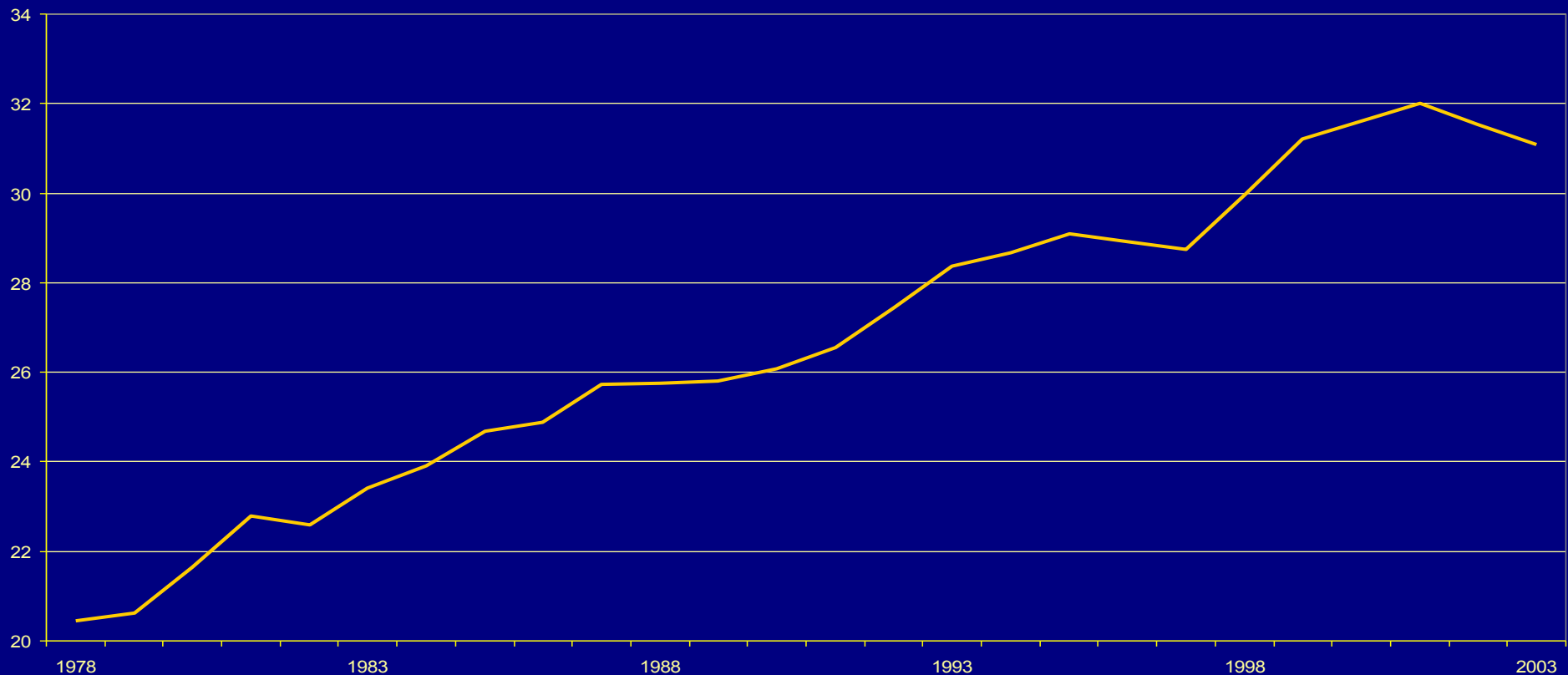


# Employment-Protection Legislation



