

Industries without Smokestacks in Uganda and Rwanda

John Spray & Sebastian Wolf

University of Cambridge, ODI & The IGC

December 14, 2016

Main findings

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- ③ IWS can connect economy and drive output growth

Outline

- 1 Descriptive Section: High productivity industries and trade
- 2 Analytical Section: Interconnections and growth
- 3 Conclusions and Policy Recommendations

Some Rwandan firms are more productive than others

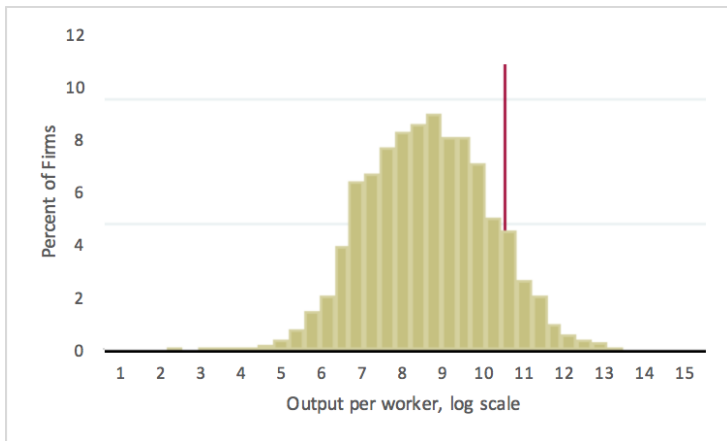


Figure: Histograms of output/worker across firms in Rwanda, logarithmic scale of USD, 2009-2015

Three characteristics identify successful firms in Rwanda

Table: Ranking of top 30 Rwandan industries by labor productivity, at ISIC level

| | Industry | # of . Workers | Av. Output |
|---------------------------------|--|-------------------|---------------|
| 4 | Mining and quarrying | 52 | 206,323 |
| 13 | Telecommunications | 22 | 80,457 |
| 26 | Travel agency and tour operator activities | 11 | 26,651 |
| 28 | Building completion and finishing | 27 | 44,622 |
| Mean across all ISIC industries | | 12 | 22,396 |

How do successful industries differ?

- Economies of scale

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| | Industry | # of . Workers | Av. Output | %is exp. | %supply exp. |
|---------------------------------|--|-------------------|---------------|-------------|-----------------|
| 4 | Mining and quarrying | 52 | 206,323 | 16 | 4 |
| 13 | Telecommunications | 22 | 80,457 | 13 | 23 |
| 26 | Travel agency and tour operator activities | 11 | 26,651 | 6 | 10 |
| 28 | Building completion and finishing | 27 | 44,622 | 15 | 13 |
| Mean across all ISIC industries | | 12 | 22,396 | 5 | 5 |

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- Economies of scale
- Connection to external sector

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Table: Ranking of top 30 Rwandan industries by labor productivity, at ISIC level

| | Industry | # of . Workers | Av. Output | %is exp. | %supply exp. | Import/ Output |
|---------------------------------|--|-------------------|---------------|-------------|-----------------|-------------------|
| 4 | Mining and quarrying | 52 | 206,323 | 16 | 4 | 0.40 |
| 13 | Telecommunications | 22 | 80,457 | 13 | 23 | 0.03 |
| 26 | Travel agency and tour operator activities | 11 | 26,651 | 6 | 10 | 0.03 |
| 28 | Building completion and finishing | 27 | 44,622 | 15 | 13 | 0.14 |
| Mean across all ISIC industries | | 12 | 22,396 | 5 | 5 | 0.44 |

How do successful industries differ?

