Chapter 14
Value Added

A Primary Factor Shares

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A.1 Introduction

In this document, we aim to compile a revised set of value-added cost shares that underly the GTAP database construction. Primary factor shares (land, labor, and capital) in agricultural value-added for each of the 65 GTAP region are based on a core set of estimated shares obtained from the literature. But these cost shares are volatile and input-output tables frequently do not provide a three-way split of value-added (typically, only returns to labor are reported). As a result, it is necessary to revise these shares underlying the GTAP database using more recent estimates produced in the literature.

Table 14.1 summarizes labor and capital shares currently contained in GTAP, using various sources, compared with (the most recent) estimates compiled by Keith Fuglie (abbreviated to KF hereafter) using alternative (and mostly more recent) sources. In some cases, differences in the cost shares are very large e.g. Australia's labor share contained in GTAP is 51% compared with 12% in KF's compilation. These differences can be caused by one or a combination of several of the following reasons:

1. The shares are calculated from different time periods; differences reflect real changes over time

2. The shares are calculated using different definitions and/or measurements of "labor", "capital", and "land"

3. The shares are calculated using different methods entirely (econometric estimates vs. accounting or survey estimates)

Table 14.1: Cost shares in GTAP vs most recent cost shares compiled by KF

Country	Labor Share		Capital Share		Years Covered	
	Current GTAP Build	Fuglie Compila-tion	Current GTAP Build	Fuglie Compila-tion	GTAP	Fuglie
Australia	51	12	28	25	1996	1977-2009
New Zealand	62		24		1996	
Japan	51	43	31	30	1996	1981-1990
Korea	40	19	9	17	1918-1971	2009
Philippines	55		4		1918-1971	
Southeast Asia/Indonesia	42	46	7	16	1993	1961-2006
China	59	39	12	31	1993	1951-1997
Taiwan	54	19	8	17	1911-1972	2009
India	38	57	18	13	1998	1980-2008
Nepal	57		14		2000	
Canada	41	77	43	20	1997	1961-2006
United States	38	24	34	32	1996	2020
Brazil	24	56	60	32	1994	2006
Latin America/Peru	60		5		1993	
United Kingdom	68	22	18	43	1996	1953-2005
Germany	68		17		1996	
Denmark	40		47		1992	
European Union	68		21		1996	
European FTA	35		38		1993	
Central Europe	53		12		1993	
Former Soviet Union, All (FSU)	60	51	12	37	1993	1994-2013
FSU, European		51		37		1994-2013
FSU, Asia		24		46		1994-2013
FSU, Baltic		29		36		1994-2013
Middle East	57		32		1991	
South Africa	34	28	52	47	2000	1947-1997
Southern Africa/Zimbabwe	41		28		1970-89	
Sub-Saharan Africa	72	28	16	37	1991	2009
Mexico	47	13	25	61	2002-2003	1960-1990
Rest of South America (RSA)[a]	60		25		Unknown	
Eastern Europe		27		40		1973-2002
Northwest Europe excl. UK		49		34		1973-2002
Southern Europe		67		20		1973-2002
Egypt		18		8		2020

[a]RSA excluded from the analysis since region's composition and year of data unknown

A.2 Quantitative Comparison

Of the two compilations, to assess which is the more "reasonable" estimate in each country case, we regress the cost shares on GDP per capita controlling for arable land per capita. This allows us to see which cost shares are outliers, in that they do not follow the general relationship between these shares and GDP. More specifically, the following regressions are run as seemingly un-related regressions (SURs):

$$SHARE\_LAB_{rts} = \beta 1 + \beta 2 * GDP_{rts} + \beta 3 * LAND_{rts} + \epsilon_{rts}$$
$$SHARE\_KAP_{rts} = \gamma 1 + \gamma 2 * GDP_{rts} + \gamma 3 * LAND_{rts} + \mu_{rts}$$

where the subscript rts denotes observations at the country-time-source level (source here refers to the compilation, GTAP or KF), GDP is log of GDP per capita and LAND is log of arable land per capita; ϵ_{rt} and μ_{rt} are assumed to be correlated with each other; i.e. the two regressions are run as a set (SUR). The land equation is excluded and treated as the residual.

