



ESID Briefing No. 3

How should Uganda grow?

KEY FINDINGS:

- Achieving improved growth rates and structural transformation in Uganda will require a rapid rate of export growth and economic diversification
- As a growing country, Uganda needs to increase productivity in existing sectors such as agriculture, through improved inputs and food processing, and also develop new and more complex industries
- In identifying these new industries, Uganda could usefully choose those that are reasonably within reach of current capabilities, such as construction materials, and that will be in great demand in the context of oil production
- Implementing Uganda's future strategy for growth and structural transformation will require addressing several constraints, ranging from limited availability of inputs to institutional weaknesses

Income per capita in Uganda has doubled in the last 20 years. However, economic growth has been concentrated in non-tradable activities and faces challenges such as a growing gap between rural and urban incomes, a low urbanisation rate, rapid rural population growth and high dependency ratios. Structural transformation, with labour and resources moving to more productive sectors, remains in its early stages. The country is approaching an oil boom of uncertain size and duration, which presents

possibilities for external sustainability, expanded income and infrastructure and a larger internal market. It also poses new challenges from managing the inevitable volatility in oil incomes and avoiding over-specialisation in oil.

Uganda therefore needs a diversification strategy that is sustainable and government policies that will support Uganda in developing new tradable industries. The question then is, 'how should Uganda grow in order to achieve this transformation?'

METHODOLOGY

The research situates Uganda within a new understanding of how structural transformation unfolds, namely the theory of deepening economic complexity, which emphasises possible avenues of diversification based on the efficiency frontier. It evaluates Uganda's opportunities based on the country's current level of economic complexity, identifies strategies that are appropriate for Uganda's current position in the product space and offers policy recommendations that take into account challenges and constraints identified in Uganda.

FINDINGS

The agricultural sector alone cannot address Uganda's demographic transition

High rural population growth has encouraged the persistence of subsistence farming and one of the lowest agricultural productivity levels in the world. While there is great potential to improve output and productivity in agriculture in Uganda, this will lower the demand for labour in the sector, not raise it. The agricultural sector therefore cannot drive employment growth. The challenge for Uganda is to create productive jobs in other sectors to absorb the labour released from agriculture and generated by population growth. It is also important to develop new industries to increase demand for agricultural output.

Uganda needs to further increase the complexity and diversity of its industry

Economic complexity measures the amount of productive knowledge contained in a country. So how complex is Uganda? Using UN COMTRADE data for 2010, Uganda ranked as the 102nd most complex out of 128 ranked countries in the world. It ranked as the 10th most complex country out of the 25 in sub-Saharan Africa, despite its growth successes.

Uganda's exports have become more diverse over time, but are still concentrated in agro-based commodities such as coffee, tobacco, tea and cocoa (see Figure 2). These require less complex technologies and labour skills than other products, leading to a low overall level of

economic complexity. Uganda has made few inroads into the larger, more complex, and more connected communities such as garments, construction materials, chemicals, and machinery.

In terms of diversification by destination, Uganda's export market has also begun to diversify, which is important because these new markets demand Uganda's more sophisticated products. The key message to be drawn from global import projections is that Uganda would do well to continue diversifying its exports towards sub-Saharan Africa and Asia, as these are expected to be the fastest growing import markets.

"economic growth requires new and more complex industries"