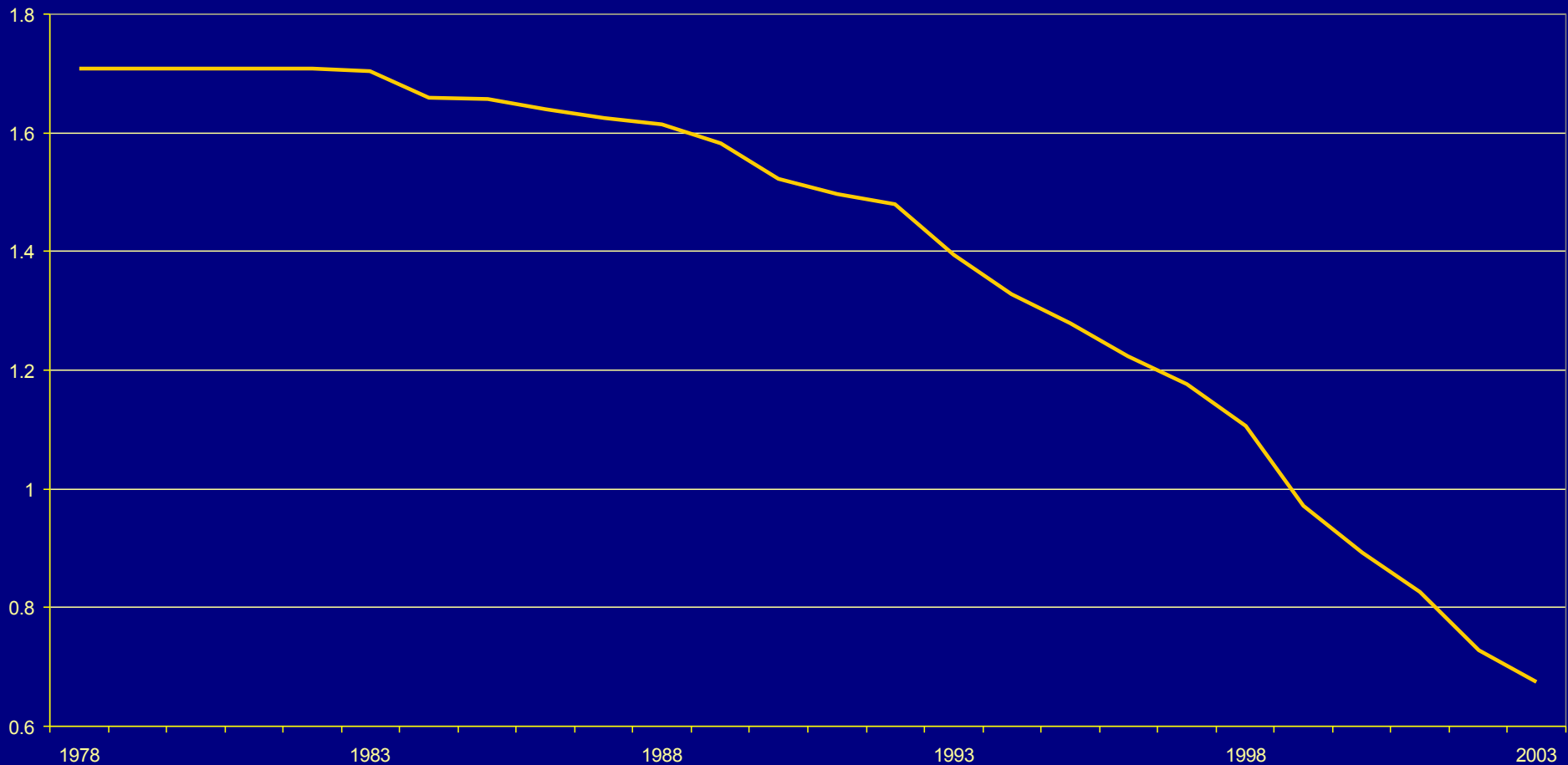
# Average Replacement Rate of Unemployment Insurance

