

Comment on I-T-vA,
“Market Services
Productivity Across Europe
and the US”

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The Circle of Discussions Between the Two Papers

- BvA discusses IDB-RJG on European Productivity Slowdown at SF Fed in 11/05
- Nordhaus discusses IDB-RJG, version #3 at NBER exactly one year ago (7/20/06), not exactly favorable, “waiting for the seventh draft”, quoting Galbraith.
- We’re working on draft #6, and now I’m here to discuss I-T-vA on the same topic
- Today’s paper was presented at *EP* Frankfurt 4/07, ours will be at *EP* Lisbon 10/07
- Today’s paper hereafter “ITVA” for short

One Year Ago Today

WDN Quoted Galbraith, 7th Draft

- I don't quote Galbraith, but some of you know that I am prone to quoting Broadway song lyrics
- Broadway shows: something in common with Zvi
 - Sondheim "Merrily we go along" in DC
 - Custom-made tape of "She Loves Me"
- One of my faves is the ultimate calendar song, every June 1 I must find an excuse to quote from "June is Busting out all Over"
- Rodgers & Hammerstein, *Carousel* opened on 4/19/45, set in southern Maine (Think of this as the Barbara Fraumeni song, southern Maine)
- Did it in Stockholm on 6/1/06, similar climate

Usually I quote from the Chorus, Today from the Verse, about this Paper

- March went out like a lion, awakin' the water in the bay
- Then April cried and stepped aside and along came pretty little May
- May was full of promises, but she didn't keep them quickly enough for some
- And a crowd of doubtin' Thomases was predicting that the summer'd never come

This is the “May” paper

- The EU-KLEMS data base is a monumental achievement, DWJ might even say “magisterial”
- This paper has 32 pages of text & tables, plus a 28-page data appendix and tables. The data appendix is magnificent.
- Thus the paper, like May, is full of promises but it doesn't keep those promises. This discussion will be about the high hopes of the data appendix and the disappointment of the main text.

Credits for this discussion are joint with . . .

- Ian Dew-Becker, current co-author on EU productivity growth and former RA (2003-05)
 - Thanks for Ian's spontaneous comments on the I-T-vA paper and on an initial version of my comments
- Robert Krenn, my current RA at Northwestern
 - Following in Ian's path three years younger
 - Robert Inklaar has been very kind in answering RK's pesky data questions over the past few days.
- Both are products of NU's elite MMSS program, where (among other things) they learn to live and breathe STATA as sophomores
- And you'll see at the end the amazing things that RK has produced from EU-KLEMS in the last 48 hours (from Minneapolis)

The Big Achievement of EU-KLEMS

- These authors deserve high praise for their role in creating EU-KLEMS
- As DWJ said in opening this “productivity week,” EU-KLEMS is a monumental achievement
- Now we can get it all off the web, and indeed this discussion will show you a bit of what is available beyond the tables in today’s I-T-vA paper

Some of the EU-KLEMS Achievements: Turn First to the I-T-vA Data Appendix

- Data provided for output and inputs not in the simple 1957 Solow-Kendrick framework. Instead, achieves the Jorgenson-Griliches research agenda
- Data to adjust for labor and capital quality
 - Data also distinguish between gross output, II, and VA
- Uniform as possible for 25 EU countries, US, Canada, Japan, Korea
- Easy to use, just try to download anything and it pops out in Excel
- Biggest achievements:
 - Harmonization (see below)
 - Incredible task of pulling together labor composition and relative compensation measures, allowing comprehensive measures of labor quality
 - Imposition of consistent industry-by-industry PPPs
 - Locating data to make distinction between GO, II, and VA

Further Comments on the Data Appendix

- About p. 33, Zvi didn't call the services "unmeasurable," he called them "hard to measure". There's a difference
- Harmonization is a monumental achievement of EU-KLEMS
 - Wonderful Groningen innovation: Imposed in computer prices
 - Also imposed on depreciation rates
 - But what about output measurement in finance, business services?
 - ABC distinction: finance, bus svcs 46% "C" but Hotels and restaurants 73% "A" grades
- This is important because of EU-US LP difference in finance and business services
- No sense from paper about whether US does a different job, no accounting for "A B C" for US
- What role of movement from "C" to "A" in post-1995 change in productivity growth behavior?