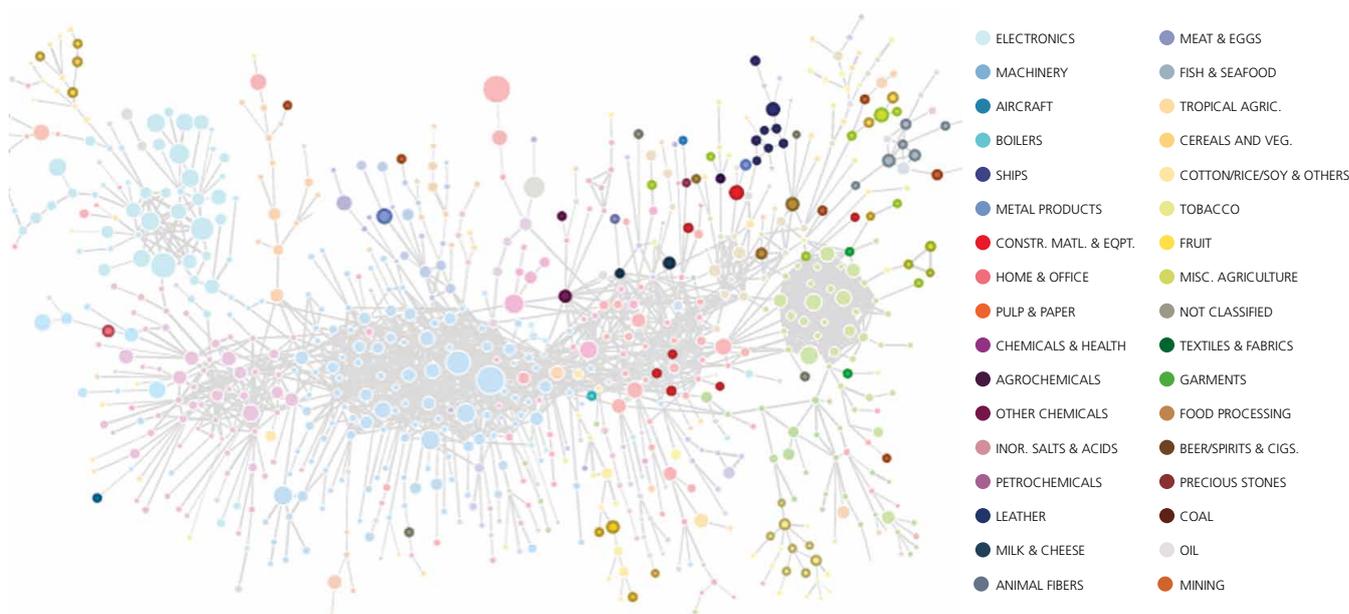
There is a set of potential new products that are feasible for Uganda

Product complexity captures how much productive knowledge a product requires. Uganda's possibilities in the product space can be evaluated using measures of distance, complexity and opportunity gain. By mapping Uganda's efficiency frontier based on complexity, distance from current productive knowledge and opportunity gain, it is possible to identify preferred products which are high in complexity or opportunity gain, but not too far away from Uganda's current productive knowledge.

However, more complex products and those with higher opportunity gain are generally more distant and therefore more difficult to develop, creating trade-offs between the desired qualities of the products. Deciding how to diversify Uganda's production involves taking into account these trade-offs.

The depiction of Uganda's efficiency frontier provided by Figure 3 provides a picture of the available choices. Above Uganda's current average level of complexity, the closest community along the efficiency frontier is food processing and Uganda already has some presence in this community. Construction materials and equipment is the next community along the efficiency frontier. Importantly, this community offers a sizable opportunity value without being prohibitively distant.

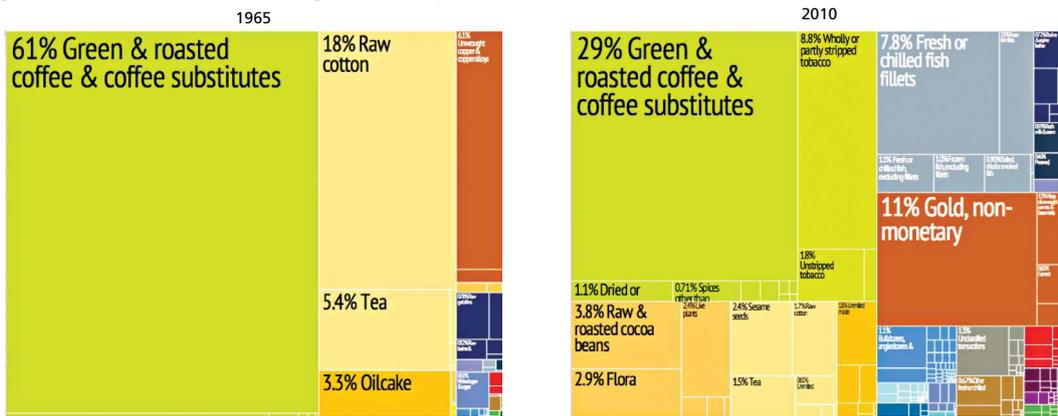
Figure 1: Uganda's location in the product space



Source: Atlas of Economic Complexity (Hausmann *et al.*, 2011)