ARR, 1978-2003



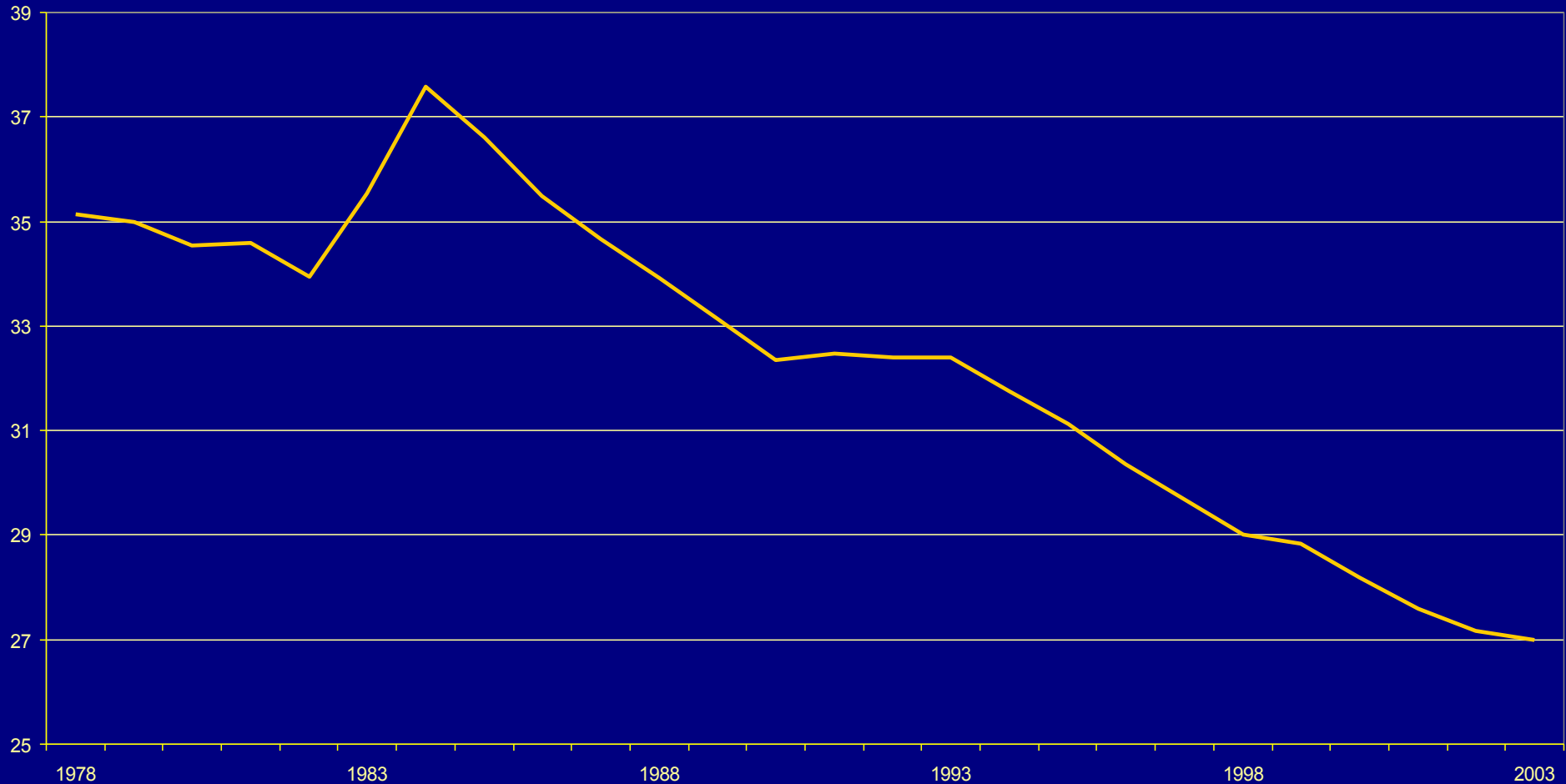
# The OECD Index of Product Market Regulation (PMR)

