ECON 6470 Growth and Development Final Exam Review Questions v2 Fall 2017

This year the final exam is due December 30th emailed to mcleodassign@gmail,com. This class's work assignments have been outstanding, especially on endogenous growth and we have even more evidence that technical change is endogenous in developing countries. Answer any three of these questions.

FE-1v2 Diversity, openness and growth: One of the most unexpected developments of this century has been what Alwyn Young calls the African Growth miracle. (a) One reason that this growth surge was unexpected is that Easterly and Sachs argued ethnic "fractionalization" and geography were holding down African growth, though Sachs advocated a surge in aid and debt relief. Give the current evidence on aid and growth, who seems to be correct. (b) Reconcile the Fractionalization and growth arguments with recent evidence on innovation and birthplace diversity… see the three papers starting with Alesina, 2000. (c) Was their really and African growth Miracle, see the DHS evidence presented by Young, and Figure 2.2 below and in particular the growth in Ethiopia discussed by Rodrik et al.

FE-2v2 Inequality, convergence and economic Growth: (a) Starting with Solow many interpreted that the rising capital share predicted by Piketty was due to an elasticity of substitution between labor and capital greater than one. Explain how this is consistent with "endogenous growth" as expressed as a violation of one of the Inada conditions. (b) In his reply to Mankiw et al. Piketty argues the rising capital share is not necessarily (c) Review the IMF WEO Chapter 3 April 2017 arguments regarding the fall in labor shares in a number of countries. Are their finding consistent with Piketty et als. Arguments regarding the rising capital or falling wage share? Are these trends like to continue? (d) Surprisingly, the latest IMF Fiscal Monitor reviews several alternative approaches to redistributing income. Why is this important for given recent trends in globalization discussed by Baldwin, 2016 and illustrated by Cashew factories in Vietnam? What is driving growth and TFP in Vietnam?

FE-3v2 In "making a miracle" Lucas, 1996 argues the structural transformation is what created the East Asian miracle, moving workers from low productivity to high productivity sectors (as in the 2 sector Matsayumi model use by McLeod and Mileva, 2015 and Rodriguez and). (a) Why is this "miracle" growth surge end? Rodrik, 2008 adds EPZs and undervalued exchange rates as an antidote for weak institutions is this consistent with China's recent growth slowdown (why is manufacturing growth/exports or the Belassa Samuelson effect an important part of this argument). (b) With wages rising manufacturing exports falling productivity growth seems likely to slow, is there evidence of this in the PWT 9.0 or elsewhere (c) In the ***Great Convergence,*** Baldwin, 2016 argues low wage workers with high technology (perhaps driven by R&D spending in China for example). Falling global inequality is consistent with convergence, does this seem to be what is driving global convergence (falling inequality). Cite some evidence if possible. Is this absolute or conditional, sigma or best convergence? How do you know? (d) Perhaps the most unanticipated "growth miracle" is that we are witnessing in India now? Is this growth being driven by structural transformation or rapid productivity growth or does it fit the Ethiopia story Rodrik et al. 2017 explore? What does India have that many countries discussed above do not?

Empirical questions

FE-4v2 In his famous "Tyranny of Numbers" article Alwyn Young claimed Asian growth was anything but a miracle, finding very little TFP growth in Asia. Recent press in that press accounts claim that China's TFP growth has slowed again (post 2008) due in part of collapse of exports. (a) Is there evidencc of a productivity slowdown in the Penn World Tables 9.0? They also have data by sector… is this available for China? (b) Still we have anecdotal evidence of productivity growth in even lower wage Vietnam… (c) Why do Arrow et al. 2004 argue TFP growth in China and India is critical to sustainable development (see their Table 2 below)? Is their evidence in the PTW that TFP growth is slowing?

FE-5v2 A) Summarize the recent evidence associated with Berg, 2011 on inequality and growth surges. How does is a focus on growth surges consistent with both exogenours Find an IMF Article IV report or regional economic outlook that uses a panel growth econometrics to make a policy argument. B) Do they use dynamic panel estimates? Discuss the "too many instruments problem, how had this problem affected famous articles on finance and growth and inequality and growth? C) what aspects of growth