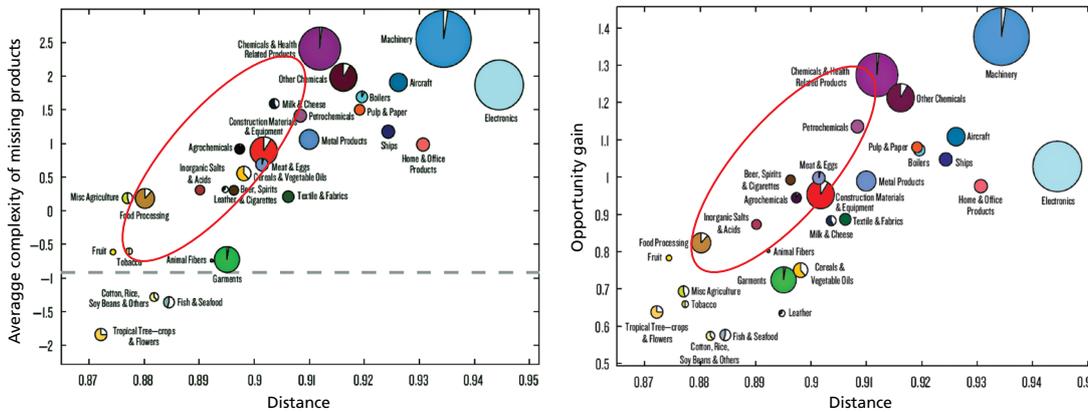
Note: Each node is a product and its size is determined by its share of world trade. Two products are connected by links based on their probability of being co-exported by countries. The darkly shaded products are those which Uganda exports with comparative advantage.

Figure 2: The evolution of Uganda's exports over time



Source: Observatory of Economic Complexity (MIT, 2012)
 Note: Each product's size gives its share in the export basket; colour denotes community.

Figure 3: Uganda's efficiency frontier, by community



Source: Calculations based on the Atlas of Economic Complexity and COMTRADE data

Other communities, such as garments, offer sufficient opportunity gain, but do not represent an improvement over Uganda's average level of complexity. Metal products and textiles are either less complex for the same distance, or more distant for the same complexity. Finally, some communities, such as machinery and chemicals, offer both high complexity and a large opportunity value, but they are prohibitively distant given Uganda's current productive knowledge.

More jobs or better jobs?

Another potential trade-off exists between creating more jobs versus better jobs. Two strategies are proposed to balance this trade-off:

- *Parsimonious transformation* which emphasises industries that are in the vicinity of a country's current set of capabilities but that have higher sophistication. In particular, this strategy should emphasise labour-intensive industries.
- *Strategic bets* which emphasise sectors that are more sophisticated and provide a larger strategic value, even if they lie at a greater distance. These industries are important for driving economic growth, further diversification and urban job creation.

Examining the top-ranking products for each strategy indicates that for parsimonious transformation they are mostly processed inputs or outputs of the agricultural industry, that is food processing and agrochemicals, while for strategic bets they represent mostly construction and industrial materials such as plastics, metal and paper products. The parsimonious transformation index prioritises distance; while the strategic bets index prioritises complexity and opportunity gain while accepting products that lie at a greater distance. Therefore a dual track incorporating both strategies would provide greater opportunities for Uganda than those that would emerge if it were to concentrate exclusively on adding value to its existing raw materials.

Constraints that affect economic diversification in Uganda

Economic development in Uganda faces constraints from the limited availability of necessary public goods and factors of production. Underlying these constraints are inadequate institutional structures through which the government and private sector can interact to identify and solve problems. In addition to current constraints, an oil boom in the near future may create macro-economic conditions that constrain Uganda's economic diversification.

Constraints to investment in Uganda that have been articulated in Uganda's National Development Plan 2010/11-2014/15 are inadequate access to finance, low availability of skilled workers, and poor infrastructure especially regarding the supply of electricity. However, these issues are not an exhaustive list of constraints in Uganda. Institutional weaknesses also mean that institutions and state capacity are inadequate to support structural transformation and diversification. As a result, government agencies struggle to identify and address constraints, and to provide the resources, incentives and enabling environment required to achieve not only growth but also structural transformation.

A new approach to industrial policy

The recommendations for industrial policy therefore focus on solving the meta-problem of identifying and seeking solutions to specific constraints. The approach proposed in this study is an application of the problem driven iterative adaptation (PDIA) approach to government reform (see ESID Working Paper 27, also summarised in ESID Briefing No. 2; Andrews *et al.*, 2012). PDIA can be employed to build institutional mechanisms that promote a constructive collaboration between the public and private sectors and enhance the capacity of government agencies.