Log(PMR), 1978-2003



# Union Density has the Wrong Timing

Union Density, 1978-2003

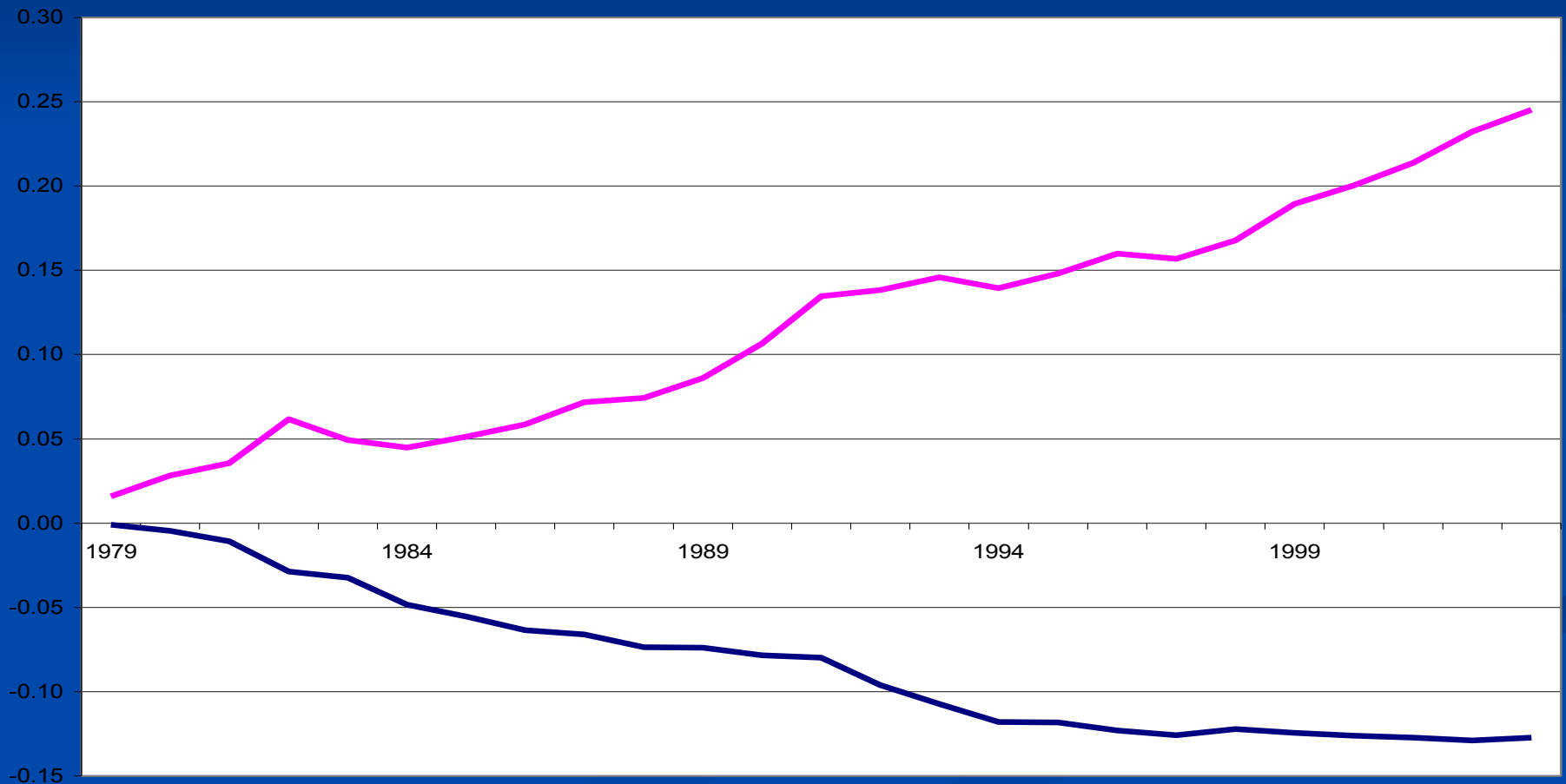


# The Crucial Variable in Explaining Increasing European E/N

- Men and Women are Different
- Any legitimate regression must include “time effects”
- Across the EU, from 1985 to 2005, females have entered the labor force for reasons that have nothing to do with changes in policy variables
- As we look at results, we see that time effects are minimal for men but crucial for females

# Time Effects are the Core of the Story: A Pervasive Change in Culture for European Women

EU-15 Time Effects (Female=Pink, Male=Blue), 1978-2003



**How Much do the Policy Variables  
Explain after 1995 for Both Sexes?**



# Little Happened for EU Men

# A More Interesting Story for EU Women (the scale differs)

# Explanations of these Econometric Predictions: Both

Let us start with the results for both sexes

- There was a increase of .047 in actual EU15 both  $\log(E/N)$  from 1995 to 2003.
- Of this, .028 (61%) is explained by the time effects, and .02 (44%) is explained by the explanatory variables, meaning that the model explains 105% of the post-1995 increase in  $E/N$ .
- Of the .02 explained by the explanatory variables, the tax wedge explains .014 (69%), or 31% of the  $E/N$  increase, and the other variables (none large by itself) explain .006 (31%) of the amount explained by the explanatory variables, or 14% of the  $E/N$  increase

# Here's the Decomposition for Men

- **Men**
- There was a increase of .0054 in actual EU15 men  $\log(E/N)$  from 1995 to 2003.
- Of the .0181 explained by the explanatory variables, the tax wedge explains .0162 (90%) and the other variables (none large by itself) explain .0019 (10%) of the E/N increase.

