

AGEC 340 -- EXERCISE 1. EXAMPLE OF A CLEAR AND COMPLETE SPREADSHEET

(Note there are many ways to do a spreadsheet like this -- the important thing is to make it clear, so the reader can understand each step.)

Downloaded IMF data

Country	Subject Descriptor	Scale	2007	2008	2009	2010	2011	2012	2013	2014
Indonesia	Gross domestic product base	Units	3,721.8	3,980.0	4,149.4	4,356.4	4,580.0	4,854.9	5,179.7	5,541.5
Indonesia	Population	Millions	225.6	228.6	231.5	234.6	237.6	240.7	243.8	247.0
Nigeria	Gross domestic product base	Units	2,052.2	2,162.1	2,199.1	2,281.3	2,369.4	2,486.3	2,621.0	2,765.1
Nigeria	Population	Millions	143.9	147.8	151.9	156.1	160.3	164.8	169.3	173.9

Source: International Monetary Fund, World Economic Outlook Database, October 2009

Percentage Growth Rates (calculated from IMF data)

(Row letters are variable names in the formula for demand growth, $d = p + g \times n$.)

Indonesia	GDP per capita (PPP)	(g)	6.9%	4.3%	5.0%	5.1%	6.0%	6.7%	7.0%
Indonesia	Population	(p)	1.3%	1.3%	1.3%	1.3%	1.3%	1.3%	1.3%
Nigeria	GDP per capita (PPP)	(g)	5.4%	1.7%	3.7%	3.9%	4.9%	5.4%	5.5%
Nigeria	Population	(p)	2.8%	2.7%	2.8%	2.7%	2.8%	2.7%	2.8%

Income Elasticities of Demand

Questions (a)-(d) -- with "old" estimated elasticities from the course slides/textbook

Indonesia	Inc. elast. of demand	Cereals	(n)	0.29	0.29	0.29	0.29	0.29	0.29	0.29
Indonesia	Inc. elast. of demand	Poultry	(n)	1.50	1.50	1.50	1.50	1.50	1.50	1.50
Nigeria	Inc. elast. of demand	Cereals	(n)	0.17	0.17	0.17	0.17	0.17	0.17	0.17
Nigeria	Inc. elast. of demand	Poultry	(n)	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Questions (e)-(f) -- with "new" estimated elasticities from the assignment handout

Indonesia	Inc. elast. of demand	Cereals	(n)	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Indonesia	Inc. elast. of demand	Poultry	(n)	1.2	1.2	1.2	1.2	1.2	1.2	1.2
Nigeria	Inc. elast. of demand	Cereals	(n)	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Nigeria	Inc. elast. of demand	Poultry	(n)	1.2	1.2	1.2	1.2	1.2	1.2	1.2

Growth Rates of Demand (calculated from the data above, as $d = p + g \times n$)

Questions (a)-(d)

(Row letters used only for explanations below.)

Indonesia	Demand growth	Cereals	(a)	3.3%	2.5%	2.7%	2.8%	3.0%	3.2%	3.3%
Indonesia	Demand growth	Poultry	(b)	11.7%	7.7%	8.8%	9.0%	10.3%	11.3%	11.8%
Nigeria	Demand growth	Cereals	(c)	3.7%	3.0%	3.4%	3.4%	3.6%	3.7%	3.7%
Nigeria	Demand growth	Poultry	(d)	8.1%	4.5%	6.5%	6.6%	7.7%	8.2%	8.3%

Questions (e)-(f) -- with new income elasticities

Indonesia	Demand growth	Cereals	(e)	2.7%	2.2%	2.3%	2.3%	2.5%	2.6%	2.7%
Indonesia	Demand growth	Poultry	(f)	9.6%	6.4%	7.3%	7.5%	8.5%	9.3%	9.7%
Nigeria	Demand growth	Cereals	(g)	3.8%	3.1%	3.5%	3.5%	3.7%	3.8%	3.9%
Nigeria	Demand growth	Poultry	(h)	9.2%	4.8%	7.2%	7.4%	8.7%	9.2%	9.4%

Question (f) -- when Nigeria has Indonesia's income growth

Nigeria	Demand growth	Cereals	(i)	4.1%	3.6%	3.7%	3.8%	4.0%	4.1%	4.1%
Nigeria	Demand growth	Poultry	(j)	11.1%	7.9%	8.7%	8.9%	10.0%	10.8%	11.1%

Questions and answers

	<u>Answer</u>	<u>Explanation</u>
(a) In Indonesia, for which product (cereals or poultry) will consumption grow faster? _____	Poultry	compare lines (a) and (b)
(b) In Nigeria, for which product (cereals or poultry) will consumption grow faster? _____	Poultry	compare lines (c) and (d)
(c) For cereals, in which country (Indonesia or Nigeria) will consumption grow faster? _____	Nigeria	compare lines (a) and (c)
(d) For poultry, in which country (Indonesia or Nigeria) will consumption grow faster? _____	Indonesia	compare lines (b) and (d)
Now, redoing the calculations with income elasticities of 1.2 for poultry and 0.2 for cereals:		
(e) For which question(s) above (a, b, c, d, or "none") does this change your answer? _____	None	use (e)-(h) instead of (a)-(d)
And also if Nigeria were to attain the same projected income growth as Indonesia:		
(f) For which question(s) above (a, b, c, d, or "none") does this change your answer? _____	Only (d)	line (j) is now larger than (f)