Table 2
Growth Rates of Per Capita Genuine Wealth

Country	(1) Genuine Investment as Percent of GDP	(2) Growth Rate of Unadjusted Genuine Wealth	(3) Population Growth Rate	(4) Growth Rate of Per Capita Genuine Wealth—before TFP Adjustment	(5) TFP Growth Rate	(6) Growth Rate of Per Capita Genuine Wealth—after TFP Adjustment	(7) Growth Rate of per capita GDP
Bangladesh	7.14	1.07	2.16	−1.09	0.81	0.30	1.88
India	9.47	1.42	1.99	−0.57	0.64	0.54	2.96
Nepal	13.31	2.00	2.24	−0.24	0.51	0.63	1.86
Pakistan	8.75	1.31	2.66	−1.35	1.13	0.59	2.21
China	22.72	3.41	1.35	2.06	3.64	8.33	7.77
Sub-Saharan Africa	−2.09	−0.31	2.74	−3.05	0.28	−2.58	−0.01
Middle East/ North Africa	−7.09	−1.06	2.37	−3.43	−0.23	−3.82	0.74
United Kingdom	7.38	1.48	0.18	1.30	0.58	2.29	2.19
United States	8.94	1.79	1.07	0.72	0.02	0.75	1.99

Note: These calculations employ the following parameters: output-capital ratio, poor countries/regions 0.15; output-capital ratio, rich countries 0.20; α (share of human and reproducible capital in output) 0.58.
Data for genuine investment, population growth, and GDP growth derive from the World Bank (2003). The genuine investment percentages of GDP derive from data over the time-intervals indicated in Table 1. The population growth rate is the average rate over the period 1970–2000.
The estimate for China's total factor productivity (TFP) growth is from Collins and Bosworth (1996). For all other countries or regions, the estimates are from Klenow and Rodriguez-Clare (1997).

Possible FE-6V2

Question FE-6v2A Population growth, migration and Economic growth; A) in the standard Solow-Swan model rising population growth leads to lower growth, show this and explain the intuition behind this result. Contrast this result with that of Kremer (2003) or the GMR (2016) population growth dividend. Low population growth can also lead to secular stagnation, explain with reference to Summers and Alvin Hansen (look for formal models0 of this. B) What does **Deaton 2013** argue was the greatest intellectual error of the 20th century? Use the 2016 World Bank GMR Chapter 5 and models from one of our texts to argue that an increase/decrease in population growth will slow or increase economic growth. Which story fits the standards Solow-Swan model best, illustrate this story using standard growth Solow

diagram (be sure to distinguish between long term and transitional growth). How might these results differ **(C) PhD students:** use B&S, 2004 (2nd ed) in the CD reader or Aghion and Howitt, 2006 or Jones and Volmort (2013) 3rd edition to present the key equations* of a model where population growth increases economic growth. How does this take place? Does speed of converge or gender play a role? Compare migration with a "natural" increase or decrease in population growth. *as long as they are in word format, submitted before the exam, you can bring numbered equations printed the exam and refer to them in the text of your answer (do prepare text in advance). D) Slowing population growth plays an important role in Piketty's rising inequality story the potential effect of population growth on growth in your country over the next 30 years (see Bloom and Canning or see the Appendix of WB-IMF, 2016. Discuss the role of remittances or migration in your country's growth (if any). See for example the debate over guest workers and aid to Haiti and discuss the wisdom of the Turkey/Australia solution to the refugee crisis.

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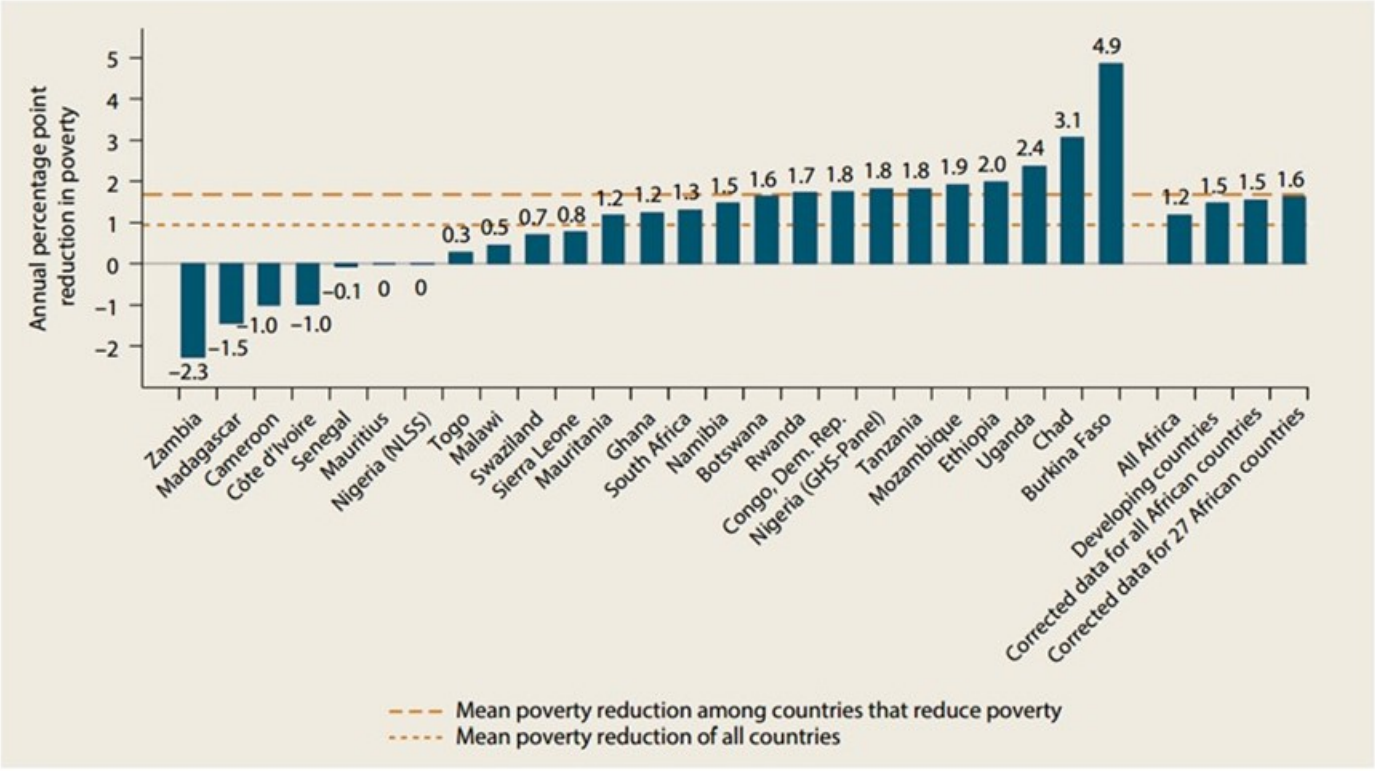
***Please check to make sure your African country is in this chart. Otherwise the quality of HH income data, inequality etc. is questionable… hopefully one of your peer or comparator countries is here.