# The Explanation for Females

- **Women**
- There was a increase of .1052 in actual EU15 women  $\log(E/N)$  from 1995 to 2003.
- Of this, .0894 (85%) is explained by the time effects, and .0183 (17%) is explained by the explanatory variables.
- Of the .0183 explained by the explanatory variables, the tax wedge explains .0177 (97%).
- The other variables have effects that largely cancel out

# Summary: The Analysis of Declining H/N and the Turnaround

- Research Claiming “it’s all taxes” is monocausal
- The actual balance of explanations is widespread with a turnaround after 1995
  - Tax wedge
  - EPL, PMR
  - Unemployment Comp
  - Union Density
- Review: All comparisons of EU vs. US Y/N are pre-tax and thus value EU govt expenditures as if they were privately valued consumption.
- You can’t say, given Y/N the Europeans have a great welfare system. Rather, “let’s hope the Europeans run their welfare system efficiently because that’s what the extra taxes pay for.”

# Modern Macro Research

## Questions Value of Leisure

- Survey summarized by Nordhaus, rank 30 activities on a scale of “0 to 10”. Work was not the lowest!! It was 6 on a scale of 10.
- Many daily aspects of “leisure time” are rated lower than work
  - Child care, care for elderly, grocery shopping, cleaning house
- So do Europeans do more home production than Americans?

# New Research Says Yes!

- Freeman-Schettkat (2005) in *Economic Policy*
- Non-employed individuals esp. women are working hard in their own households
- Much of the lower hours per capita in Europe is reflected in harder at-home work, esp. by women
- Lower European market share of services and restaurants emphasized by Davis-Henrekson



# A Broader View: The Welfare Cost of Higher Unemployment

- The distinction between marginal hours of leisure (40 work, 80 leisure) vs. inframarginal hours (20 work, 100 leisure)
- Leisure hours on vacations and weekends are more valuable than mid-week leisure hours
  - Apply analysis to unemployment
  - Apply analysis to early retirement
- Unifying Theme: Are those extra hours of “leisure” for the unemployed and early retirees actually valuable?

# The Welfare Cost of Higher Unemployment

- Valuing all hours at the marginal real wage overstates the value of leisure as inframarginal hours are transferred from employment to leisure
- Key survey result about value of work: “would survey respondents (workers) require a government payment higher or lower than their present wage to stay at home rather than working?”
- 75% of males said they would require a higher payment
- Conclusion: Work has value at least for adult males

# The Welfare Effect of Early Retirement: Back-of-Envelope

- Baseline: work age 20-65, retire 65-84
- No saving, investment
- 30% tax finances pay-as-you-go pensions with balanced govt budget
  - Tax finances equality of consumption in retirement to consumption during work years
- Alternative retirement age at 55 requires tax increase to 45.6%, 25.1% decline in consumption during work years and retirement

# Welfare calculation

- With 55 retirement age, after-tax wage is 25% less
- Extra hours switched from work to retirement leisure are low-valued (2/3)
- Total welfare = market consumption plus total value of leisure
- Market consumption declines 25.1 percent, welfare declines 22.6 percent, ratio 90% (i.e., leisure offsets only 10% of decline in consumption)

