THE BIG PICTURE
MANUFACTURING IN AFRICA TODAY

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PACT Light Manufacturing Chapter, Session 1
Addis Ababa, 5 June 2017
OVERVIEW OF PRESENTATION

• Presentation (based on SET and ACET work covered in background paper):
  1. Why is manufacturing important?
  2. Challenges and successes in manufacturing – richness of experiences within Africa (more details in panel)
  3. What factors are behind attracting manufacturing investment – and how do selected African countries score? (more details in parallel session 1)
  4. What industrial policy functions are crucial to making industrialisation happen – and how do selected African countries score? (more details in parallel session 2)

• Discussion:
  1. We like to hear from you on your experiences (learn from the richness of experiences in Africa)
  2. We like to hear from you what you want to know
WHY IS MANUFACTURING (STILL) IMPORTANT?

- Moving labour out of low-productivity agriculture and into higher productivity manufacturing (and services) is crucial for structural change (McMillan et al., 2017)
- Asian experiences show export-intensive manufacturing can generate significant numbers of jobs, whilst growth in many African countries in past 15 years has been of too low quality.
- Innovation and productivity growth in manufacturing is faster than in other sectors; some of it increases capital intensity but automation won’t happen everywhere overnight.
- Manufacturing is important source of convergence in labour productivity between poorer and richer countries (Rodrik, 2013)
- Stronger integration of African countries into manufacturing GVCs can foster technology absorption and skills transfer (Kappel et al., 2017)
- (Light) manufacturing can kick-start industrialisation and has many linkages with other sectors.
- Manufacturing builds resilience against external shocks by diversifying out of commodities.
- Premature deindustrialisation a threat, but rising wages in Asia, rebalancing in China, regional growth in Africa, and improving policies and institutions create a positive dynamic.
Between 2005-2014, SSA manufacturing production grew 3.5% a year in real terms, double the rate of world manufacturing, and five times the rate in the EU (manufacturing is in recession in UK),

- Growth rates above or close to 10% in Ethiopia, Rwanda and Tanzania (from a low base).

Figure 1: Africa’s share of manufacturing in GDP is falling, real production is increasing
SSA MANUFACTURING EXPORTS DOUBLING IN A DECADE AND MORE RESILIENT THAN COMMODITY EXPORTS

Source: Balchin et al. (2016), using UNCTADstat data
LACK OF STRUCTURAL CHANGE (ACROSS SECTORS) IN SSA, BUT HIGH POTENTIAL FOR PRODUCTIVITY CHANGE

Source: NCE/SET (2016)
Figure 4: Manufacturing value added in African countries

US$ million in 2015

Nigeria 40000
South Africa 20000
Kenya 10000
Cameroon 5000
Tanzania 5000
Uganda 5000
Ethiopia 5000
Equatorial Guinea 5000
Ghana 5000
Zambia 5000
Mauritius 5000
Zimbabwe 5000
Mozambique 5000
Benin 5000
Namibia 5000
Botswana 5000
Burkina Faso 5000
Malawi 5000
Niger 5000
Gabon 5000
Rwanda 5000
Guinea 5000
Chad 5000
Burundi 5000
Lesotho 5000
Togo 5000
Central African Republic 5000
Liberia 5000
Gambia, The 5000
Comoros 5000
Sao Tome and Principe 5000

Average annual growth (%) 2010-2015

Ethiopia 15
Nigeria 10
Chad 10
Niger 10
Tanzania 5
Rwanda 5
Zambia 5
Togo 5
Botswana 5
Ghana 5
Malawi 5
Uganda 5
Kenya 5
Benin 5
Cameroon 5
Mozambique 5
Gabon 5
Zimbabwe 5
Gambia, The 5
Comoros 5
Sao Tome and... 5
Burkina Faso 5
Liberia 5
South Africa 5
Mauritius 5
Guinea 5
Burundi 5
Namibia 5
Central African... 5
Equatorial Guine... 5
Lesotho 5

