The exam is in three parts. Please answer all questions. Think carefully, and make your answers brief and to the point. If you need additional space, continue answers on the blank pages at the end.

Part 1. [18 points] No explanations are needed in this section. Just follow the instructions in square brackets, which tell you to circle your answer or fill in the blanks.

1. [4 points] The figure below is from the Clemens and Demombynes (2010) article on assessing the Millennium Development Villages project. What do they suggest as the most reliable estimate, given these data, of the impact of the program on the fraction of children immunized in the Millennium Village in Nigeria? [Circle only one]
   a. +0.13
   b. +0.26
   c. +0.10
   d. +0.05

2. [6 points] In class we developed a simple model of the spread. [Fill in the blanks]
   a. The spread is defined as the difference between
      __________________________________________________________
      and _____________________________________________________.
   b. Identify two variables that help determine the size of the spread:
      #1: __________________________________________________________
      #2: __________________________________________________________.
3. [4 points] In class we defined the real exchange rate as $RER = P_F / P_N$. When a country devalues its nominal exchange rate (or allows it to depreciate), this tends to [Circle one:] increase/decrease the real exchange rate, and therefore to produce a real [Circle one:] appreciation/depreciation.

4. [4 points] Suppose that in a rural village, the food production of the $i$th household in year $t$ is given by $Y(it) = 100 + \rho(t) + \mu(it)$, where $\rho(t)$ and $\mu(it)$ are random shocks that are not correlated with each other, and that each have an expected value (i.e., an average over many repeated draws) of zero. Unfortunately, food is not storable, the village is isolated from regional food markets, and financial firms are not interested in offering crop insurance. What level of food consumption can the village guarantee to each household, if the village can operate a perfect mutual insurance scheme? [Circle your choice:]
   a. 100
   b. $100 + \rho(t)$
   c. $100 + \mu(it)$
   d. $Y(it)$

**Part 2. [28 points]** Characterize the statement as True, False, or Uncertain, and briefly explain your reason. Points depend on your explanation.

5. [6 points] **T, F, U, Explain:** Not-for-profit microfinance institutions should be required to be financially sustainable, rather than depending, as they do, on large public subsidies.

6. [6 points] **T, F, U, Explain:** The lack of much formal bank credit to households or small- to medium-sized enterprises in Africa is evidence that these potential borrowers do not have access to high-yielding investment opportunities.
7. [6 points] T, F, U, Explain: If a civil war is feasible, it will occur.

8. [6 points] T, F, U, Explain: In contrast with rural credit or crop insurance, rainfall insurance may be something that formal financial institutions can profitably offer in rural Africa.

9. [4 points] T, F, U, Explain: The availability of China as a new development partner will be highly favorable for the countries of “emerging Africa”.
Part 3. [54 points] Short essays.
10. [12 points] Radelet documents a sharp and sustained improvement in economic growth in 17 African countries starting in the mid-1990s. He says that “the rise of more democratic and accountable governments and the introduction of more sensible economic policies together ignited the turnaround in the 1990s and have helped sustain it over time.” (p. 15). There are two factors here – call them democratization and better policies. It’s fairly obvious that better policies would help growth. Do you agree with Radelet that democratization played an important causal role in the growth turnaround? If so, what were the channels? If not, why not?
11. [10 points] In class we looked at a poverty trap model in which the overall level of productivity in the economy was a function of the capital stock per capita. In the diagram below, we assume that productivity is constant, but we follow Sachs et al. (2004) in assuming that the growth rate of the population, \( n \), is a function of the level of income per capita. Because \( y = Ak^\alpha \), we know that \( n \) is therefore implicitly a function of the capital stock per capita, so that we can replace \( n \) with \( n(k) \) in our analysis. The heavy line shows a shape for the function \( [n(k) + \delta] \cdot k \) that is consistent with Sachs’s discussion of the relationship between fertility and income.

\[ Investment \ per\ capita \]

\[ k \]

a. How many steady states does this model have – i.e., how many values of \( k \) for which \( \Delta k = 0? \) _____ Identify these steady state values of \( k \) clearly on the diagram.

b. Now use the diagram to show that a temporary ‘big push’ aid program can produce a permanent exit from poverty. Explain this briefly in words how this happens (make sure you refer to what happens to population growth).
12. [10 points] Collier (1991) argued that African countries needed agencies of restraint, having dismantled multiparty democracies, independent central banks, and other restraints in the first decade after independence. He argued that conditionality was poorly suited to performing this role, and that the CFA zone was particularly well suited. Critically examine these two arguments.
13. [12 points] Jean-Paul Azam (2007) points out that the resources transferred from the south of Cote d’Ivoire to the north under President Houghouet-Boigny (until his death in 1993) went well beyond what could be justified by a standard public finance view of redistribution. Yet, according to Azam, it would have been a serious mistake for external donors to insist on the elimination of these transfers. What is Azam’s argument? Use his diagram to illustrate.
14. [10 points] Collier and O’Connell point out that Sub-Saharan Africa is the only region of the world that became more natural-resource-intensive after 1990 (this is often measured by the ratio of primary commodity exports to GDP). Global evidence suggests that natural resource abundance may be more of a growth challenge than a growth opportunity. Identify two distinct channels through which a ‘natural resource curse’ might operate, and explain whether your two channels apply equally to primary (deep-pit or undersea) diamond deposits and secondary (alluvial) diamond deposits.
SPACE FOR CONTINUATION OF ANSWERS (PLEASE INDICATE THE QUESTION NUMBER):