# So Far I've Provided an Indictment of Europe

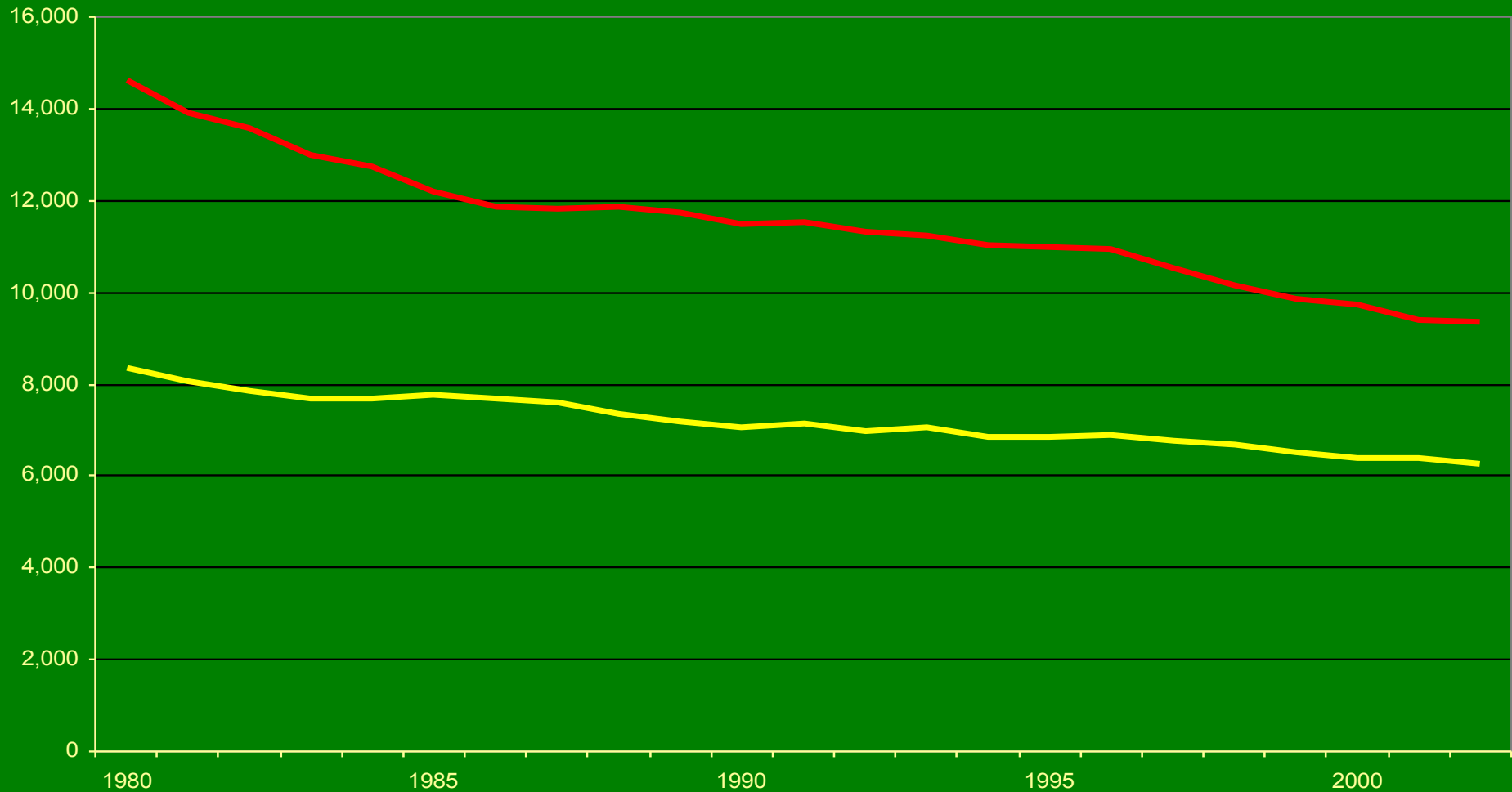
- Income per capita remains at 70% of US
- Attempts by analysts to attribute additional welfare based on European “extra leisure” are unconvincing
  - Leisure of employees unconvincing, it's all home production
  - Welfare gained by unemployed and early retirees isn't really welfare
  - Those Italian men aged 30 living with their mothers are a drag on the welfare of Italian society.

# Turn the Tables on the U. S.:

## The “Disconnect” between Welfare and PPP-Adjusted GDP

- GDP Exaggerates U. S. GDP per Capita
  - Extreme climate, lots of air conditioning, low petrol prices, huge excess energy use
  - U. S. urban sprawl: energy use, congestion
  - Crime, 2 million in prison
  - Insecurity, lack of employment protection, lack of citizen's right to medical care
- How much is this worth?