FIGURE 2.2 Analysis based only on comparable surveys suggests that poverty reduction in Africa was faster than previously thought



Source: Data for individual African countries are from World Bank Africa Poverty Database. Developing country data are from PovcalNet.
Note: Positive values denote a reduction in poverty, while negative values denote an increase. The survey years are as follows: Botswana (2002 and 2009), Burkina Faso (1998 and

https://openknowledge.worldbank.org/handle/10986/22575

F-5 Bonus Question (answer online or in class if you can) The World Bank-IMF 2016 Global Monitoring Report *Development Goals in an Era of Demographic Change* identifies two potential demographic dividends. The first has to do with the share of working age population and is transitory and positive and negative. In contrast according to the GMR as summarized on page 14, *"As changes in the age structure expand production and resources, a second demographic dividend may arise as savings build up and greater investment is possible in human and physical capital. The bonus provided by the first dividend is transitory, while the second dividend produces lasting benefits in the form of greater productivity growth and enhanced sustainable development. Yet, these outcomes are not automatic—they depend on effective policies. The two demographic dividends thus represent an opportunity—and not a guarantee— of greater prosperity and improved living standards."* (a) Focusing on the 2nd dividend use the growth theory we have studied in this class to discuss how even a permanent increase in savings may have only transitory effects on growth rates (unless we believe in endogenous growth models). Can increased savings or human capital investment have permanent effects on long term growth in an exogenous growth model? Explain (hint: one of hybrid models discussed on the midterm and in the Agenor chapter on Human capital and economic growth). Why does economic growth increase permanently in this case? Suppose this effect works in receiving countries, but we see the opposite effect in sending countries (a brain drain?). What would the effect of migration be on convergence in this case? Contrast with the textbook case where n rises in rich countries and falls in the migrant sending country? What can skilled migrant exporting countries do to reverse this effect (China, India and South Africa are doing this). Finally discuss how return migration of skilled migrants is can accelerate convergence and global growth… (b) If you have not already, discuss how the 1st Demographic dividend relates to modern migration and asylum policies, why might this be more important to Germany or Japan than the U.S., UK or Italy? Briefly explain why immigration tends to increase TFP and native wages whereas greater exchange of goods as opposed to people, may not (see Hausmann or Peri and Shih on this). Discuss how the 1st Demographic dividend could in fact contribute to long term growth and global convergence.