- Economies of scale
- Connection to external sector
- Importance of imports

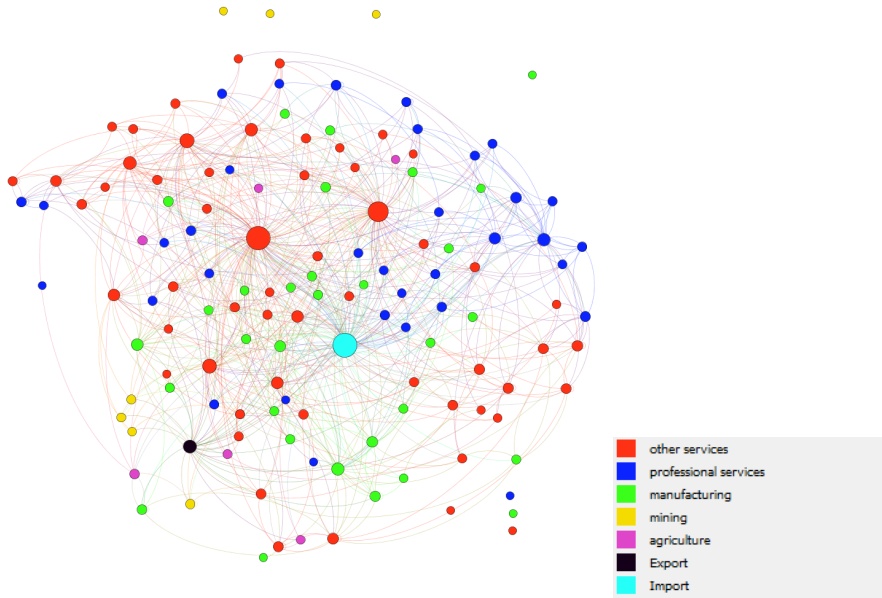


Figure: Network map industries in Rwanda. Nodes scaled by number of connected sectors.