Notes: Data to be treated with caution due to (re)classification issues, see set.odfi.org
Source: World Development Indicators
EMPLOYMENT IN FORMAL MANUFACTURING IN ETHIOPIA, 1995–2014

Source: Abebe et al. (2016), presented in Ansu et al. (2016a).
PROMISING SECTORS INCLUDE:

GARMENTS/FOOTWEAR, HORTICULTURE, AGRO-PROCESSING, AUTOMOBILES, CONSUMER GOODS

Figure 6: East African garment exports to world, 2009–2015

Source: Own elaboration using UNCTADStat data.
Note: The figures for all countries except Ethiopia are UNCTAD estimates.
MANUFACTURING FDI Potential Index is a tool to identify countries with the greatest potential for attracting manufacturing investment.

Compared selected African countries’ performance on specific factors fundamental to manufacturing success:

- labour productivity in manufacturing
- recent performance in manufacturing exports
- domestic value added in manufacturing
- manufacturing value added per capita
- past manufacturing FDI stock as a percentage of GDP
- economic complexity
- population (proxy for market size)
- quality of the business climate and infrastructure
- education
- cost and reliability of electricity
STRONG RECENT GROWTH IN MANUFACTURING EXPORTS, ESPECIALLY FROM RWANDA, NIGERIA AND TANZANIA

Ave. annual growth in manufacturing exports to the world, 2005-2014

- Rwanda
- Nigeria**
- Tanzania
- Ethiopia
- Mozambique
- Uganda
- Zambia
- Ghana*
- Kenya*

Source: Balchin et al. (2016), authors' calculations using UN Comtrade data
MANUFACTURING LABOUR PRODUCTIVITY IS COMPARATIVELY HIGH IN MOZAMBIQUE (AN OUTLIER), KENYA AND NIGERIA, AND VERY LOW IN ETHIOPIA

Labour productivity in manufacturing, 2013

BUT ETHIOPIA LEADS ON RECENT GROWTH IN MANUFACTURING LABOUR PRODUCTIVITY OFF A LOW BASE (AND THIS IS COMPLEMENTED BY LOW WAGES)

MANUFACTURING VALUE ADDED PER CAPITA IN NIGERIA IS NEARLY TWICE THAT IN ZAMBIA AND KENYA, AND MORE THAN 14 TIMES THAT IN ETHIOPIA

Source: Balchin et al. (2016), authors’ own calculations based on World Development Indicators data
LARGE DOMESTIC MARKETS FOR MANUFACTURES IN NIGERIA AND ETHIOPIA

Estimated population size, 2015

- Rwanda
- Zambia
- Ghana
- Mozambique
- Uganda
- Kenya
- Tanzania
- Ethiopia
- Nigeria

Source: UNCTADStat estimates
RWANDA HAS A COMPARATIVELY GOOD BUSINESS ENVIRONMENT AND QUALITY INFRASTRUCTURE TO ATTRACT MANUFACTURING INVESTMENT


ZAMBIA AND GHANA LEAD ON SECONDARY EDUCATION ENROLMENT, GHANA IS ALSO A FRONTRUNNER AT TERTIARY LEVEL

ETHIOPIA AND ZAMBIA HAVE THE CHEAPEST ELECTRICITY, BUT SUPPLY IS MORE RELIABLE IN MOZAMBIQUE AND RWANDA

**Price of electricity (US cents per kWh), 2016**

- Ghana
- Nigeria
- Kenya
- Uganda
- Rwanda
- Tanzania
- Mozambique
- Zambia
- Ethiopia

**Electricity outages in a typical month, 2013**

- Nigeria
- Tanzania
- Ghana
- Uganda
- Kenya
- Ethiopia
- Zambia
- Rwanda
- Mozambique


*Source: World Bank Enterprise Surveys*
ZAMBIA AND KENYA HAVE THE MOST COMPLEX AND DIVERSE PRODUCTION STRUCTURES

