

Agricultural Transformation and Urbanization: Challenges for Uganda

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Queen Elizabeth House and CSAE
Oxford University

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I. An Appreciation of the Bank of Uganda

Accomplishments

- The Bank of Uganda has been a leader in designing and implementing policies that have led to macroeconomic stability and growth.
- Effective management of monetary policy has had profound benefits for Uganda's economy.
- The Bank of Uganda has also provided a model of professionalism that has drawn the admiration of many other African countries and of external observers.

Greetings from QEH

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19 October 2016

Governor Emmanuel Tumusiime Mutebile
Bank of Uganda
Kampala, Uganda

Dear Governor

On behalf of the Oxford Department of International Development, which is better known to some as Queen Elizabeth House, I send our warmest congratulations to you and the staff of the Bank of Uganda on the occasion of your Golden Jubilee.

The Bank has a distinguished history and continues to play a key role in maintaining macroeconomic stability and creating the context for economic growth in Uganda. This Department shares with the Bank of Uganda a desire to understand the processes that lead to inclusive development. We note the numerous friendships and collegial relationships that connect members of our department with Ugandan colleagues, in the Bank and beyond, and we send our very best wishes for this celebration.

Yours sincerely

A handwritten signature in dark ink, appearing to read "C. Adam".

Christopher Adam

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Greetings from the CSAE



18 October 2016

The Centre for Study of African Economies sends congratulations and good wishes to the Bank of Uganda on the occasion of its Golden Jubilee. The CSAE itself is marking its 30th anniversary in 2016, and we share with the Bank of Uganda a commitment to improve the understanding of economic development and to identify policies that create the basis for inclusive growth and development.

We note longstanding links between CSAE researchers and the Bank of Uganda, and we look forward to continuing collegial interactions in years ahead.

With sincere best wishes

Stefan Dercon

Director, Centre for the Study of African Economies



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II. Introduction: Achieving Structural Transformation

Sectoral and Spatial Disparities

- Within many developing countries, we see large spatial and sectoral disparities.
- Differences in productivity levels across sectors
 - ▶ agricultural and non-agricultural productivity levels (Gollin, Lagakos and Waugh 2014)
- Differences in living standards between urban and rural areas.
 - ▶ urban and rural living standards (Young 2013)
- Differences in living standards *within* rural areas, between more densely populated and less densely populated areas (Gollin, Kirchberger and Lagakos 2014).

Structural Transformation Is Inevitable

- These disparities will necessarily drive some form of transformation.
- Transformation is inevitable, given the differences in living standards and productivity.
- Transformation has already started, in the sense that people are moving out of agriculture and out of rural areas.
- But transformation can take time...
- And not all forms of transformation are equally desirable.

The Policy Challenge

- Addressing these sectoral and spatial differences is perhaps the key challenge of development.
- How do we create patterns of growth that narrow these disparities?
- How do we create economies that allow for the transformation of rural livelihoods?
- How do we create economies that provide productive jobs in urban areas?
- How do we link urban growth with rural growth, industry with agriculture?

This Lecture

- No answers!
- But perhaps some lessons learned...
- And maybe some ideas!

Outline of Lecture

- Agricultural Productivity Gaps
- Spatial Disparities in Living Standards
- Urbanization without Industrialization
- Improving Rural-Urban Linkages

III. Agricultural Productivity Gaps

Sectoral Productivity Gaps

- In Uganda, as in many developing countries, agriculture's share of employment is high.
- Agriculture's share of value added is *systematically lower* than share of employment
- Implies that VA/L lower in agriculture than non-agricultural sector.

Defining the Agricultural Productivity Gap

- We define the Agricultural Productivity Gap (APG) to be the ratio of value added per worker in non-agriculture to value added per worker in agriculture; i.e.:

$$APG \equiv \frac{VA_n/L_n}{VA_a/L_a}.$$

- Under some moderately restrictive assumptions, APG should be close to 1; this is a useful benchmark.
- Data suggest large and persistent agricultural productivity gaps in Uganda.
 - ▶ No surprise to anyone who has spent time in rural areas.
 - ▶ Certainly no surprise to policy makers.