In this specification, data from the two compilations (GTAP and KF) are pooled together based on a preliminary regression set: where a dummy variable indicating source/compilation was included. The dummy variable and its interactions were found to be insignificant, thus justifying the pooled approach. (Results from these preliminary regressions are included in Annex 1).

The results from the final specification represented by the equations above are reported in Annex 2 and analyzed using Figure 14.1 in the following.

Box: Notes on Constructing the Regression Dataset

For the purposes of the regression analysis, each country's shares from each compilation (GTAP or KF) are assigned to the decade from which they were likely estimated.

In the case of the KF compilation, each country's cost shares are assigned to the last decade in which new shares are reported. E.g. in the case of Australia, if the latest new shares are reported for the decade 2001-10 (and repeated thereafter) they are assigned to that decade.

In the case of GTAP, country shares are assigned to the decade based on the year of the source reported in the GTAP documentation (previous Primary Factor Shares Chapter). Thus, if the source for Australia is dated 1996, the reported share is assigned to the decade 1991-2000.

The shares, now assigned to a decade, are then paired to average GDP per capita and average arable land per capita in that decade. (These data are obtained from the World Bank WDI Database. Taiwan is excluded since the World Bank does not report GDP and land for Taiwan.)

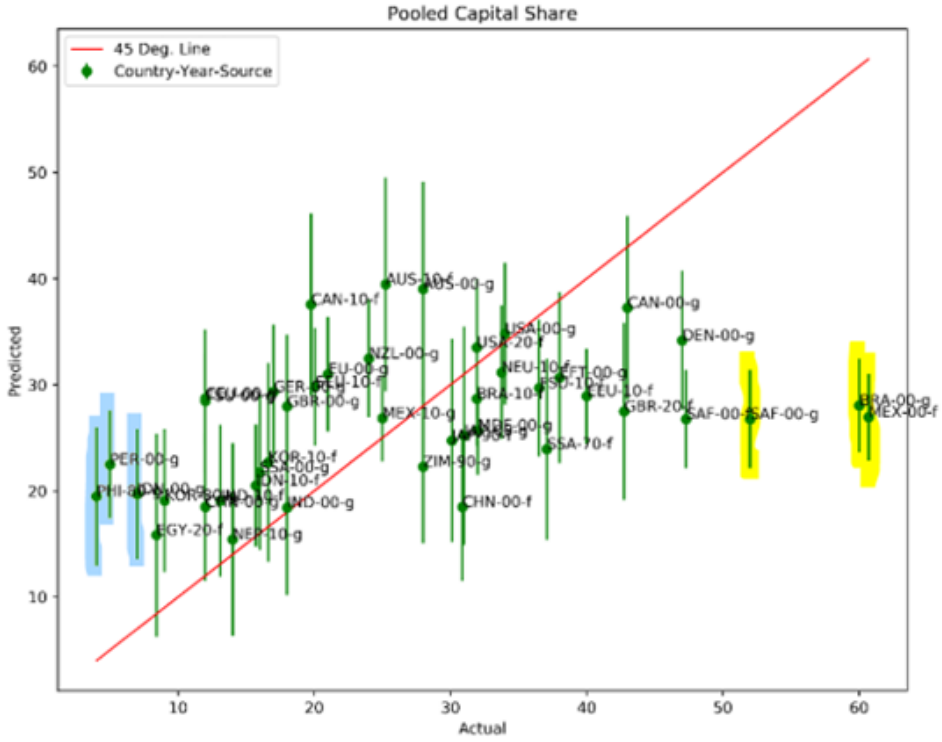
Other exclusions: New Zealand and Denmark are excluded from the FK set since these observations are the same as Australia and Germany (use the same cost shares). "RSA" and "Central Europe" are excluded in the GTAP set since it was not clear what set of countries fall under these region aggregates (and these are not present in the FK set either).