<table>
<thead>
<tr>
<th>Country</th>
<th>ECI Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Zambia</td>
<td>-2.5</td>
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<tr>
<td>Kenya</td>
<td>-2</td>
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<tr>
<td>Uganda</td>
<td>-1.5</td>
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<tr>
<td>Tanzania</td>
<td>-1</td>
</tr>
<tr>
<td>Mozambique</td>
<td>-0.5</td>
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<tr>
<td>Ethiopia</td>
<td>0</td>
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<tr>
<td>Ghana</td>
<td>-1</td>
</tr>
<tr>
<td>Nigeria</td>
<td>-2.5</td>
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</tbody>
</table>

Source: Atlas of Economic Complexity
Note: Rwanda not measured on the ECI
SUMMARY – PROSPECTS FOR ATTRACTING MANUFACTURING INVESTMENT

• Some countries perform well on certain measures and less favourably on others
• Kenya doing relatively well on the quality of infrastructure and product complexity, but scores relatively poorly on education, electricity provision and recent manufacturing performance
• Ethiopia boasts a large domestic market (as does Nigeria), comparatively low manufacturing wages and low electricity costs, but labour productivity is low
• Tanzania has comparatively low unit labour costs, but manufacturers face a challenging business environment; whereas the business climate in Rwanda is good and there is relatively high-quality infrastructure
• Overall analysis suggests Ethiopia, Kenya, Mozambique, Nigeria and Zambia are best placed to attract FDI into export-based manufacturing
• But all countries need to improve education and skills development and the quality of the business climate, infrastructure and trade logistics to attract higher levels of investment into export-based manufacturing sectors
<table>
<thead>
<tr>
<th>Country</th>
<th>Zam</th>
<th>Nga</th>
<th>Ken</th>
<th>Eth</th>
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<th>Rw</th>
<th>Ghn</th>
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<tbody>
<tr>
<td>Overall ranking</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
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<td>7</td>
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<td>71</td>
<td>73</td>
<td>75</td>
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<td>78</td>
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<tr>
<td>Ave. annual growth in manufacturing exports to the world (2005–2014)</td>
<td>7</td>
<td>2</td>
<td>9</td>
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<tr>
<td>Labour productivity in manufacturing (constant value added per person employed) (2013)</td>
<td>4</td>
<td>2</td>
<td>3</td>
<td>9</td>
<td>1</td>
<td>8</td>
<td>6</td>
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<tr>
<td>Domestic value added content of gross exports as a share of total exported value added (%) (2011)</td>
<td>4</td>
<td>3</td>
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<td>Average annualised growth in labour productivity in manufacturing (%) (2010–2013)</td>
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<td>8</td>
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<tr>
<td>Estimated population size (2015)</td>
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<td>9</td>
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<td>Ease of doing business rank (2016)</td>
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<td>8</td>
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<td>4</td>
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<td>Quality of overall infrastructure rank (2015–2016)</td>
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<td>2</td>
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<td>1</td>
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<td>Secondary education enrolment rate (%)</td>
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<td>Tertiary education enrolment rate (%)</td>
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<td>Price of electricity (US cents per kWh) (2016)</td>
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<td>Number of electricity outages in a typical month (2013)</td>
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<td>9</td>
<td>5</td>
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<td>7</td>
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<td>Manufacturing value added per capita (2013)</td>
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<td>3</td>
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<td>7</td>
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<td>Country ranking on Economic Complexity Index (2014)</td>
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<td>8</td>
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<td>9</td>
<td>7</td>
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<tr>
<td>Manufacturing share of FDI stock (% of GDP) (most recent year available)</td>
<td>4</td>
<td>5</td>
<td>8</td>
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<td>9</td>
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<td>7</td>
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1. **Quality of the industrial policy process** – e.g. Mauritius on consensus seeking

2. **Conduciveness of trade rules and trade facilitation (including corridors) and resisting ill-thought-out protectionism** – e.g. Chirundu, Busia or other OSBPs

3. **Provision and regulation of special economic zones (SEZs), industrial clusters or hubs** – e.g. Ethiopia/Rwanda co-ordinated push