The Agricultural Productivity Gap in Uganda

Year	Agriculture's Share of	
	Employment	Value Added
1991	0.74	0.40
2001	0.71	0.26
2009	0.66	0.24
2010	0.69	0.24
2011	0.69	0.24

The Agricultural Productivity Gap in Uganda

Year	Agriculture's Share of		Raw APG
	Employment	Value Added	
1991	0.74	0.40	4.3
2001	0.71	0.26	7.0
2009	0.66	0.24	6.1
2010	0.69	0.24	7.0
2011	0.69	0.24	7.0

Adjusting the APGs

- We cannot interpret the raw APGs as being entirely about productivity.
- There are important differences between the people working in the two sectors.
- We can adjust for skill differences and differences in hours worked.

Adjusting for Schooling Differences

Year	Average Schooling		Average Human Capital	
	Agric.	Non-Agric.	Agric.	Non-Agric.
1991	2.91	5.74	1.3	1.8
2001	3.83	7.84	1.5	2.2
2009	4.70	7.40	1.6	2.1
2010	4.90	7.90	1.6	2.2
2011	4.90	8.35	1.6	2.3

Adjusting for Schooling Differences, cont.

Year	Average Schooling		Average Human Capital		Human Capital Ratio
	Agric.	Non-Agric.	Agric.	Non-Agric.	
1991	2.91	5.74	1.3	1.8	1.33
2001	3.83	7.84	1.5	2.2	1.49
2009	4.70	7.40	1.6	2.1	1.31
2010	4.90	7.90	1.6	2.2	1.35
2011	4.90	8.35	1.6	2.3	1.41

Adjusting for Hours Worked

Year	Average Hours Worked	
	Agriculture	Non-Agriculture
1991	-	-
2001	-	-
2009	22.90	47.10
2010	21.50	44.80
2011	20.80	49.20

Adjusting for Hours Worked

Year	Average Hours Worked		Ratio
	Agriculture	Non-Agriculture	
1991	-	-	
2001	-	-	
2009	22.90	47.10	2.06
2010	21.50	44.80	2.08
2011	20.80	49.20	2.37

The Agricultural Productivity Gap in Uganda

Year	Agriculture's Share of		Raw APG
	Employment	Value Added	
1991	0.74	0.40	4.3
2001	0.71	0.26	7.0
2009	0.66	0.24	6.1
2010	0.69	0.24	7.0
2011	0.69	0.24	7.0

The Agricultural Productivity Gap in Uganda

Year	Agriculture's Share of		Raw APG	Adjusted APG
	Employment	Value Added		
1991	0.74	0.40	4.3	1.6
2001	0.71	0.26	7.0	2.3
2009	0.66	0.24	6.1	2.3
2010	0.69	0.24	7.0	2.5
2011	0.69	0.24	7.0	2.1

Interpreting the APG

- It is difficult to know how to interpret the residual APG.
 - ▶ We cannot rule out many other sources of these measured productivity differences.
 - ▶ There may be many kinds of sorting and selection.
 - ▶ Does not mean that markets are inefficient.
- But it is also true that the APGs are supported by many other measures showing higher living standards in urban areas and densely populated areas in general.
 - ▶ Work with Martina Kirchberger and David Lagakos finds that densely populated areas consistently have better average outcomes for measures of housing quality, health outcomes, public service provision, educational achievement, and almost everything else.

IV. Urbanization without Industrialization

Urbanization: A Goal for Policy?

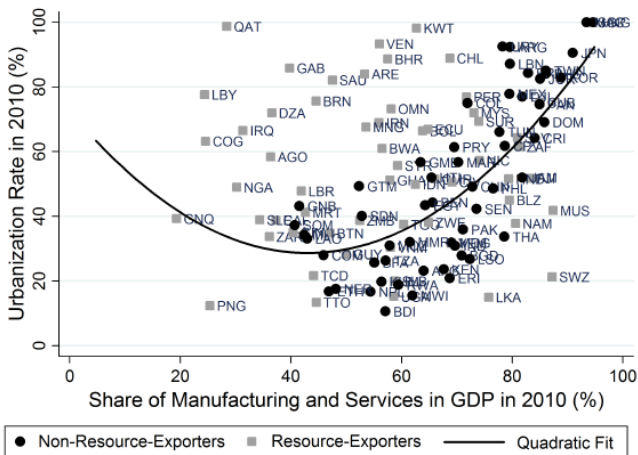
- If living standards are higher in urban areas, and if productivity is higher in non-agriculture, should we be promoting more rapid movement of people to cities?
 - ▶ If so, how would we do this?
 - ▶ Or perhaps urbanization is already as rapid as we can handle!
- What do we really know about the forces driving urbanization in Africa?