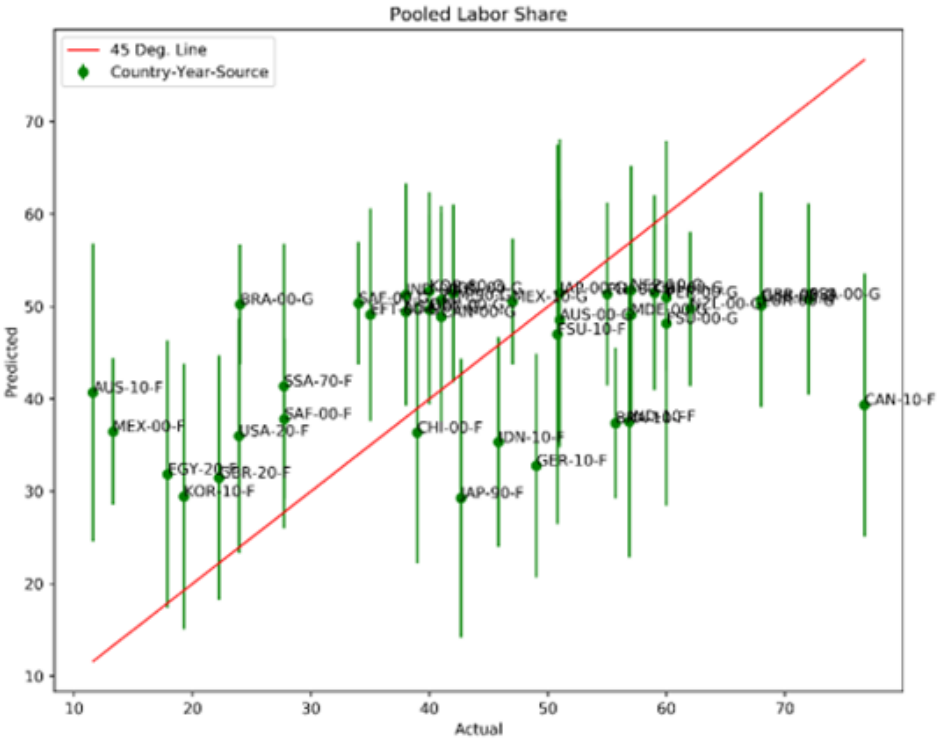
In the figures below, the results of the regression are shown such that actual (reported) shares are plotted against predicted shares, along with error bars that represent two standard deviations above and below the prediction. (Regression results are included at the end of the document). Outliers are then identified as those cases where the actual share lies outside the 95% confidence interval for the predicted value. An as example, in the case of capital shares (upper graph) the yellow bars highlight examples of "large" outliers – actual shares that are far from predicted values +/- two standard deviations. Blue highlights indicate other "smaller" outliers.

Proceeding in this way, we identify all outliers in each case. Then, one possible approach to choosing between competing shares is to choose the source (GTAP or FK) which has labor and capital shares that are not outliers, or smaller outliers.

The outcome of this approach is given by the table below, where columns under "choice" indicate which source would be preferred if outliers are avoided.

Figure 14.1: Results – Identifying Outliers using Predicted Shares





Note: Charts for land are derived as the residual and not shown here since it is only valid to consider outliers in capital and labor. If both are outliers, land will be as well. If one is a high outlier, the other low, land will not appear to be an outlier.

