

Data Appendix to “Does Disappointing European Productivity Growth Reflect a Slowing Trend? Weighing the Evidence and Assessing the Future”

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In the main text, we focus on the total economy from the Penn World Tables (PWT) and the market economy from EU KLEMS 2012+2017. This appendix discusses the variables we use in greater detail and compare results with several additional datasets. The additional datasets

include (in Appendix Table 1) the EU KLEMS total economy, the OECD Productivity data, the Conference Board Total Economy Database, and (in Appendix Table 2) EU KLEMS 2019 (Stehrer, *et al.*, 2019).

¹ The main article is available at <http://www.csls.ca/ipm/38/Fernald.pdf>.

Table 1: PWT Variables for Figures and Tables

Variable Description	Variable Code(s)
Chart 1	
TFP	<i>RTFPNA</i>
Weighting	<i>CGDP^o</i>
Table 1	
Labour Productivity (GDP per hour)	$RGDPNA / (EMP \times AVH)$
Capital/Hour	$RKNA / (EMP \times AVH)$
Labour Composition	<i>HC</i>
TFP	<i>RTFPNA</i>
Capital/Output	<i>RKNARGDPNA</i>
Weighting of GDP	<i>CGDP^o</i>
Weighting of Capital	$(1 - LABSH) \times CGDPo$
Weighting of Labour	$LABSH \times CGDPo$
Chart 2A	
Capital/Output	<i>RKNARGDPNA</i>
Weighting	<i>CGDP^o</i>
Chart 2B	
Investment/GDP	v_{gcf}/v_{gdp} (NA data file)
Weighting	<i>CGDP^o</i>

We rely on PWT², version 9.1, along with further documentation. See Feenstra *et al.* (2015) for the overall documentation of the database. The variables we use are shown in the table above.

We combine the EU KLEMS releases of 2012 and 2017 to enable a longer time series analysis. We use the 2017 time series for however long available. For nearly all variables, we then use the 2012 time series for extrapolation to each available year t (country and industry subscripts are omitted for clarity):

$$\tilde{x}_{2017,t} = x_{2012,t} \times \frac{x_{2017,\tau}}{x_{2012,\tau}}$$

Here τ is the first year for which data are available in the 2017 release and x is the relevant variable, such as value added at current prices (VA) or the index for total factor productivity ($TFPva_I$). The only exceptions to the extrapolation in equation (A1) are the contributions to value added growth of hours worked ($VAConH$), of labor composition ($VAConLC$), of ICT capital ($VAConKIT$) and of non-ICT capital ($VAConKNIT$). For these variables, we use the 2012 values as given.

² Available for download via www.ggdc.net/pwt.

Table 2: KLEMS Variables for Figures and Tables

Variable Description	Variable Code(s)
Table 1	
Labour Productivity	<i>VA_QI/H_EMP</i>
Capital/Hour	<i>CAP_QI/H_EMP</i>
Labour Composition	<i>LAB_QI/H_EMP</i>
TFP	Based on equation (1) in the main text
Capital/Output	<i>CAP_QI/VA_QI</i>
Weighting across Market Industries	<i>VA</i>
Weighting across Countries	See Appendix Table 1
Table 2, Chart 3, Chart 4, Chart 5	
TFP	Aggregate across industries (and countries) as for Table 1
Chart 6	
Internal Rate of Return	Computed based on capital input files, giving capital stocks, deflators and depreciation rates
Chart 7	
Weighting across Countries	<i>CGDP^o</i>

Table 3: Sources of Labour Productivity Growth in Europe Based on EU KLEMS, OECD, and The Conference Board Database