Urbanization and Economic Structure

- All developing countries have been urbanizing rapidly in the past several decades.
 - ▶ Uganda among the very fastest!
- Urbanization is strongly associated with income growth.
- But not all urbanization is associated with transformation – at least as we understand it.
- In particular, across all developing countries, urbanization rates are only weakly correlated with economic activities that we think of as primarily urban (i.e., manufacturing and services).

Urbanization and Economic Structure, cont.

Figure 2: Urbanization and Industrialization for Entire Sample of Non-Resource-Exporting and Resource-Exporting Countries

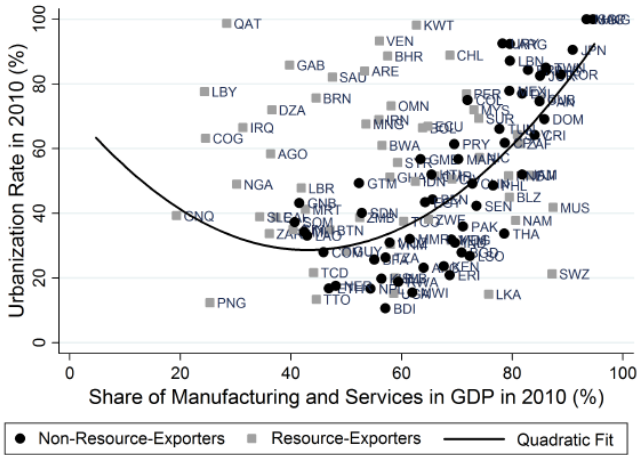


Urbanization and Economic Structure, cont.

- But this weak overall relationship turns out to conceal underlying patterns.
- Urbanization is strongly correlated with manufacturing and services *except* in countries that are dependent on resource exports.
 - ▶ These resource-dependent countries have urbanization without industrialization.
 - ▶ Their cities are places where consumption activity takes place; “consumption cities.”
 - ▶ In contrast, in other countries, we see industry taking place in urban areas: “production cities.”
- Most African cities are consumption cities rather than production cities.
- Places where resource rents are spent on non-tradable services, rather than places where manufactured goods are produced for export. ☰ 🔍 ↺

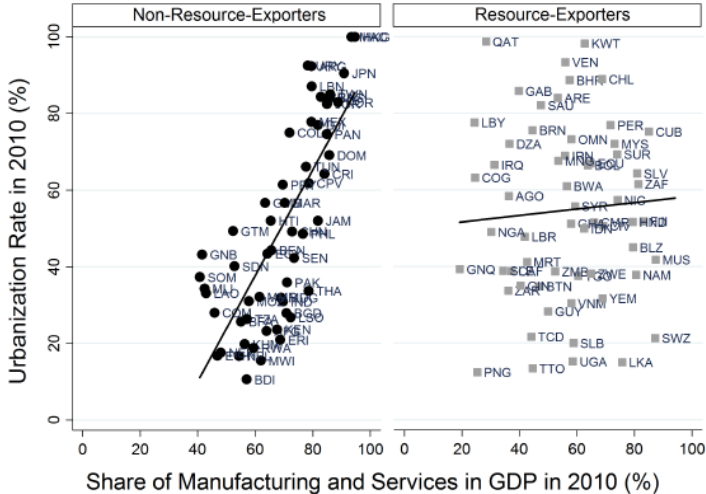
Urbanization and Industrialization

Figure 2: Urbanization and Industrialization for Entire Sample of Non-Resource-Exporting and Resource-Exporting Countries



Urbanization and Industrialization

Figure 3: Urbanization and Industrialization Separately for Non-Resource-Exporting and Resource-Exporting Countries



Types of Urbanization and Transformation

- Why do we care?
 - ▶ Cities are thought to be places where lots of productive externalities arise.
 - ▶ But is this equally true when the only production activities are informal services?
- The type of urbanization may matter!
- Need to look for paths to urbanization and transformation that drive change across the whole economy.
- As Collier (2016) has written, not all paths to urbanization are equally successful.