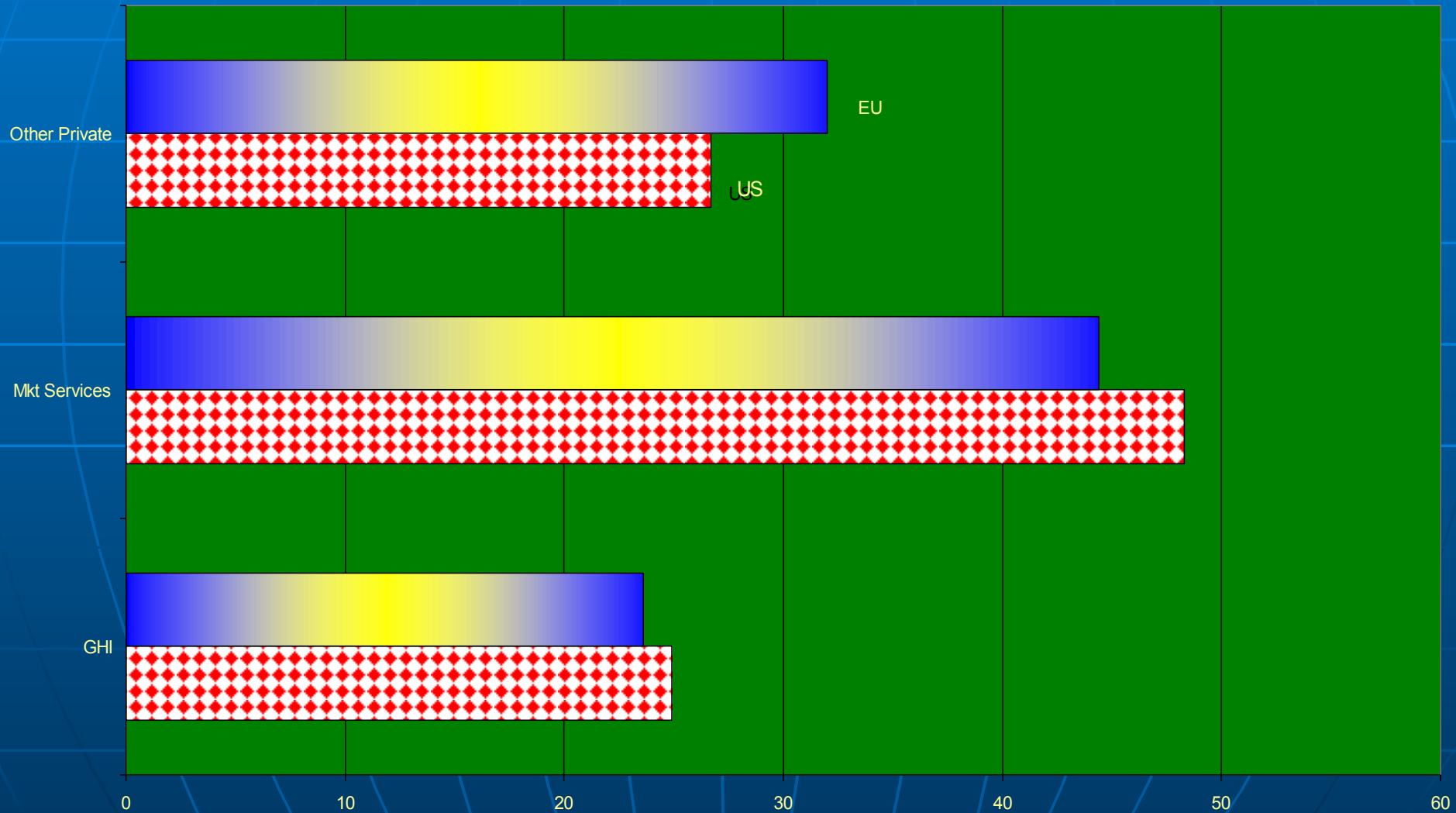
Problems with EU-KLEMS

- Authors drop 5 countries and reduce the sample to EU-10 instead of EU-15
- We have found that this peeling off of the “rejected 5” is unnecessary
 - Ireland has some missing data in sub-industries before 1995, no problem to patch this
 - Sweden industry 322 telecom production, *negative VA in 2001, dropped after 2002*
 - How could Ericson have negative VA??
 - We solve not by throwing out Sweden but by having a slightly broader definition of ICT production in Sweden than in other countries (30t33)
- No attention to Diewert point about net vs. gross, despite imposition of harmonization of depreciation

Four Criticisms at the Outset, about substance & exposition

- DWJ and Co-authors (J-H-S-S) on Monday were right that we're interested in the entire economy, not just NFPB or in this paper just in "Market Services" (MS), a subset of NFPB
- Other Sectors:
 - OP = Other Private = ag, mining, mfg, construction, utilities
 - GHI = govt, households, institutions

1995 Share of Total Economy VA in OP, MS, and GHI



What the “Market Services” Orientation Omits

- EU: 32.0 percent in OP, 23.6 in GHI
- US: 26.7 percent in OP, 24.9 in GHI
- Note: US has a higher share in MS as has been widely noted (Europe home production vs. US market production)
- Surprise: US has a slightly higher share in GHI
- Focus on MS ignores cross-country differences in ICT production and ICT use in OP

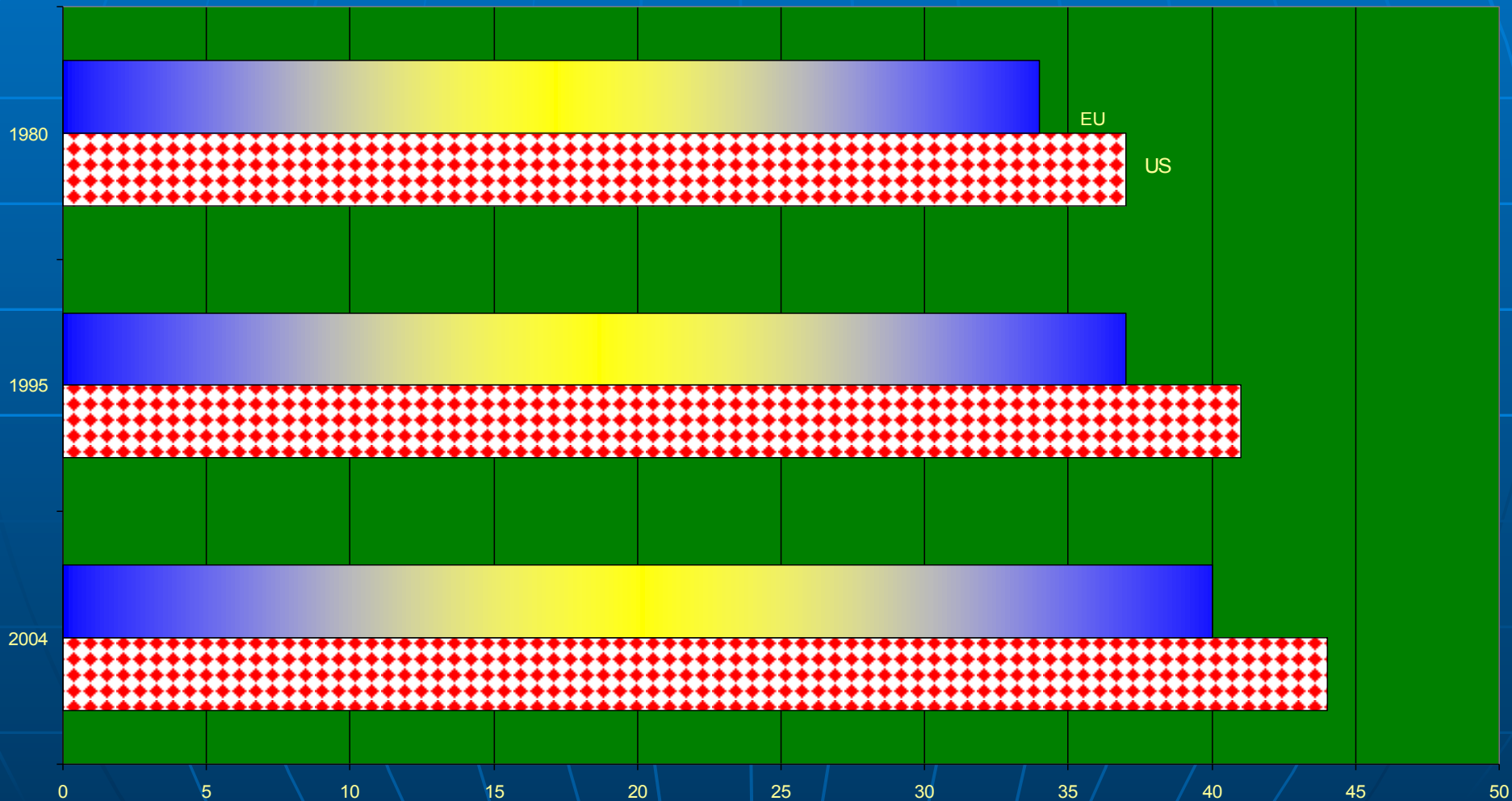
Does Omission of OP and GHI Matter?

- Henceforth, the word “turnaround” will refer to growth 1995-2004 minus growth 1978-1995
- EU-US turnaround is primarily in market services
- But a second theme is the increase in within-EU heterogeneity
- Here much of the action is in OP, not just in MS

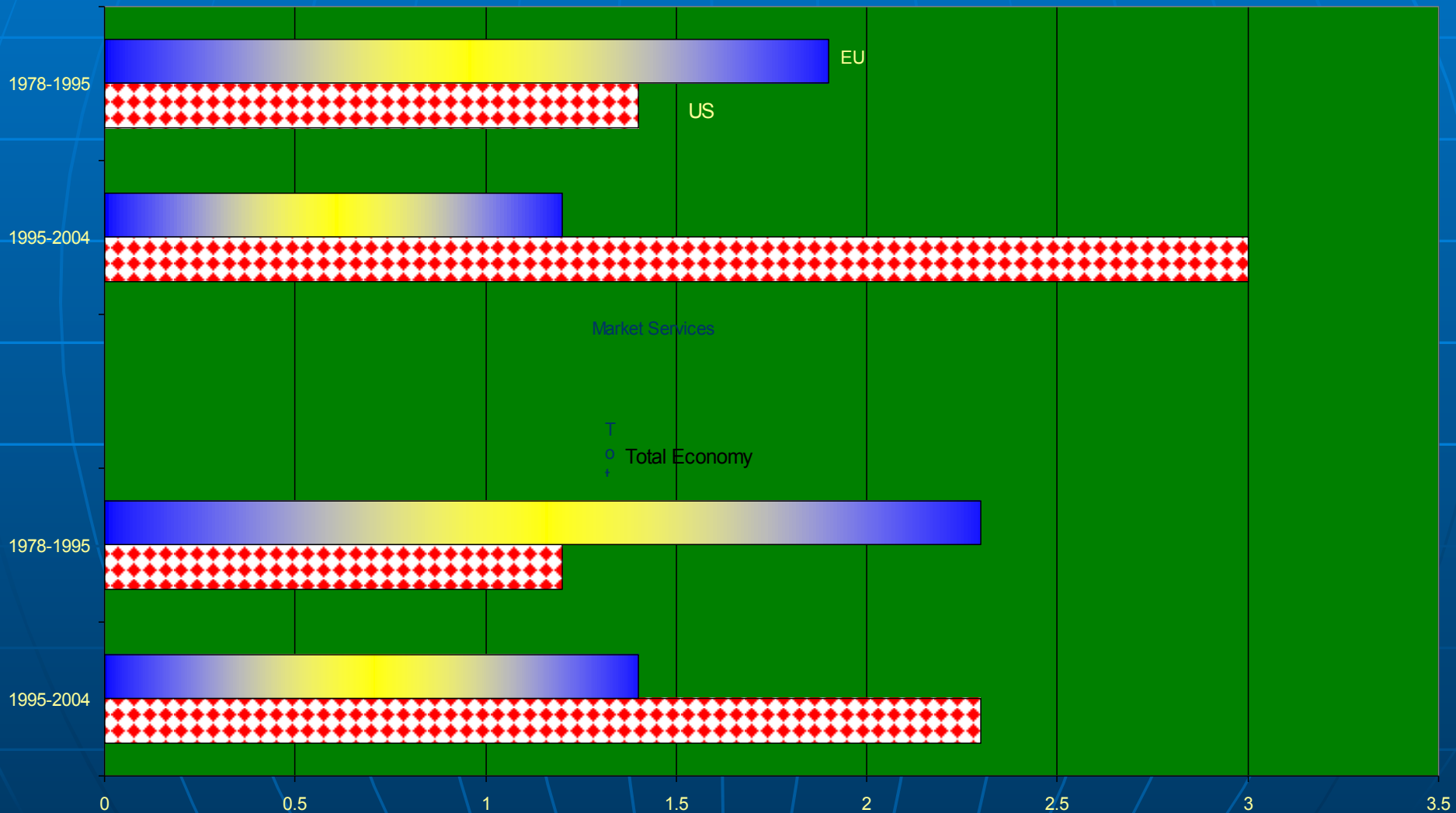
Second Initial Complaint, Refusal to Provide EU averages

- Look at Tables 2, 3, 4, 5, 6
- The “averages” are unweighted across countries
- The “averages” include US so don't allow a contrast of EU vs. US
- Yet the EU-10 weighted averages are right there on EU-KLEMS web site, waiting for the discussant to provide the missing lines in these tables

Paper's Table 2 Including EU-10 Averages: MS Nominal VA Share in 1980, 1995, 2004



Turnaround is Different in MS vs. Total Economy



Third Complaint: They Don't Provide Growth Rates of Labor and Capital Quality

- Yet these can be easily calculated from their data base.
- We didn't have time to calculate these for today's discussion
- We also didn't have time to calculate anything about capital deepening or TFP growth
- Capital & labor quality are hiding inside Appendix Table A2
 - Turns out from Table A2 that changes in cap and labor composition are minor compared to shifts in II share of GO, not discussed in body of paper at all
 - Employment vs. hours, columns 1 vs. 2 of Table A2 is a straw person. *Everyone* already measures productivity as output per hour, not output per person.
- What's worse, the alternative MFP concepts in Table A2 refer only to 1995-2004, not to the *turnaround* before and after 1995

Fourth Complaint: No Country Sub-aggregates

- They have 10 EU countries listed alphabetically, along with US
- Are there interesting ways to group the 10 EU countries?
- Not for them, but yes for us
- We've given up on Tigers-Tortoises
- We've adopted standard geographical breakdown: Nordic, Anglo-Saxon, Other, and Mediterranean
 - Citation: Pissarides et al, *Women at Work*, Oxford Univ Press 2005

Substantive Analysis in Paper: “Growing Role ICT and HK”

- The best part is their inclusion of the “technology gap” in the regressions, the traditional “convergence” term that we also include and is always included in the Barro / Sala-i-Martin literature.
- Otherwise, This part of the paper is dismaying
- No link with the DWJ formulation of labor quality
- They use the LEVEL of college share as a determinant of the GROWTH RATE of MFP
- This is crazy. This would predict that the US would have had the fastest productivity growth 1973-95
- Plus they fail to run multivariate regressions, they do HK, ICT, and regulations *separately!*

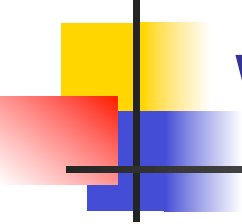
The Entire Analysis of Human Capital is Misconceived

- Go back to the DWJ concept of “labor quality,” this is the *difference in the growth rate of effective labor input vs. raw labor input*
- It is a growth rate concept
- It grows when the share of college grads grows, it has nothing to do with the LEVEL of educational attainment
- Why didn't the US have the fastest productivity growth in the 70s and 80s when it was furthest ahead in educ attainment?

Regression Analysis

- Not Motivated by a Model
- Confusion between Levels and Rates of Change
- No attempt at Multivariate Regression, why should ICT, Human Capital, and Regulations be entered one-at-time instead of together?
- ICT section like HK section is plagued by running level variables when rate of change variables are what matter

Now it's time to switch colors and look at some new results with EU-KLEMS



- What we did
 - Aggregated VA across countries and industries with nominal Tornquist VA weights
 - Aggregated hours with hours weights
- Created 12 industry sub-aggregates including OP, MS, and GHI
- Created Four EU-country groups
- This is supposed to demonstrate how wonderful are the EU-KLEMS data, how easy to use.
- But, wow, it is a lot of work. All those missing numbers, what to do about them

Conclusions #1

- With a Wonderful new Data Base, don't limit your analysis to 45% of the economy
- Enormous praise for the huge opportunity of the research community to analyze this prize of 2007
- Pull out the labor quality and capital quality changes explicitly across countries and talk about them
- Data worries about harmonization of computer prices and depreciation and not of measures of finance and business services

Conclusions #2

- Please in the future don't forget these basic guidelines for an analysis
 - Don't leave out more than half of the economy
 - Don't omit EU-10 averages when comparing US to EU
 - Don't omit the basic contribution of the DWJ approach, the growth rates of labor and capital quality
 - Don't list EU countries alphabetically, assemble them into plausible sub-aggregates

Conclusions #3

- Don't mix up level and rate of change effects
 - Why should EU-KLEMS adhere so closely to DWJ-ZG 1967 and then go off the deep end in confusing levels from growth rates
 - Why should the LEVEL of human capital have anything to do with MFP growth?
 - Same for ICT use

Conclusions from Our Look at EU-KLEMS

- Yes, market services are at the heart of the EU-US turnaround
 - But it's not like van Ark in 2001, it's not 80% trade and 20% financial. It's now trade and business services, do we know how to measure BS?
- But market services are not at the heart of heterogeneity within Europe

What's Going on within Europe?

- Only Anglo-Saxon shows dominance of MS
- Other country groups (Nordic, OE, Med) have the big divergence in OP, not in MS
- Much still to analyze across the four country groups – ICT production, ICT use, capital deepening, MFP
- Stay tuned for all that in Lisbon on October 20, 2007!