Table 14.2: Choosing between GTAP and KF shares

Country	Fuglie					GTAP					Choice	
	Assigned Decade	Capital Share	Share Outlier	Labor Share	Share Outlier	Assigned Decade	Capital Share	Share Outlier	Labor Share	Share Outlier	Preferred Source	Reason
Australia	2001-2010	25		12	YY	1991-2000	28		51		GTAP	Labor share is large outlier in Fuglie compilation; hence GTAP preferred though this is dated and includes informal sources. See qualitative comparison.
New Zealand						1991-2000	24		62	Y	GTAP	GTAP shares are outliers, but no alternative estimate available.
Japan	1981-1990	30		43		1991-2000	31		51		GTAP	No obvious choice; but GTAP shares more recent
Korea	2001-2010	17		19		1971-1980	9		40	Y	Fuglie	GTAP labor share is an outlier
Philippines						1971-1980	4	Y	55		GTAP	No Fuglie estimate available
Southeast Asia/Indonesia	2001-2010	16	Y	46		1991-2000	7		42		Fuglie	GTAP share outlier for both labor and capital; while Fuglie outlier for capital only
China	1991-2000	31		39		1991-2000	12		59		Fuglie	No obvious choice; however Fuglie shares closer to predicted shares

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Country	Fuglie					GTAP					Choice	
	Assigned Decade	Capital Share	Outlier	Labor Share	Outlier	Assigned Decade	Capital Share	Outlier	Labor Share	Outlier	Preferred Source	Reason
Taiwan	2001-2010	17	N/A	19	N/A	1971-1980	8	N/A	54	N/A	Fuglie	GTAP estimates are dated; note however that Taiwan was not included in the regression analysis since GDP data not available
India	2001-2010	13	Y	57	YY	1991-2000	18		38		Fuglie	GTAP source is dated
Nepal						2001-2010	14		57		GTAP	No Fuglie estimate
Canada	2001-2010	20	Y	77	YY	1991-2000	43		41		GTAP	Labor share large outlier in Fuglie
United States	2011-2020	32		24	Y	1991-2000	34		38		-	See section on the U.S. below
Brazil	2001-2010	32		56	YY	1991-2000	60	YY	24	YY	Fuglie	GTAP shares are larger outliers
Latin America/Peru						1991-2000	5	YY	60	Y	GTAP	No Fuglie estimate
United Kingdom	2011-2020	43	Y	22		1991-2000	18		68	Y	Fuglie	Choice not obvious; Fuglie estimates are more recent
Germany						1991-2000	17	Y	68	YY	Fuglie (NWE)	GTAP estimates include large outliers; hence Fuglie estimate for Northwest Europe preferred instead (reported in later rows)
Denmark						1991-2000	47	Y	40		Fuglie (NWE)	GTAP estimate is outlier and less recent; Fuglie estimate for Northwest Europe preferred instead (reported in later rows)

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Country	Fuglie					GTAP					Choice	
	Assigned Decade	Capital Share	Share Outlier	Labor Share	Share Outlier	Assigned Decade	Capital Share	Share Outlier	Labor Share	Share Outlier	Preferred Source	Reason
Central Europe						1991-2000	12	YY	53		Fuglie (EE)	Central Europe in GTAP is assumed to be comparable to Eastern Europe in Fuglie; both compilations include outliers; however Fuglie estimates are more recent
European FTA						1991-2000	38		35	Y	Fuglie (NWE)	GTAP labor share is a larger outlier, while Fuglie estimate for Northwest Europe are more recent (see below)
European Union						1991-2000	21	Y	68	YY	Fuglie (NWE, SE)	EU countries are included in Southern and Northwest Europe in the Fuglie compilation; GTAP estimate includes larger outliers; Fuglie estimate are more recent as well
Northwest Europe excl. UK (NWE)	2001-2010	34		49							Fuglie	See reasons for other European countries and aggregates above
Europe, Southern (SE)	2001-2010	20	Y	67	YY							
Eastern Europe (EE)	2001-2010	40	Y	27	Y							
Former Soviet Union, All (FSU)	2001-2010	37		51		1991-2000	12	YY	60		Fuglie	GTAP shares are dated and outliers