# BTUs per GDP: The EU-US Difference is only 2% of GDP



# Other Additions or Subtractions from Europe's Welfare

- Urban Congestion?
  - London vs. NY? Paris vs. Chicago?
  - Time spent in London underground vs. in a Chicago automobile?
- Prisons, perhaps 1% of GDP
- Inefficiency of U.S. Medical Care (Table 2)
- Undeniable U. S. superiority: housing
  - People value interior square feet (2X in US)
  - People value exterior land (4X in US)



# Health Care Comparisons for the U.S. and Other Nations

## Health Care Spending and Outcomes, U. S. versus Six Other Nations, 2003

	Health Spending As Percent of GDP	Life Expectancy at Birth	Doctors per Capita	Nurses per Capita	Acute Care Hospital Beds per Capita	MRI Units per Capita	CT Scanners per Capita
<b>United States</b>	15.0	77.2	2.3	7.9	2.8	8.6	13.1
<b>Canada</b>	9.9	79.7	2.1	9.8	3.2	4.5	10.3
<b>France</b>	10.1	79.4	3.4	7.3	3.8	2.8	8.4
<b>Germany</b>	11.1	78.4	3.4	9.7	6.7	6.2	14.7
<b>Italy</b>	8.4	79.9	4.1	5.4	3.9	11.6	24.0
<b>Japan</b>	7.9	81.8	2.0	7.8	8.5	35.3	92.6
<b>United Kingdom</b>	7.7	78.5	2.2	9.1	3.7	5.2	5.8

*Note:* Doctors, nurses, and acute care beds are per thousand population. MRI and CT per million population.

*Source:* [www.oecd.org](http://www.oecd.org) "OECD Health Data 2005 - Frequently Requested Data" release of 12 October 2005.

# The Value of Extra Security in Europe

- By Measuring Y/N Pre-tax instead of Post-Tax, we treat EU Welfare System as Valuable as Equivalent in Market Consumption
- Prescott counts only the substitution effects of higher labor taxes
- Europeans get full value back per tax dollar in valued government services
  - U comp, maternity leave, pensions, severance pay
- To Make an extra allowance would be double counting

# Additional Subtleties

## ■ Immigration?

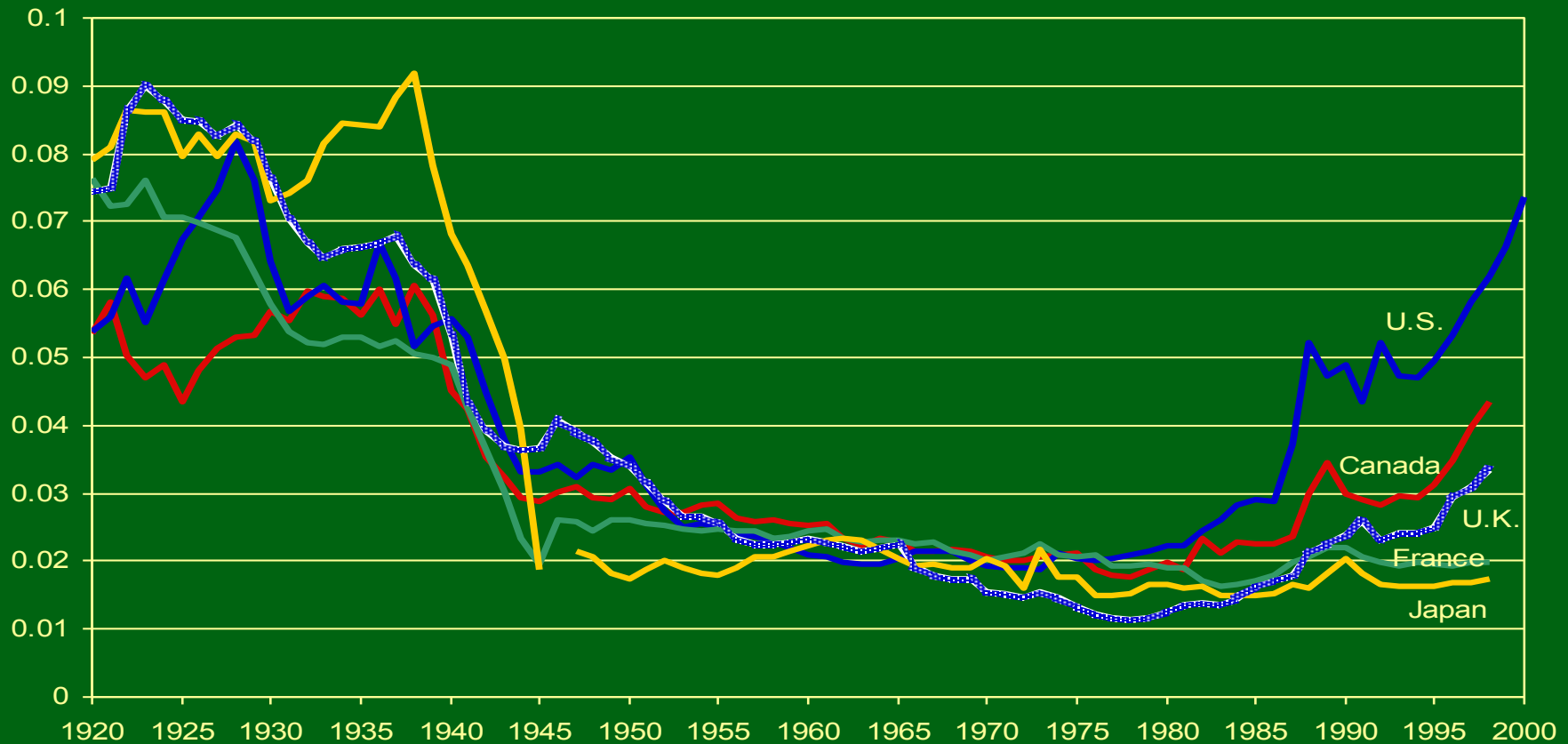
- U.S. Illegal but Voluntary
- Illegal Immigrants have jobs
- Alienated French *banlieues*
- US illegal immigration would be totally benign if the political system would accept it. *We love* our illegal immigrants.