POLICY IMPLICATIONS

A conscious strategy to diversify is needed, along with policies that set targets for the non-oil deficit.

Diversification strategies

Uganda needs to look at products which balance the desire to increase the diversification and complexity of production, while not over-stretching existing capabilities e.g. agricultural inputs, such as agrochemicals and food processing. In addition, Uganda would do well to concurrently develop more complex industries, such as construction materials, that are reasonably within reach of current capabilities and will be in great demand in the context of an oil boom. There is also a market for these products in neighbouring East African countries, where its geographic location constitutes an advantage rather than a disadvantage.

Preventing a resource curse

Uganda will need a plan to manage revenue from the oil boom in order to avoid excessive real exchange rate appreciation and volatility. To address this, the government could make a credible commitment to a stable and competitive real exchange rate by setting a target for the non-oil fiscal deficit that does not respond to short-term fluctuations in oil revenues. This will give stability to spending and reduce the inefficient specialisation that originates from a volatile real exchange rate. This will ultimately lead to a more diversified economy.

Principles for engaging in industrial policy

Implementing industrial policy is often challenged by a range of governance problems, including the limited capacity of government to provide key public goods, such as infrastructure, and the challenge of avoiding state-business relations that are collusive rather than productive. It is important that the political dynamics of achieving growth and structural transformation are considered carefully (Sen, 2012). A set of operational rules and principles, including legitimacy, co-financing, transparency and accountability may help to discipline and direct the process of implementing industrial policy in a constructive way.

FURTHER READING

ESID Working Paper 20: Investigating the links between political settlements and inclusive development in Uganda: towards a research agenda, by Frederick Golooba-Mutebi and Sam Hickey.
ESID Working Paper 5: The political dynamics of growth, by Kunal Sen.

ESID Working Paper 27: Overcoming the limits of institutional reform in Uganda, by Matt Andrews and Lawrence Bategeka (also summarised in ESID Briefing No. 2).

ESID Working Paper 30: How should Uganda grow? By Ricardo Hausmann, Brad Cunningham, John Matovu, Rosie Osire and Kelly Wyatt.

Andrews, M., Pritchett, L. and Woolcock, M. (2012). 'Escaping Capability Traps through Problem-Driven Iterative Adaptation'. *HKS Faculty Research Working Paper Series RWP12-036*. Cambridge MA, USA: Harvard Kennedy School.

Hausmann, R., Hidalgo, C., Bustos, S., Coscia, M., Chung, S., Jimenez, J., Simoes, A. and Yildirim, M. (2011). *The Atlas of Economic Complexity*. Cambridge MA, USA: Center for International Development, Harvard University.

MIT (2012). Observatory of Economic Complexity. [Online resource available at: <http://atlas.media.mit.edu>].

ESID Working Papers and Briefings Papers are available at www.effective-states.org

ABOUT THIS BRIEFING

This briefing was produced from an ESID project examining economic growth, structural transformation and diversification in Uganda, drawing on a new line of research which demonstrates that a country's productive structure does matter for economic growth. It was drafted by Kate Pruce, adapted from ESID Working Paper 30, with input from Professor Sam Hickey (ESID Research Director, The University of Manchester). The research was undertaken by Ricardo Hausmann, Brad Cunningham, Rosie Osire and Kelly Wyatt (Center for International Development, Harvard University) and John Matovu (Independent Consultant, Uganda), coordinated by ESID Research Director Professor Sam Hickey. The Economic Policy Research Center in Uganda provided much appreciated logistical support for this research.

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ESID researchers are based in Bangladesh, Cambodia, Ghana, India, Malawi, Peru, Rwanda, South Africa, Uganda, UK, USA, Zambia and elsewhere.

ESID is led by David Hulme, Chief Executive Officer; Samuel Hickey and Kunal Sen are Research Directors; Julia Brunt is the Programme Manager; and Pablo Yanguas is Research Associate.

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identifying routes to social justice

Effective States and Inclusive Development Research Centre

School of Environment and Development

The University of Manchester

Oxford Road

Manchester

M13 9PL

UK

email: esid@manchester.ac.uk

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