How to Promote Productive Transformation?

- How can Uganda promote a transformation process that leads to productive cities?
- One channel is certainly through export-oriented manufacturing...
- But an additional channel is to take advantage of emerging domestic markets.
- In particular, there are possibilities to build on the rapidly growing urban demand for food.
- The food processing and marketing sector has been an important driver of growth in many countries.
- Growth in this sector has the potential to generate a transformation process that links urban growth with rural growth.

Drivers of Agricultural Development

- In early stages of development, agricultural development is largely driven by technologies affecting the supply of commodities.
- Uganda has already been pushing for a long time in this fashion.
- More that can be done – especially in some areas that have arguably received too little attention: e.g.,
 - ▶ markets for agricultural inputs and the integrity of seed and fertilizer supply chains (as in the IGC work of Tessa Bold, Kayuki Kaizzi, Jakob Svensson, and David Yanagizawa-Drott)
 - ▶ investments in underfunded areas of agricultural research, such as diseases of bananas, animal health, feed production for fish farming.
- But the next step is to draw on technologies that will promote agricultural development from the demand side:

Demand-driven development in agriculture

- There are limits to what can be done from the supply side.
- Demand-side interventions may well come from further down value chains:
 - ▶ Processing, packaging, marketing, and retailing
 - ▶ Target domestic and regional markets.
- Urban middle classes have increasing demand for convenience, taste, variety, quality, and other attributes of food.
- This demand can in turn drive change in the agricultural sector, as producers learn to meet this demand.

Urban Demand and Modern Retailing

- Consumers in urban areas value services offered by modern supermarkets.
- Not only the rich and expatriates; middle-class consumers with access to transport, refrigerators, and with a demand for processed food.
- In Asia and Latin America, urban demand for food has shifted heavily away from raw commodities purchased in wet markets.
- Change in this sector has been very rapid.
 - ▶ In South America, South Africa, Central Europe, and parts of East Asia, the share of modern retail in food retail went from roughly 5–10% in 1990 to some 50–60% within ten years.

Processed and Packaged Foods

- Growing supermarket sectors sell high quality foods with varying degrees of processing...
- Packaged food share of food expenditures: 7% in low-income countries, 30% in lower-middle-income countries, and 45% in upper-middle-income countries.
- Total packaged food sales are growing at 13% annually in low-income countries and 28% in lower-middle-income countries.
- Many examples already in Uganda of successful products in this space: from bottled water, juices, and soft drinks to beer.
- But this is only the beginning...

The Sub-Saharan Market for “Consumer-Oriented Food”

- A recent USDA study speaks of “Sub-Saharan Africa’s voracious appetite for imported agricultural goods.”
- The study cites annual growth in Sub-Saharan Africa’s agricultural imports of 13 percent annually for over 20 years.
- Nearly triple the agricultural imports of India (which has 300 million more people and less land)
- The growth area is in “consumer-oriented products” such as dairy, poultry, wine/beer, and vegetables.
 - ▶ These now account for 40% of the region’s agricultural imports.
- For details:

<http://www.fas.usda.gov/data/turning-point-agricultural-exports-sub-saharan-africa>

Opportunities, Not Threats

- This rapid growth creates opportunities for Ugandan industry.
- There are opportunities to create powerful market demands for both agricultural goods and for processing industries.
- Spatially diverse pathways of development
 - ▶ Processing industries do not need to be based in primary cities.
 - ▶ Packaging and processing technologies can change the location of production and reduce the challenges of transport.