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Country	Fuglie					GTAP					Choice	
	Assigned Decade	Capital Share	Outlier	Labor Share	Outlier	Assigned Decade	Capital Share	Outlier	Labor Share	Outlier	Preferred Source	Reason
FSU, European	2001-2010	37	N/A	51	N/A						Fuglie	These sub-regions of FSU were not included in the regression; only the FSU aggregate was included which is not an outlier
FSU, Asia	2001-2010	46	N/A	24	N/A							
FSU, Baltic	2001-2010	36	N/A	29	N/A							
Middle East						1991-2000	32	Y	57		GTAP	No Fuglie estimates
South Africa	1991-2000	47	YY	28	Y	1991-2000	52	YY	34	YY	Fuglie	Outlier in both sources, but larger outlier in GTAP
Southern Africa/Zimbabwe						1981-1990	28		41		GTAP	No Fuglie estimates
Sub-Saharan Africa	1961-1970	37		28		1991-2000	16		72	YY	Fuglie	GTAP labor share large outlier
Mexico	1991-2000	61	YY	13	YY	2001-2010	25		47		GTAP	Large outliers in Fuglie
Rest of South America (RSA)						N/A	25	N/A	60	N/A	GTAP	Not included in regression since source year not available; however no alternative estimate available
Egypt	2020	8	Y	18							Fuglie	No GTAP estimate

Notes: YY indicates a “large” outlier; “Y” indicates a “smaller” outlier; indicates outliers on the margin. CI refers to confidence interval (+/- 2 standard deviations)

United States

In the case of the U.S., the USDA provides yearly estimates of agricultural value-added and cost shares. Furthermore, these shares do not show large variability between years. Hence, in the case of the U.S. we take the special approach of using year-specific value-added share as reported by the USDA.[1]

These data were processed as follows: labor share includes all labor (hired and family). Capital share includes durable equipment, service buildings, inventories as well as purchases of services (assumed to be largely hired machinery), and fuel and electricity costs.

A.3 Qualitative Comparison

In this section, the sources and methodologies behind each of the compilations are described and compared. Only countries with estimates available under both Fuglie and GTAP compilations included in the following – where a comparison is needed.[2]

[1] https://www.ers.usda.gov/data-products/agricultural-productivity-in-the-us/

[2] We had no access to the texts for Japan and Korea.

Table 14.3: Australia

FK	GTAP
Source: Zhao, S., Y. Sheng, and E. Gray. 2012. "Productivity of the Australian Broadacre and Dairy Industries: Concept, Methodology and Data," in Productivity Growth in Agriculture: An International Perspective, K. Fuglie, S.L. Wang, and V.E. Ball, eds., pp. 73-108. Wallingford, UK: CABI Publishing. Google book: https://tinyurl.com/yccncg2g	Sources: IO Table from the ABS (for labor) Ball, V.E. 1996. Unpublished worksheets, personal communication, April 30. (for other factors)
The Australian Bureau of Agricultural and Resource Economics and Sciences (ABARES) tracks productivity growth (using a Fisher index/ accounting framework). ABERES conducts farms surveys. The data cover "broadacre" and dairy sectors that account for 50-60% of all Australian agricultural production. LAND: is area operated. Cost of land is measured by its opportunity cost as a capital asset (value times interest). CAPITAL: includes farm improvement, machinery, and livestock. Prices measured by deflated present value for building/farm; rental rates for capital when rented (otherwise user cost approach). LABOR (large outlier) Notes: ABARE cost data refer only to "broad acre" agriculture (grain, livestock, dairy), and does not include horticulture or viticulture, which may bias it's labor share downward.	Labor share is obtained from a government published IO table. For capital share unpublished data are used (from 1996). Neither shares are outliers.