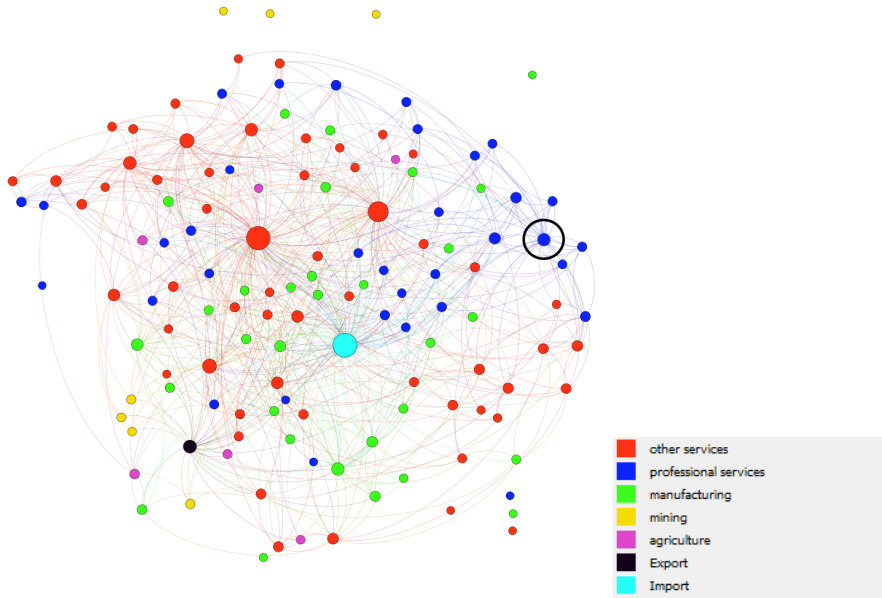


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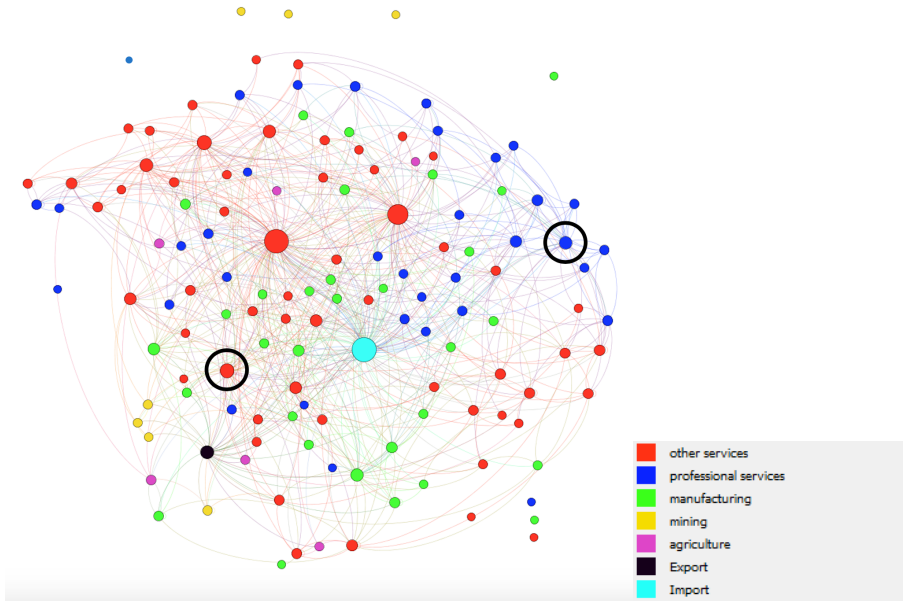


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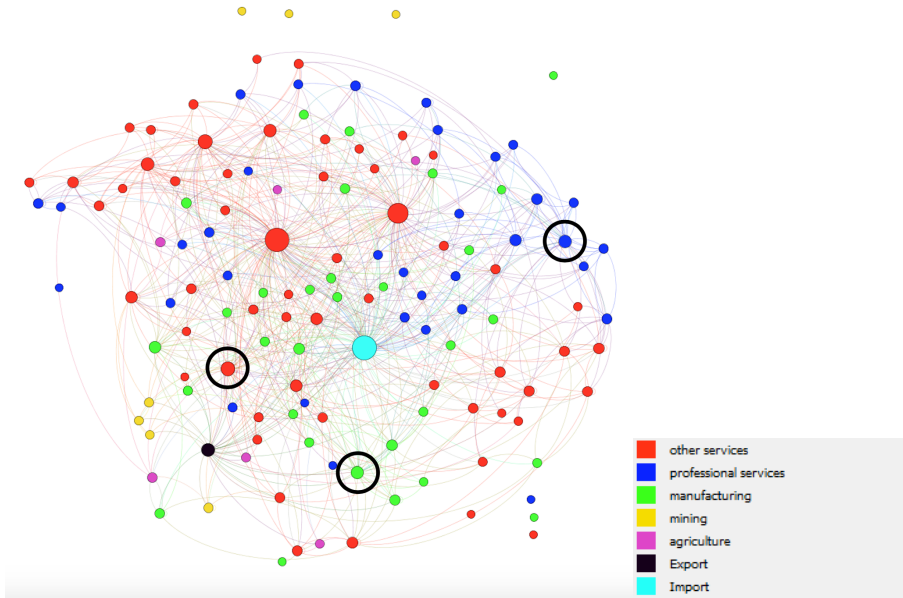


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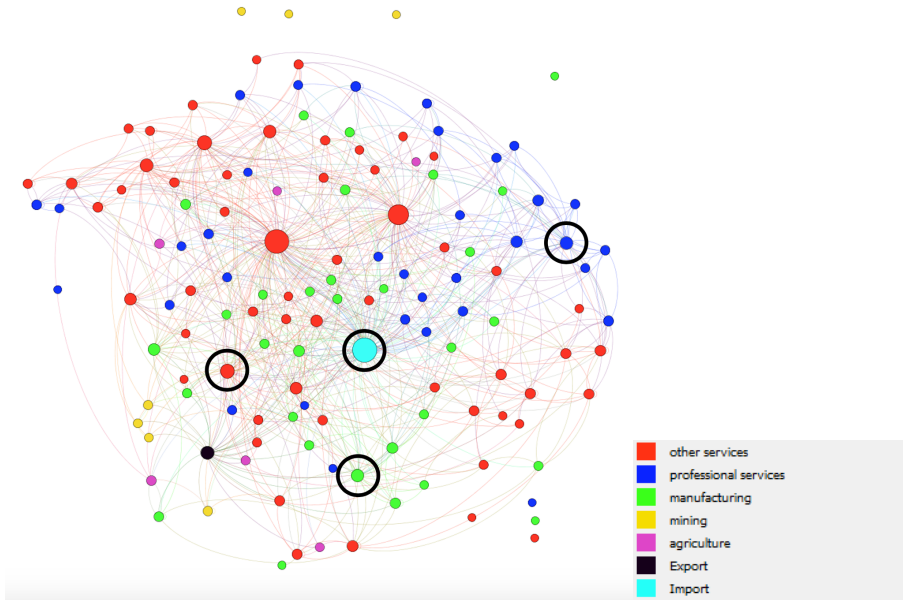


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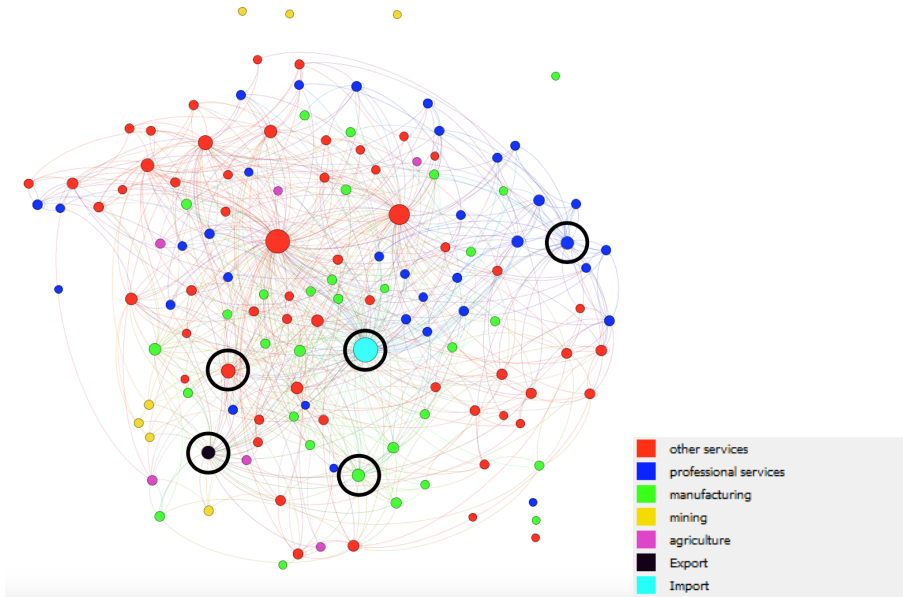


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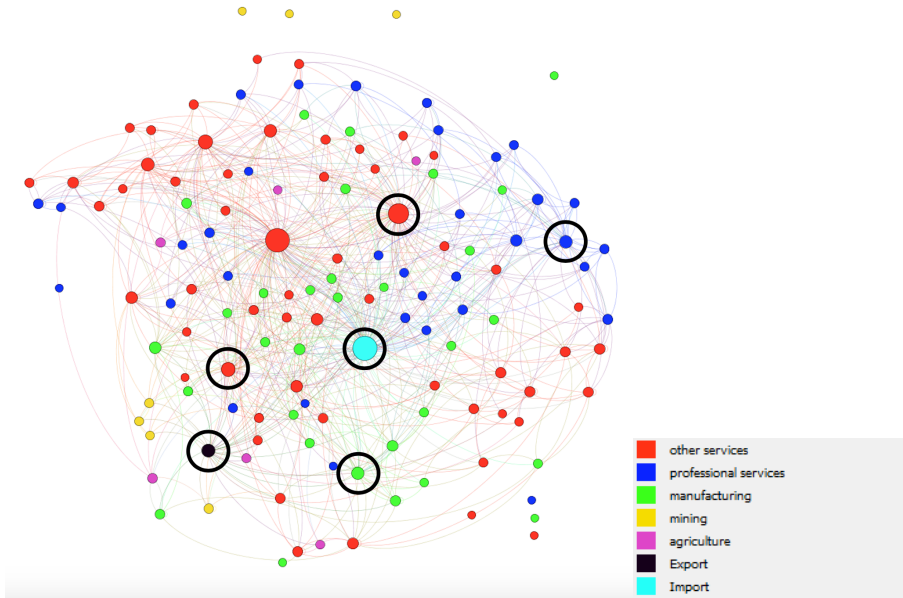


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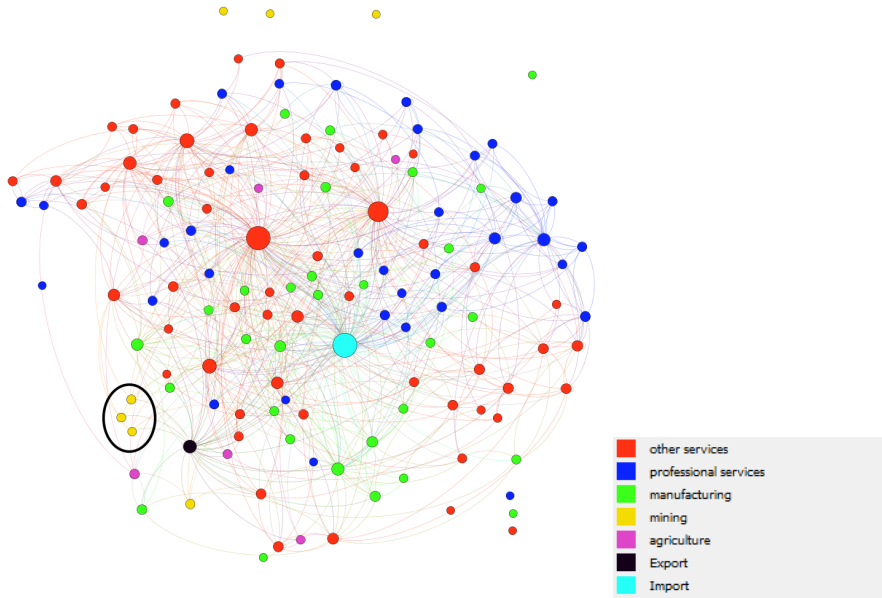


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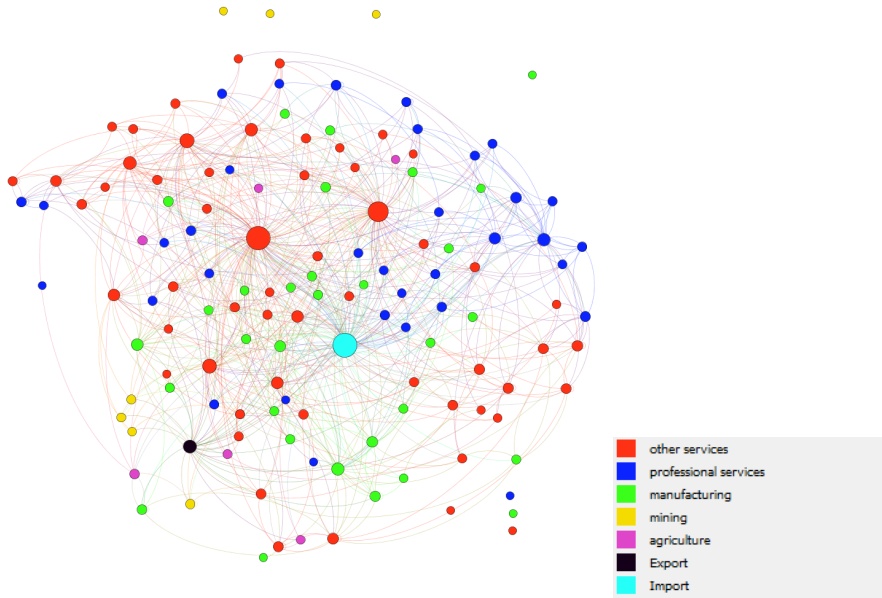


