Constraints to developing a competitive machinery and equipment industry

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Introduction and rationale

• Metals, machinery and equipment at heart of SA’s industrial base
• Strong linkages between metals and machinery and equipment.
• Machinery & fabricated metal products played major role in industrialisation of other countries

Structural transformation:
• sectoral transitioning - changing the sectoral composition of the economy/value chain by increasing the proportion of higher productivity activities and high value adding services.
• sectoral deepening
• By upgrading & adopting advancing processes, products and functions
• Requires a comprehensive set of productive capabilities: technology, infrastructure, skills, capital & policies.

Research questions:
1. What is the status of structural transformation in the machinery and equipment industry
2. What are the main challenges hampering diversification & sophistication
Metals, machinery and equipment value chain

Stage 1: Extraction of minerals such as iron ore, manganese and aluminium
Stage 2: Basic iron & steel from steel mills e.g AMSA
           Non-ferrous products from smelters and extruders
Stage 3: Manufacture of systems (mineral processing, trucks, pumps) and sub-systems (engines, gears)
Stage 4: Fabricated metal products from machine shops and metal fabricators (foundries)
Stage 5: End-users e.g. Transnet, PRASA, Eskom, municipalities, mining houses,

- Most value, or scope for manufacture of high value added products at Stage 4
- Strong forward linkages to SOCs, municipalities & mining as customers
- Value chain susceptible to import penetration (both cast & machinery and equipment)
Trade balance of the metals, machinery and equipment VC, nominal USD billions

- Upstream industry continues to dominate, reinforced by policies (inc. subsidised energy)
- M&E highly traded (import penetration ratio of 95% versus 20%)
- M&E improved competitiveness from 1994 to 2002, but substantial import penetration thereafter
  - Worsening trade deficit of ~US$8bn is more than total output in that year
### Analysis of structural transformation

#### Table: Total employment, Value added, Average real wage/employee, Labour productivity index, 2016 (1994=100)

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<tbody>
<tr>
<td>Basic iron and steel</td>
<td>19%</td>
<td>12%</td>
<td>-2.7%</td>
<td>20%</td>
<td>30%</td>
<td>5%</td>
<td>242 272</td>
<td>489.3</td>
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<tr>
<td>Basic non-ferrous metals</td>
<td>10%</td>
<td>6%</td>
<td>-2.3%</td>
<td>17%</td>
<td>15%</td>
<td>2%</td>
<td>144 890</td>
<td>266.6</td>
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<td>Fabricated metal products</td>
<td>43%</td>
<td>43%</td>
<td>-0.5%</td>
<td>36%</td>
<td>29%</td>
<td>2%</td>
<td>110 823</td>
<td>167.2</td>
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<tr>
<td>Machinery &amp; equipment</td>
<td>28%</td>
<td>38%</td>
<td>0.1%</td>
<td>27%</td>
<td>27%</td>
<td>3%</td>
<td>126 259</td>
<td>151.1</td>
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- M&E value add remains the same, but employment has increased
  - Low levels of structural transformation, but islands of capabilities exist
  - Labour absorbing industry that requires attention
- Investment figures also show that upstream industries invested heavily in the 1990s, on the back of favourable electricity tariffs.
Structural transformation: Machinery and equipment

1990s
- Poor performance
- High import penetration
- High input costs
- High interest rates & low govt expenditure

2000
- Increased demand: commodity boom & infrastructure spend
- Increased global OEMs
- High import penetration
- High input costs

2008
- Increased value addition & output
- High import penetration
- High input costs
- Erosion of capabilities
- Consolidation

2013
- Deterioration of capabilities
- Increased import penetration
- Knock-on effect from foundries
- High input costs
- **Yet**, Currency depreciation
- Islands of capabilities
- Growth in regional trade

1. Increased competition in the region from other countries e.g. India & China
2. Deterioration of local capabilities
3. Rationalisation of the machinery and equipment, yet islands of capabilities exist
Top constraints undermining structural transformation

**Knock-on value chain effect**

- Upstream industry:
  - Relative power of upstream over downstream (import parity pricing) & trade protection
  - Anti-competitive conduct – AMSA settling for R1.5 billion penalty & five year agreement
- Foundries losing capabilities
  - Over 100 foundries have close since 2006
  - Reduction in the type of foundries, and quality of cast products generally deteriorating

**Electricity supply & pricing**

- Excessive electricity pricing reduces the competitiveness of metal cast products – SA (16%), Brazil (11%) & China (8.5%)
- Local govt financing dependent on electricity distribution industry rents
  - Eskom & municipalities price differential of 30% for med-sized foundries
- Underinvestment in distribution infrastructure
Top constraints undermining structural transformation

**Public procurement**
- Despite national policy commitment and programs, lack of support from SOCs and OEMs, impact seen in pumps and valves
- Poor monitoring and implementation
- Black empowerment vs local content (trading interests vs productive capital)
  - Mineral resource policy captured by trading class – MPRDA beneficiation clauses never invoked

**Productive capabilities**
- Weak skills base
  - TVET and FET colleges not meeting skills constraint
  - Main
- Deteriorating R&D
## Proposed recommendations

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<td>1</td>
<td>Address quality issues around technical and artisanal skills</td>
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<td>2</td>
<td>Offering energy-intensive industries electricity prices at equivalent to Eskom-tariff for heavy industry</td>
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<td>3</td>
<td>Accessing development finance for expansion and upgrading through a grant/rebate system</td>
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<td>4</td>
<td>Optimising local procurement through effective monitoring and evaluation at a company level that prioritises value addition</td>
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Thank you

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