Table 14.4: Indonesia

FK	GTAP
Source: Fuglie, K. 2010. "Sources of Growth in Indonesian Agriculture," Journal of Productivity Analysis 33(3):225-240. https://link.springer.com/content/pdf/10.1007/s11 009-0150-x.pdf	Source: OECD (1993) Green Model
Measures productivity in Indonesian agriculture using an accounting method (Tornqvist-Theil Index). Updates time series data constructed by another paper (Van der End 1996) with improvements (aquaculture is included) Data cover the years 1961-2006 LAND: includes area planted to perennials and area in aquaculture. Aggregation is quality adjusted. Cost share is estimated as residual output revenue. CAPITAL (outlier): includes machinery (number of tractors adjusted for size) and livestock LABOR: is quality adjusted (quality measure based on spread of literacy and primary education)	CAPITAL (outlier) LABOR (outlier)

Table 14.5: China

FK	GTAP
Source: Fan, S., and X. Zhang. 2002. "Production and Productivity Growth in Chinese Agriculture: New National and Regional Measures," Economic Development and Cultural Change 50(4):819-838.	Source: Martin, W. 1993. "Modeling the Post-Reform Chinese Economy," Journal of Policy Modeling 15(5&6):545-579.
Uses accounting method (Tornqvist-Theil Index) to measure productivity growth. Data cover the years 1952-1997 LAND: is arable land; land price is measured as residual of total production net of inputs CAPITAL: includes machine power (all mechanical power) and capital of animals (20-33.3% of current value of animal depending on type). 20% of total machinery value is used as price of machinery. LABOR: is person-year equivalent of workers engaged in agriculture and excludes those engaged in other rural industry	

Table 14.6: India

FK	GTAP
Source: Rada, N., and D. Schimmelpfennig. 2015. Propellers of Agricultural Productivity in India, ERR-203, U.S. Department of Agriculture, Economic Research Service. `https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2715084`	Source: Chadha, Rajesh, Sanjib Pohit, Alan V. Deardorff and Robert M. Stern. 1998. The Impact of Trade and Domestic Policy Reforms in India: A CGE Modeling Approach, The University of Michigan Press, Ann Arbor.
Employs Tornqvist-Theil index approach. Constructs comprehensive state level dataset. Data cover the years 1980-2008 LAND: is net land in production (area sown twice is not counted twice) CAPITAL (outlier): includes livestock and machinery LABOR: is size of workforce in agriculture adjusted for labor's declining days worked	CGE study constructs IO table for the year 1983-84 LABOR (outlier)

Table 14.7: Canada

FK	GTAP
Source: Cahill, S., and T. Rich. 2012. "A Production Account for Canadian Agriculture, 1961-2006," in Productivity Growth in Agriculture: An International Perspective, K. Fuglie, S.L. Wang, and V.E. Ball, eds. Wallingford, UK: CAB International. Google books: https://tinyurl.com/y6vfwdgc Do not have access to full text	Source: Echevarria, C. (1997) "A Three-Factor Agricultural Production Function: The Case of Canada", International Economic Journal, 12(3): 63-75. (Revised)
Constructs production account with improvements in data over Statistics Canada Data cover the years 1961-2006 CAPITAL (outlier): LABOR (large outlier): accounts labor hours of operators and unpaid family labor Notes: Ag Canada adopted an unusual approach of assigning all residual profits to labor (most studies assign residual profits to land, after accounting for other inputs costs based on their observed prices or expenditures), which may explain the high labor shore.	Estimates agricultural production function (with CRS) of three basic factors. [Cobb Douglas function with factor intensities already calculated]. Data cover the years 1971-91 LAND: "Employed land" CAPITAL: includes repairs to buildings, fences, machinery repairs, livestock purchases, artificial insemination, total depreciation LABOR: includes unpaid family labor

Table 14.8: United Kingdom

FK	GTAP
Source: Thirtle, C., J. Piesse, and D. Schimmelpfennig. 2008. "Modeling the Length and Shape of the R&D Lag: An Application to UK Agricultural Productivity," Agricultural Economics 39(1):73-85. `https://tinyurl.com/yckjhre3`	Source: Henrichsmeyer, W. and A. Ostermeyer-Schlöder. 1988. "Productivity Growth and Factor Adjustment in EC Agriculture," European Review of Agricultural Economics, 15:137-54. (for Labor) Ball, V.E. 1996. Unpublished worksheets, personal communication, April 30. (for other factors)
Updates TFP growth in the using the Tornqvist-Theil Index based on Thirtle et. al. (2004) Data cover the years 1953-2005 No details on inputs provided. CAPITAL (outlier)	Henrichsmeyer paper uses growth accounting LAND: not elaborated (residual?) CAPITAL: estimates of capital flows for buildings, machinery, and equipment LABOR (outlier): labor input from Eurostat's Sectoral Income and National Index and National Statistics.

Table 14.9: EU

FK	GTAP
Source: Ball, V.E., J.-C. Butault, C. Mesonada, and R. Mora. 2010. "Productivity and International Competitiveness of Agriculture in the European Union and the United States," Agricultural Economics 41(6):611-627. https://onlinelibrary.wiley.com/doi/pdf/10.1111/j.1574-0862.2010.00476.x?casa_token=YmQGIDlNQTAAAAAA:ifCiE8E5zYO6qI_T85-X5XTcvfZPAmovz6lVJHrTfdu8bUV5	Sources: Ball, V.E. 1988. "Modeling Supply Response in a Multiproduct Framework," American Journal of Agricultural Economics, 70(4):813-25. (for USA labor) Henrichsmeyer, W. and A. Ostermeyer-Schlöder. 1988. "Productivity Growth and Factor Adjustment in EC Agriculture," European Review of Agricultural Economics, 15:137-54. (for EU countries Labor) Ball, V.E. 1996. Unpublished worksheets, personal communication, April 30. (for other factors)
Study is concerned with measuring international competitiveness; uses chain weighted measure of average productivity Product and factor accounts are constructed for 12 countries following Eurostat manual Data cover the years 1973-2002 LAND: is ratio of the value of land in farms to the a trans-log index price index of land in farms CAPITAL: is measured by capital stock data for the EU LABOR: is hours of work of hired, self-employed and unpaid family workers	Uses growth accounting; for the years 1965-1985 CAPITAL: estimates of capital flows for buildings, machinery, and equipment LABOR (Germany – outlier): labor input from Eurostat's Sectoral Income and National Index and National Statistics.

Table 14.10: Russia

FK	GTAP
Source: Rada, N., W. Liefert, and O. Liefert. 2017. Productivity Growth and the Revival of Russian Agriculture, ERR-228, U.S. Department of Agriculture, Economic Research Service. `https://ageconsearch.umn.edu/record/256716/`	Source: OECD (1993) Green Model
Measures productivity growth using the Tornqvist-Theil index Data cover the years 1994-2013 LAND: is area sown CAPITAL: includes animals, tractors and harvesters. Machinery sale prices depreciated by 10% used as price of capital LABOR: is number of farm workers including family labor	LAND CAPITAL (outlier) LABOR

Table 14.11: South Africa

FK	GTAP
Source: Schimmelpfennig, D., C. Thirtle, J. van Zyl, C. Arnade, and Y. Khatri. 2000. "Short and Long-Run Returns to Agricultural R&D in South Africa, or Will the Real Rate of Return Please Stand Up?" Agricultural Economics 23(1):1-15. https://www.sciencedirect.com/science/article/abs/pii/S0169515000000505	Source: Thirtle, C.; van Zyl, J. and Vink, N. (2000) South African Agriculture at the Crossroads: An Empirical Analysis of Efficiency, Technology and Productivity, Macmillan Press LTD, London, UK.
Measures TFP using the Tornqvist-Theil index using national farm-level production data. (Update of Thirtle et. al. 1993) Data cover the years 1947-1997 LAND: Not described CAPITAL (large outlier): includes vehicles, livestock and building improvements, LABOR (outlier): is hired labor Notes: South African numbers have been biased due to the dualist structure of its agricultural sector (large white farms v. small black farms). Apartheid-era statistics include output of both sectors but only input of large farm sector. Post-Apartheid era has struggled to get an accurate agricultural census.	Estimates long run profit function with Divisia aggregated inputs. (Years of study not stated in this chapter of book). LAND: Not elaborated CAPITAL (large outlier): vehicles, buildings and fixed improvements, livestock LABOR (outlier): is hired labor