4. **Effective investment facilitation including aftercare** – FDI, skills and automobile sector in South Africa

5. **Local capability-building** (for local content or acquisition of key capabilities by national firms or public agencies) – Mauritius and productivity upgrading

6. **Supportive infrastructure planning** – Kenya’s performance contracts

7. **Learning with the private sector to address initial and emerging constraints** – state-business relations and JEC Mauritius

8. **Selective, conditional support to building firm capabilities** – experimentation
<table>
<thead>
<tr>
<th>Functional area</th>
<th>Performance expectations</th>
<th>Expert score of conduct and performance</th>
<th>Kenya</th>
<th>Rwanda</th>
<th>Tanzania</th>
<th>Uganda</th>
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<tr>
<td>Quality industrial policy process</td>
<td>Effective lead agency</td>
<td>①=weak, ⑤=strong</td>
<td>2</td>
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<td>Robust, inclusive process of formulating and implementing industrial strategies</td>
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<td>Monitoring of implementation</td>
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<td>Conducive trade rules and trade facilitation</td>
<td>Sound tariff regime</td>
<td>②</td>
<td>3</td>
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<td></td>
<td>Active support for exporters</td>
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<td></td>
<td>Developing trade standards</td>
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<td>Efficient port procedures</td>
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<td>Provision and regulation of Special Economic Zones, industrial or clusters.</td>
<td>Efficient legislation</td>
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<td>①=weak, ⑤=strong</td>
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<td>Coordinated and speedy action around zones</td>
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<td>Effective investment facilitation, including aftercare</td>
<td>Clarity on roles, responsibilities and mandates of EPZAs, government ministries and IPAs</td>
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<td>①=weak, ⑤=strong</td>
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<td></td>
<td>Identification of suitable investors</td>
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<td>Active engagement with firms</td>
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<td>Supporting firms in-country</td>
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<td>Local capability building (for local content or national capability acquisition)</td>
<td>Capacity building programmes (skills and technology development in tandem with private sector)</td>
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<td>①=weak, ⑤=strong</td>
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<td>Local content unit with clear negotiation strategies</td>
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<td>Supportive infrastructure planning</td>
<td>Prioritisation of infrastructure needs of manufacturers</td>
<td>①=weak, ⑤=strong</td>
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<td>Efficient port/airport handling</td>
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<td>Learning with the private sector to address initial and emerging constraints</td>
<td>Trust-based relationships, feedback mechanisms</td>
<td>①=weak, ⑤=strong</td>
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<td></td>
<td>Mechanisms that hold government to commitment</td>
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<td>Selective, conditional support to building firm capabilities (including finance)</td>
<td>Banking system that supports industrial priorities</td>
<td>①=weak, ⑤=strong</td>
<td>2</td>
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<td></td>
<td>Mechanisms that hold firms to commitment</td>
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</table>
Some strengths:

- Rwanda – effective lead agency, provision of a fully serviced SEZ
- Kenya – performance contracts for infrastructure

But also challenges:

- Tanzania / Uganda – working with private sector, building firm capabilities and investment facilitation
CONCLUSIONS: POINTS FOR DISCUSSION

• **Do we have the big picture right on African manufacturing?** What successful cases are missing? What nuances are important? We like to hear from you on your country experiences (learn from the richness of experiences in Africa). Together we can learn, experiment and adjust.

• **What do you think this group should seek to understand on African manufacturing** – are we asking the right questions around
  – what is happening?
  – what needs to be done?
  – how to make it happen?
The Supporting Economic Transformation (SET) is an ODI programme funded by UK DFID to support countries in their quest for economic transformation through data and policy analysis and convening. The views expressed are those of the researchers and do not necessarily represent the views of ODI or DFID.