	1985-95	1995-07	2007-15	1995-00	2000-07	2007-11	2011-15
EU KLEMS Total Economy (combination of 2012 and 2017 version)							
(1) Labour productivity growth	2.18	1.41	0.45	1.64	1.25	0.35	0.54
<i>Accounting decomp. 1 (p.p. contributions):</i>							
(2) Capital/hour	1.14	0.80	0.43	0.94	0.70	0.61	0.26
(3) Labour composition	0.38	0.20	0.26	0.25	0.16	0.31	0.21
(4) TFP growth	0.65	0.42	-0.23	0.45	0.40	-0.57	0.10
<i>Accounting decomp. 2 (p.p. contributions):</i>							
(5) Capital/output	0.62	0.46	0.43	0.56	0.39	0.77	0.10
(6) Labour composition	0.57	0.31	0.40	0.39	0.25	0.48	0.32
(7) TFP growth	0.98	0.66	-0.37	0.70	0.62	-0.90	0.16
OECD							
	1985-95	1995-07	2007-17	1995-00	2000-07	2007-11	2011-17
(1) Labour productivity growth	2.04	1.61	0.60	1.82	1.45	0.36	0.76
<i>Accounting decomp. 1 (p.p. contributions):</i>							
(2) Capital/hour	1.01	0.72	0.50	0.75	0.70	0.72	0.35
(3) Labour composition							
(4) TFP growth	1.01	0.86	0.06	1.03	0.74	-0.48	0.41
<i>Accounting decomp. 2 (p.p. contributions):</i>							
(5) Capital/output	0.60	0.39	0.45	0.35	0.42	0.84	0.20
(6) Labour composition							
(7) TFP growth	1.42	1.17	0.08	1.41	1.00	-0.65	0.57
Total Economy Database (April 2019)							
	1990-95	1995-07	2007-17	1995-00	2000-07	2007-11	2011-17
(1) Labour productivity growth	2.48	1.49	0.56	1.76	1.30	0.41	0.66
<i>Accounting decomp. 1 (p.p. contributions):</i>							
(2) Capital/hour	1.34	0.82	0.61	0.78	0.85	0.98	0.37
(3) Labour composition	0.28	0.26	0.25	0.32	0.22	0.33	0.19
(4) TFP growth	0.88	0.42	-0.31	0.68	0.24	-0.91	0.09
<i>Accounting decomp. 2 (p.p. contributions):</i>							
(5) Capital/output	0.60	0.34	0.65	0.09	0.52	1.42	0.13
(6) Labour composition	0.46	0.45	0.43	0.54	0.38	0.58	0.34
(7) TFP growth	1.47	0.72	-0.54	1.16	0.41	-1.59	0.17

Note: Sample periods and country differ slightly across datasets.

Table 4: Source of Labour Productivity Growth Based on EU KLEMS Database With and Without Additional Intangibles

	(2)	(3)	(4)	(5)	(6)	(7)
	1995-07	2007-17	1995-00	2000-07	2007-11	2011-17
EU KLEMS Total Economy (2019 version, only NA intangibles)						
(1) Labour productivity growth	1.46	0.55	1.71	1.29	0.42	0.64
<i>Accounting decomp. 1 (p.p. contributions):</i>						
(2) Capital/hour	0.41	0.27	0.44	0.38	0.51	0.11
(3) Labour composition	0.19	0.21	0.24	0.16	0.26	0.17
(4) TFP growth	0.87	0.07	1.03	0.76	-0.36	0.36
<i>Accounting decomp. 2 (p.p. contributions):</i>						
(5) Capital/output	-0.13	0.13	-0.19	-0.09	0.57	-0.17
(6) Labour composition	0.28	0.31	0.36	0.23	0.40	0.26
(7) TFP growth	1.32	0.11	1.55	1.16	-0.55	0.55
EU KLEMS Total Economy (2019 version, including additional intangibles)						
(1) Labour productivity growth	1.52	0.57	1.77	1.33	0.40	0.69
<i>Accounting decomp. 1 (p.p. contributions):</i>						
(2) Capital/hour	0.41	0.28	0.43	0.39	0.51	0.13
(3) Labour composition	0.19	0.21	0.24	0.16	0.26	0.17
(4) TFP growth	0.92	0.08	1.11	0.79	-0.37	0.38
<i>Accounting decomp. 2 (p.p. contributions):</i>						
(5) Capital/output	-0.16	0.14	-0.24	-0.10	0.58	-0.16
(6) Labour composition	0.28	0.31	0.36	0.23	0.40	0.26
(7) TFP growth	1.40	0.12	1.67	1.21	-0.58	0.59

Source: Stehrer *et al.* (2019). Data start in 1995. Top panel includes only national accounts intangibles in output and capital and is from the “statistical” tables. Bottom panel includes additional intangibles and is from the “analytical” tables.