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Industries which are most interconnected in services and manufacturing

| Rank | Industry |
|------|--|
| 1 | Other service activities |
| 2 | Retail sale in non-specialized stores |
| 3 | Wholesale of food, beverages and tobacco |
| 4 | Other retail sale of new goods in specialised stores |
| 5 | Manufacture of other chemical products |
| 6 | Non-life insurance |
| 7 | Construction of buildings |
| 8 | Wholesale of construction materials, hardware, plumbing and heating equipment and supplies |
| 9 | Manufacture of beverages |
| 10 | Telecommunications |

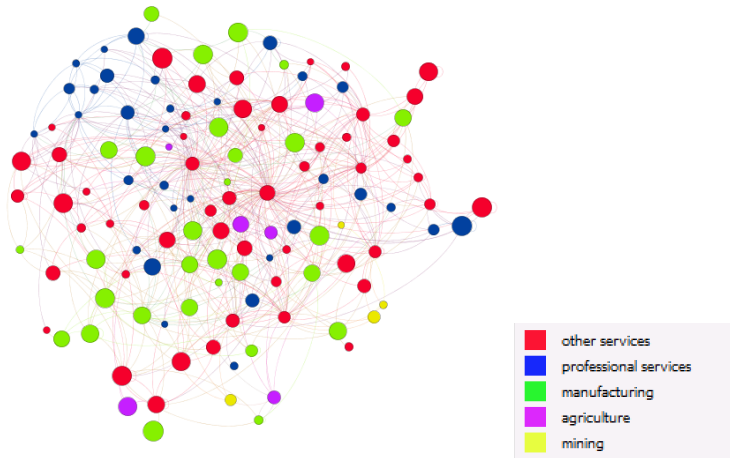


Figure: Network map industries in Rwanda. Nodes scaled by % imported inputs. Figure shows Imports most important in the manufacturing sector

Output growth in top ten most interconnected sectors drives performance in the rest of the economy

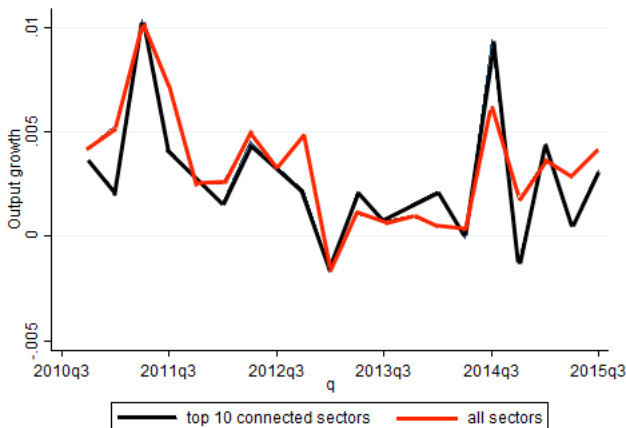


Figure: Output Growth top 10 and mid 10 most interconnected sectors and all sectors, Uganda

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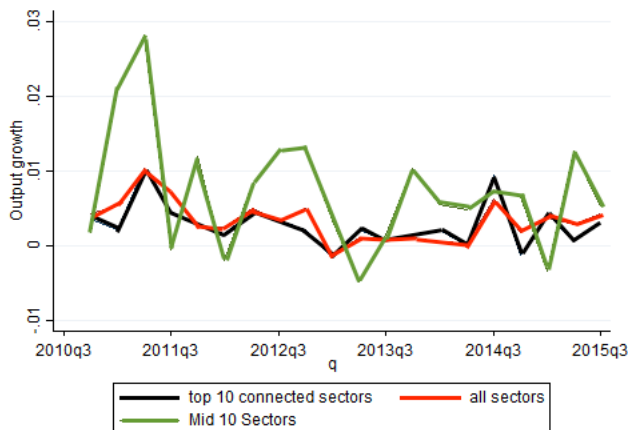


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 - Construction, telecommunication, trade and various manufacturing plants all require close attention by policy-makers
- ④ Future research?
 - Trade costs, exporting and supply chains
 - Buyer-to-Seller search and matching