Table 2A: NYU Law School report on ICE Apprehensions New York City[1/] 2006 to 2010[2/]

	# of Appre-hensions	Share Apprended	Share FB Share	Excess Share deported	2012 FB share[3/]
Mexico	6795	20	5.8	14	5.7
El Salvador	3375	9.8	0.9	8.9	1.2
Dominican Rep	3038	8.8	12	-3.1	13
Ecuador	2590	7.5	4.5	3.0	4.0
Guatemala	2229	6.5	0.7	5.8	0.9
Honduras	2219	6.5	1.1	5.4	1.0
Jamaica	1900	5.5	5.6	-0.1	5.6
Colombia	1028	3.0	2.4	0.6	2.5
China	940	2.7	8.9	-6.2	9.4
Guyana	715	2.0	4.5	-2.5	4.4
Cuba	707	2.0	0.6	1.4	0.5
Trinidad & Tobago	697	2.0	3.0	-1.0	2.9
Haiti	490	1.4	3.1	-1.7	3.1
Peru	429	1.2	1.1	0.1	0.9
Pakistan	389	1.1	1.2	-0.1	1.3

1/ By borough: Queens 34%;Brooklyn 29%; the Bronx 19%, Manhattan 14%

2/ Reported apprehensions from October 2005 to December 2010.

3/ Source: Occhiogrosso-Schwartz Joshua (2012) page 7.

http://immigrantdefenseproject.org/wp-content/uploads/2012/07/NYC-FOIA-Report-2012-FINAL.pdf

Please correct this reference: Angrist, Joshua D.and Pischke, (2014). Mastering 'Metrics: The Path from Cause to Effect (p. iv). Princeton University Press. Kindle Edition. “Applied econometrics, known to aficionados as ’metrics, is the original data science. ’Metrics encompasses the statistical methods economists use to untangle cause and effect in human affairs. Through accessible discussion and with a dose of kung fu-themed humor, Mastering ’Metrics presents the essential tools of econometric research

F-6 Dutch Disease, Middle income Traps and Growth (not a question this year, but let me know if you are interested)

Frankel, J. A. (2010). The natural resource curse: a survey (No. w15836). National Bureau of Economic Research.

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Galiani, Sebastian, Stephen Knack, Ben Zou, Lixin Colin Xu The Effect of Aid on Growth: Evidence from a Quasi-Experiment NBER Working Paper No. 22164 Issued in April 2016 NBER [1]

[1] The literature on aid and growth has not found a convincing instrumental variable to identify the causal effects of aid. This paper exploits an instrumental variable based on the fact that since 1987, eligibility for aid from the International Development Association (IDA) has been based partly on whether or not a country is below a certain threshold of per capita income. The paper finds evidence that other donors tend to reinforce rather than compensate for reductions in IDA aid following threshold crossings. Overall, aid as a share of gross national income (GNI) drops about 59 percent on average after countries cross the threshold. Focusing on the 35 countries that have crossed the income threshold from below between 1987 and 2010, a positive, statistically significant, and economically sizable effect of aid on growth is found. A one percentage point increase in the aid to GNI ratio from the sample mean raises annual real per capita growth in gross domestic product by approximately 0.35 percentage points.

TABLE 3: GROSS OFFICIAL DEVELOPMENT ASSISTANCE IN 2015

Preliminary data for 2015 Source OECD

	ODA USD million current		**ODA USD million current**			**ODA USD million At 2014 prices & Fx rates**	Percent change 2014 to 2015
	2 014		**2 015**	Share	Cumm	**2015**	Change
United States	**31 793**		**33 864**	**22**	**22**	**31 475**	-7.1
Germany	**19 641**		**19 347**	**13**	**35**	23 038	19.1
United Kingdom	**18 809**		**19 917**	**13**	**48**	20 036	0.6
Japan	**15 146**		**15 708**	**10**	**59**	16 930	7.8
France	**11 132**		**12 540**	**8. 3**	**67**	13 175	5.1
Sweden	**7 102**		**6 309**	**4. 2**	**71**	8 538	35.3
Netherlands	**5 821**		**5 726**	**3. 8**	**75**	6 942	21.2
Norway	**4 294**		**5 110**	**3. 4**	**79**	5 548	8.6
Canada	**4 330**		**4 286**	**2. 8**	**81**	5 015	17.0
Italy	**3 897**		**4 096**	**2. 7**	**84**	4 639	13.3
Australia	**3 222**		**4 405**	**2. 9**	**87**	3 897	-11.5
Switzerland	**3 575**		**3 603**	**2. 4**	**89**	3 799	5.4
Denmark	**2 655**		**3 151**	**2. 1**	**92**	3 133	-0.6
Belgium	**1 935**		**2 495**	**1. 7**	**93**	2 306	-7.6
Spain	**1 769**		**2 118**	**1. 4**	**95**	2 101	-0.8
Korea	**1 993**		**1 938**	**1. 3**	**96**	2 097	8.2
Finland	**1 312**		**1 635**	**1. 1**	**97**	1 565	-4.3
Austria	**1 215**		**1 239**	**. 8**	**98**	1 433	15.6
Ireland	**718**		**816**	**. 5**	**98**	831	1.9
Poland	**467**		**473**	**. 3**	**99**	557	17.8

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