The Need for Supporting Infrastructure

- Supporting infrastructure includes many ingredients, some publicly provided and some private.
 - ▶ Public: roads, cold storage, support for farmer organizations and outgrower schemes
 - ▶ Private: packaging, processing, transport
- Supermarkets source locally when they can – because it is cheaper!
 - ▶ But need reliable delivery, sufficient quantities, guaranteed quality
- Backward linkages to the agricultural sector can drive rapid change in the rural economy.

FDI in Retail and Processing

- Foreign retailers and food industry firms have key know-how.
- FDI in the retail sector can be used to drive associated processing, packaging, and marketing sectors.
 - ▶ Perhaps impose a requirement for domestic sourcing as a condition for market access.
- Modern supermarket chains can drive a process of quality upgrading in the agricultural sector.
 - ▶ They demand that their suppliers meet high standards of quality and reliability.
 - ▶ Suppliers that can meet this demand are by definition producing export-ready products.
- This process will likely create export opportunities for the commercialized suppliers.

Additional Roles for Government

- Other roles include promotion and coordination of private investments.
- Working with farmer groups so that they can participate in these supply chains.
- Working with private sector to develop appropriate regulatory environment for food safety and food marketing.
 - ▶ Supermarket chains have the incentives to engage in their own quality control.
 - ▶ May alter the role of government in significant ways.

Limits of Agricultural Commercialization

- Not a strategy that will pull in the entire agricultural sector.
- Very small farms and those in remote areas will not generally participate in these value chains.
- Smallholders may struggle to meet quality standards and reliability of delivery.
 - ▶ A possible role for farmer organizations, cooperatives, and contract farming arrangements.
- Growth in this sector will not guarantee food security for the very poor.
 - ▶ The urban poor and many in rural areas will continue to eat minimally processed food.
 - ▶ A food security agenda remains important.

Improving Rural-Urban Linkages

- How can Uganda improve rural-urban linkages?
- Some approaches are obvious:
 - ▶ Transportation infrastructure
 - ▶ Smart liberalization – with effective regulation – of input and output markets in agriculture.
 - ▶ Seek to encourage domestic value chains for urban food retail and food service sectors.
- Remain aware of the tendency for natural resource exports (including agricultural exports – and also aid inflows) to drive processes of urbanization without industrialization.

Conclusions

- Structural transformation will happen...
- The question is what pace it will follow and what shape it will take.
- Industrialization can cause urbanization, but urbanization can also promote industrialization...
 - ▶ Potential to stimulate domestic industries that target growing middle class.
 - ▶ Obvious opportunities in food and agricultural sectors, but not limited to this.
- Food and agriculture will remain important sectors for employment for many years to come;
 - ▶ Potential shifts in agri-food employment, away from the farm.
- Important to view the agricultural sector as having a useful role in transformation.

Acknowledging my co-authors

This presentation draws on a number of recent papers that I have written with a set of outstanding co-authors. The most relevant are:

- “Agricultural Transformation in Tanzania: Linking Rural to Urban through Domestic Value Chains,” joint with Radhika Goyal. Chapter 6 in *Tanzania: The Path to Prosperity*, ed. Christopher S. Adam, Paul Collier, and Benno Ndulu (Oxford: Oxford University Press, forthcoming 2017).
- “Rural-Urban Linkages, Transaction Costs, and Poverty Alleviation: The Case of Tanzania,” with Christopher Adam and David Bevan. 2016. *World Development*. <http://dx.doi.org/10.1016/j.worlddev.2016.08.013>.
- “Urbanization with and without Industrialization,” with Rémi Jedwab and Dietrich Vollrath. 2016. *Journal of Economic Growth*. 21: 35-70.

Acknowledgments and more reading

- “Agriculture in African Development: Theories and Strategies,” with Stefan Dercon. 2014. *Annual Review of Resource Economics*: 471-92.
- “Agricultural Productivity Differences across Countries,” with David Lagakos and Michael Waugh. 2014. *American Economic Review: Papers and Proceedings* 104: 165-70.
- “The Agricultural Productivity Gap,” with David Lagakos and Michael Waugh. 2014. *Quarterly Journal of Economics* 129: 939-993.
- “Productivity, Transport Costs, and Subsistence Agriculture,” with Richard Rogerson. 2014. *Journal of Development Economics* 107: 38-48.