## ■ Inequality

- U. S. median real income grows slower than mean real income, increasing skewness of income distribution

# International Comparison of Inequality: the top 1%

Figure 6. Share of top 1 percent in Total Income (Labor, Business, and Capital Income, excluding Capital Gains), for U. S., U. K., Canada, France, and Japan, 1920-2000



# Our Explanation of Inequality at the Top

- Distinction between Superstars and CEOs
  - Under the heading of superstars
    - Entertainment and sports stars
    - Other professions where “winner takes all”
  - CEO issues
    - Why have multiples of CEO pay to average worker pay grown so high in US compared to Europe and Japan?
    - Is it a market phenomenon or “managerial power”?

# Why the International Differences?

- Institutional: America Has a Different Economic System?
  - This ignores vast differences in the evolution of inequality across OECD outside the US. Lots of inequality elsewhere, from UK to Brazil
- Institutional Elements: Privatization in UK, “consensus” model in NL, IR, GE
- GE union reps on boards of directors restrained management excesses
- Lars Jonung: Centuries of consensus in Sweden and other Nordic countries
  - Social norms and culture mean something: Swedish entrepreneurs would be embarrassed to earn 500X the average wage (or they would move it overseas)

# A Blend of Explanations

- Institutions, including the above plus much earlier US adoption of stock options
  - Institutions and regulations matter, stock options were illegal in Japan until 1997
- But the market also matters:
  - Given US early adoption of stock options, rising P/E ratios in 1990s spilled over to exec comp
- The big remaining research agenda, how to fit the CEOs into the Super-star explanation

# Overall Summary:

## No Welfare Adjustment for US Inequality

- Why?
- People above the US median gaining the extra income have positive marginal utility of income
- At the moment no data on EU growth in median vs. mean income
- This is at the top of the future research agenda



# Adjustments Summary

## Summary of Adjustments to the Europe-to-U.S. Ratio of Per-capita Income, 2004

	Europe-to-U. S. Ratio of Real GDP per Capita	Adjustment to Leisure Component of Hours	Adjustment to GDP
Market PPP Ratio of Y per Capita	68.8		
Add: 1/2 times 2/3 of Difference in Hours per Employee (11.8)		3.9	
Add: 1/10 of Difference in Employment per Capita (8.6)		0.9	
Add: Half of Energy Use Difference			1.0
Add: Prisons and Other			1.0
Add: Medical Care Inefficiency			3.0
Sum of Market PPP Ratio and above Additions	78.6		
Market PPP Ratio of Y per Hour	89.2		
Percent Productivity Gap Explained	48.0		
Percent Total Gap Explained	31.4		