Table 14.12: Mexico

FK	GTAP
Source: Fernandez-Cornejo, J., and C. Shumway. 1997. "Research and Productivity in Mexican Agriculture," American Journal of Agricultural Economics 79(3):738-753. https://tinyurl.com/yd9wag94	"Haley for South America"
Uses Tornqvist-Theil Index Data cover the years 1960-1990 No details on inputs provided LAND (large outlier) CAPITAL (large outlier) LABOR	

Table 14.13: Brazil

FK	GTAP
Source: Agricultural Census 1970, 1985, 1996, 2006	Source: Brandão, A.S.P., T.W. Hertel, A. Campos. 1994. "The Implications of International Agricultural Trade Liberalization for Brazilian Agriculture," in I. Goldin, O. Knudsen, and A.S. Brandao, (eds.), Modeling Economy-Wide Reforms Development Centre of the Organization for Economic Co-Operation and Development. Paris: Chapter 4, pp 193-222.
Unpublished estimates provided by Nick Rada derived from the 1985, 1995/96 and 2006 census data. LAND: CAPITAL: LABOR (large outlier)	LAND CAPITAL (large outlier) LABOR (large outlier)

Table 14.14: Sub-Saharan Africa

FK	GTAP
Source: Fuglie, K. 2012. "Productivity Growth and Technology Capital in the Global Agricultural Economy," in Productivity Growth in Agriculture: An International Perspective, K. Fuglie, S.L. Wang, and V.E. Ball, eds. Wallingford, UK: CAB International.	Source: Haley, S.L. 1991. "Capital Accumulation and the Growth of Aggregate Agricultural Production," Agricultural Economics, 6:129-157.
These are estimated econometrically assuming a CRS CD production function, with coefficients held constant region-wide and over time. One can do about as well just assuming one-third each cost share for land, labor, and capital (capital is mainly in the form of livestock).	LAND CAPITAL LABOR (large outlier)

Table 14.15: Preliminary Pooled SUR Regression incl. source dummies

	Capital Share	Labor Share
Fuglie=1	33.95	-2.938
	(1.14)	(-0.08)
gdp_pc	3.852*	-0.0213
	(2.07)	(-0.01)
Fuglie*GDP_pc	-3.328	-0.332
	(-1.11)	(-0.09)
land_pc	4.218	-1.637
	(1.44)	(-0.46)
Fuglie*land_pc	-1.279	4.583
	(-0.33)	(0.95)
_cons	-4.071	48.24*
	(-0.22)	(2.1)
N	43	
F tests:		
(1) [kap]Fuglie = 0		
(2) [lab]Fuglie = 0		
F(2, 68) =	0.84	
Prob > F =	0.4344	
(1) [kap]Fuglie*GDP_pc = 0		
(2) [lab]Fuglie*GDP_pc = 0		
F(2, 68) =	0.94	
Prob > F =	0.3947	
(1) [kap]Fuglie*land_pc = 0		
(2) [lab]Fuglie*land_pc = 0		
F(2, 68) =	0.48	
Prob > F =	0.6234	
t statistics in parentheses		
* p<0.05, ** p<0.01, *** p<0.001		

Table 14.16: FINAL REGRESSION RESULTS (POOLED SUR)

	(1) wo. Land pc	(2) w. Land pc
CAPITAL EQUATION		
gdp_pc	3.584*	2.903
	(2.48)	(1.97)
land_pc		3.330
		(1.68)
_cons	-5.786	5.398
	(-0.44)	(0.37)
LABOR EQUATION		
gdp_pc	-0.567	-0.853
	(-0.32)	(-0.45)
land_pc		1.395
		(0.55)
_cons	50.14**	54.83**
	(3.03)	(2.93)
N	43	43
t statistics in parentheses		
* p<0.05, ** p<0.01, *** p<0.001		