For further information: Sonia Hoque, SET programme manager
<table>
<thead>
<tr>
<th>Functions</th>
<th>Performance expectations</th>
<th>Examples of success</th>
</tr>
</thead>
</table>
| Quality industrial policy process              | - Robust, inclusive process for formulating and implementing strategies  
- Effective lead agency  
- Monitoring of implementation | Leadership and nation building around industrialisation, building consensus, effective government support in Mauritius |
| Conducive trade rules and trade facilitation   | - Sound tariff regime  
- Avoid ill-thought-out protectionism  
- Active support for exporters  
- Developing trade standards  
- Efficient port procedures | Reductions in trade costs/transit times through trade facilitation (e.g. OSBPs, national/regional single windows, improved customs processes) in East and Southern Africa |
| Provision and regulation of SEZs and industrial clusters/hubs | - Efficient legislation  
- Coordinated and speedy action around zones | SEZs driving growth in Ethiopia and Kenya; creating significant employment in Ghana, Kenya, Lesotho, Madagascar, Mauritius |
<table>
<thead>
<tr>
<th>Functions</th>
<th>Performance expectations</th>
<th>Examples of success</th>
</tr>
</thead>
</table>
| **Effective investment facilitation, including aftercare** | - Clarity on roles, responsibilities and mandates for investment promotion  
  - Identify suitable investors  
  - Active engagement with firms  
  - Support firms in-country | Role of foreign automobile companies in transforming the auto sector in **South Africa**, including by interacting with education systems |
| **Local capability building where it makes sense**   | - Capacity building programmes (skills, technology)  
  - Local content unit with clear negotiation strategies | Institutional support (training, investment in technology) to upgrade and increase productivity in the garment sector in **Mauritius** |
| **Supportive infrastructure planning**              | - Prioritisation of infrastructure needs for manufacturers  
  - Efficient port/airport handling | Use of performance contracts for effective infrastructure development in **Kenya** |
<table>
<thead>
<tr>
<th>Functions</th>
<th>Performance expectations</th>
<th>Examples of success</th>
</tr>
</thead>
</table>
| *Learning with the private sector to address initial and emerging constraints* | - Trust-based relationships, feedback mechanisms  
- Mechanisms that hold government to commitments | Joint Economic Council to build effective state-business relations in *Mauritius* and facilitate collaboration between public and private sectors |
| *Selective, conditional support to build firm capabilities*     | - Banking systems that support industrial priorities  
- Mechanisms that hold firms to commitments | Experimentation and adaptability in industrial policy processes, discover approaches that work |
GRADUAL TECHNOLOGICAL DEEPENING IN AFRICAN MANUFACTURING EXPORTS

Note: Manufactures includes SITC 5-8 (less 667 and 68)
Source: Balchin et al. (2016), based on UNCTADstat data
A WINDOW OF OPPORTUNITY FOR AFRICAN COUNTRIES?

- Positive underlying factors: rising wages in Asia, rebalancing in China, regional growth in Africa, improving policies and institutions
- Promising sectors for light manufacturing in Africa: garments and textiles (already strong growth in East African garment exports since 2009), agro-processing, automobiles, consumer goods
- Based on a Manufacturing FDI Potential Index some African countries have good underlying potential to attract manufacturing FDI – e.g. Ethiopia, Kenya, Mozambique, Nigeria and Zambia (Balchin et al., 2016)
- And attractive conditions for light manufacturing – e.g. low wages in Ethiopia and Tanzania, good investment climate in Rwanda, opportunities for entrepôt/regional trade in Tanzania, market size in Nigeria
- SSA is far away from Rodrik’s manufacturing peak (see X in the figure)
Share of manufacturing in GDP (%)
DVA IN MANUFACTURING EXPORTS IS HIGH IN MOZAMBIQUE, GHANA, NIGERIA AND ZAMBIA, BUT MUCH LOWER IN ETHIOPIA (ALTHOUGH ETHIOPIA’S IMPORT DEPENDENCE IS DECREASING)

HIGHEST SHARES OF MANUFACTURING IN FDI STOCK IN TANZANIA AND ETHIOPIA

Source: Balchin et al. (2016)
Note: Data is the most recently available for each country. No data available for Mozambique.
References:


