

THE EVOLUTION OF MANUFACTURING IN THE GAUTENG CITY REGION

SAM ASHMAN, UNIVERSITY OF JOHANNESBURG

SUSAN NEWMAN, UNIVERSITY OF THE WEST OF ENGLAND

TIPS ANNUAL FORUM, UNIVERSITY OF WITWATERSRAND, 14 – 15 JULY 2015

OVERVIEW

Why manufacturing matters

Manufacturing and the MEC

- Severe implications for employment: narrow group of capital intensive sectors dominate

Why Gauteng City Region

Preliminary empirical findings

- How have these sectors evolved especially re employment

Conclusions re. linkages and employment

WORK IN PROGRESS...

WHY MANUFACTURING MATTERS 1

Is growth **sector neutral** (the mainstream) or **sector specific** (classical/structuralist approaches)?

i.e. the effects of a unit of value added on growth do not depend on the sector in which that unit of value is added

If growth is sector-specific, a change in sectoral structure affects economic growth

Classical development economics, especially structuralist approaches, regard the manufacturing sector as having special properties as an engine of economic growth

This was reflected in developing countries' drives to modernise and 'catch up' through industrialization, especially during the 1950s – 1970s

WHY MANUFACTURING MATTERS 2

Manufacturing has greater scope for: learning-by-doing, increasing returns to scale, cumulative productivity increases; strong growth-pulling linkages with the rest of a domestic economy; tendencies to technological progress (Kaldor 1978; Hirschman 1969)

Manufacturing may act as an engine of growth through **output** and **employment** channels (Tregenna 2015)

The growth-pulling effects of manufacturing through backward and forward **linkages** with the rest of the domestic economy relate more to the share of manufacturing in GDP and the growth of manufacturing output

Demand multiplier effects, through **wages** paid, relate to the share of manufacturing in total employment, but this is only a special property of manufacturing if manufacturing wages are higher than those in other sectors

DEINDUSTRIALIZATION

Defined as a fall in the share of manufacturing in total employment, or in GDP, or both

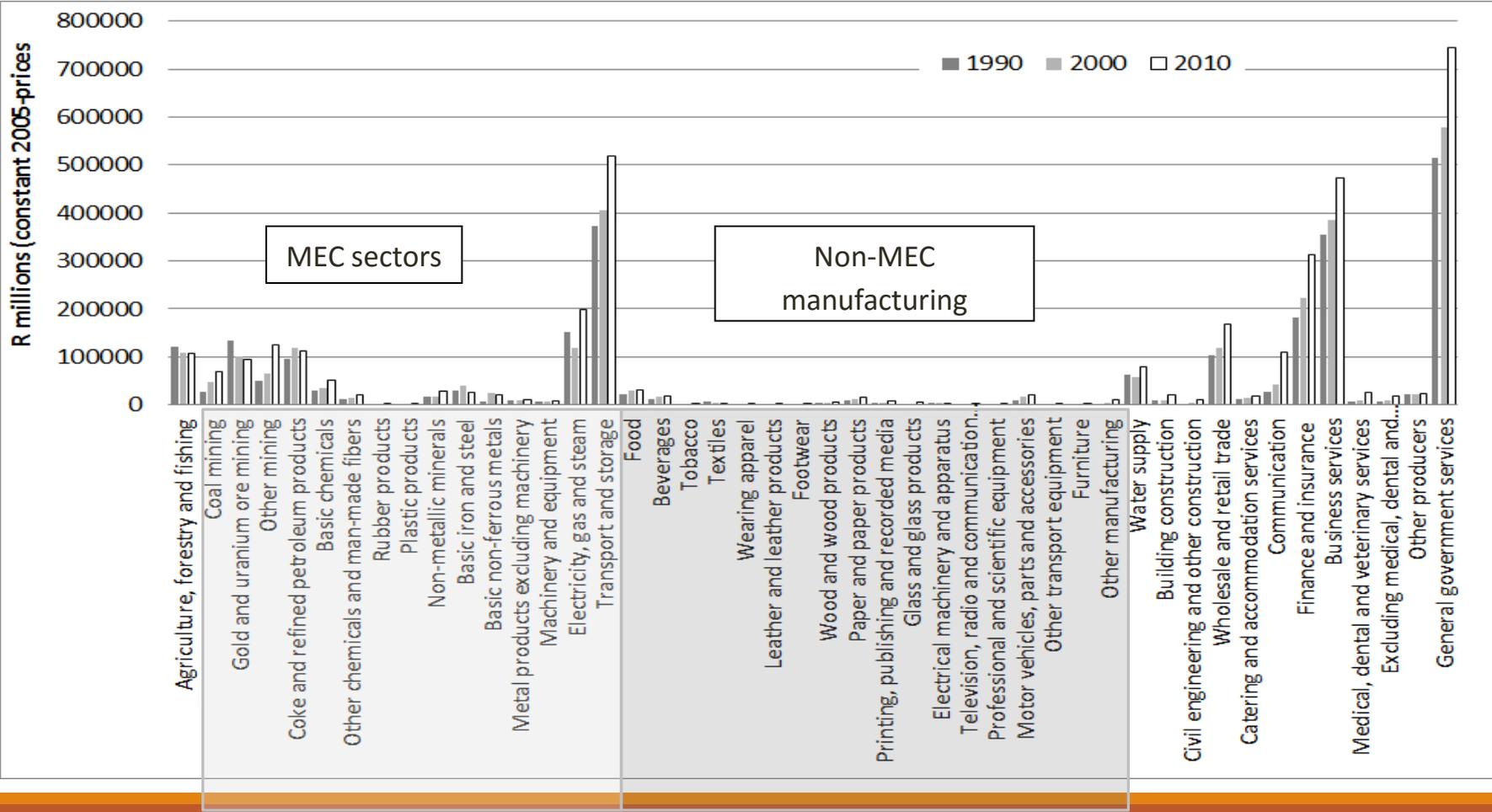
Deindustrialization most commonly defined as a fall in the share of manufacturing in total employment. Tregenna (2009, 2013) argues deindustrialization should be defined in terms of a sustained decline in *both* the share of manufacturing in total employment and the share of manufacturing in GDP

Advanced economies undergoing deindustrialization since the 1970s (Palma 2005; Rowthorn and Ramaswamy 1997)

Many developing countries (with exception of East Asia) have begun to deindustrialize **at relatively low levels of industrial development**

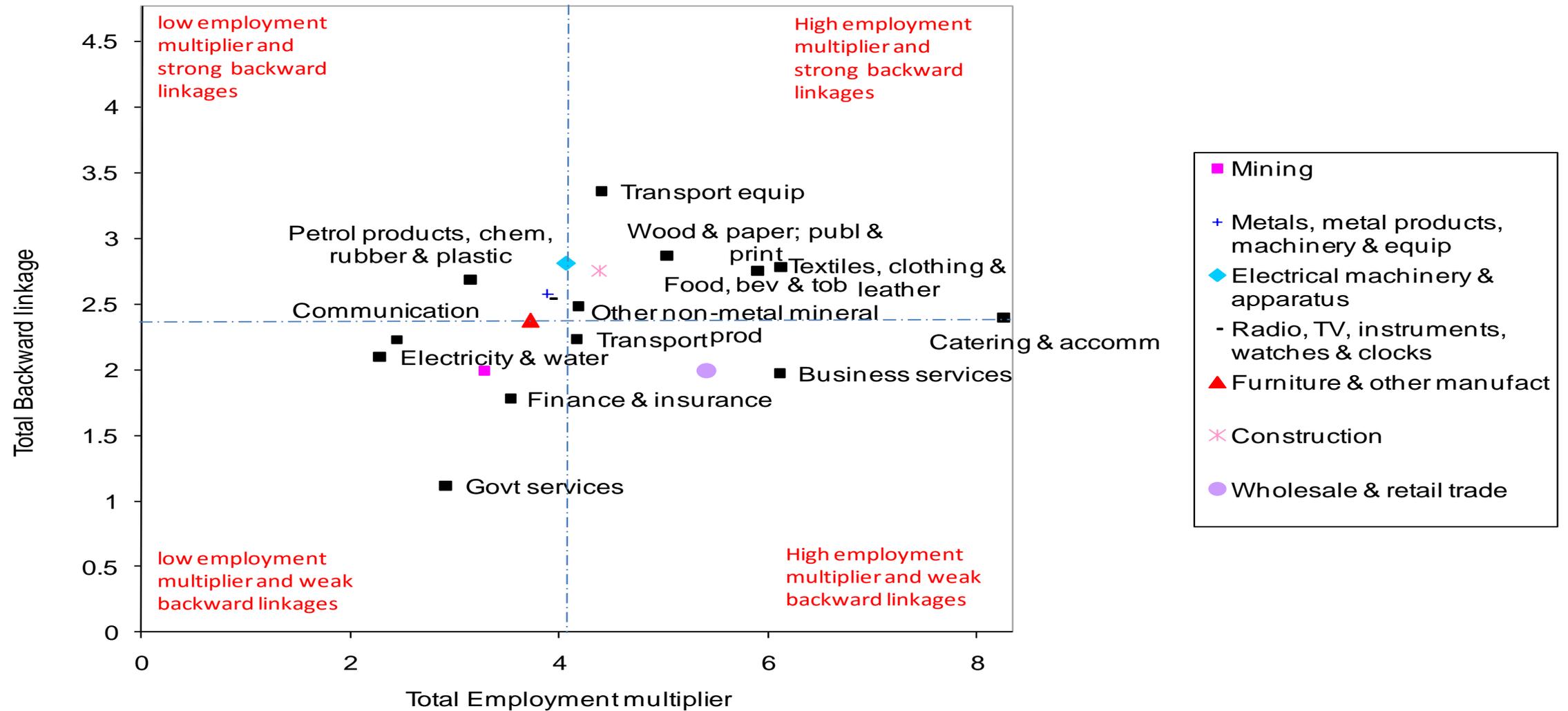
In conditions of 'premature' deindustrialization, can services act as dynamic replacement as an engine of growth? Likely to be relatively low-skilled, low-productivity, non-tradable activities in **retail** or **personal services** - do not have strong properties of increasing returns or the potential for cumulative productivity increases.

MANUFACTURING AND THE MEC: DISTRIBUTION OF CAPITAL STOCK ACROSS SECTORS



Source: Quantec (RSA Standardised Industry) 2011

BACKWARD LINKAGES AND EMPLOYMENT MULTIPLIERS IN GAUTENG, 2007

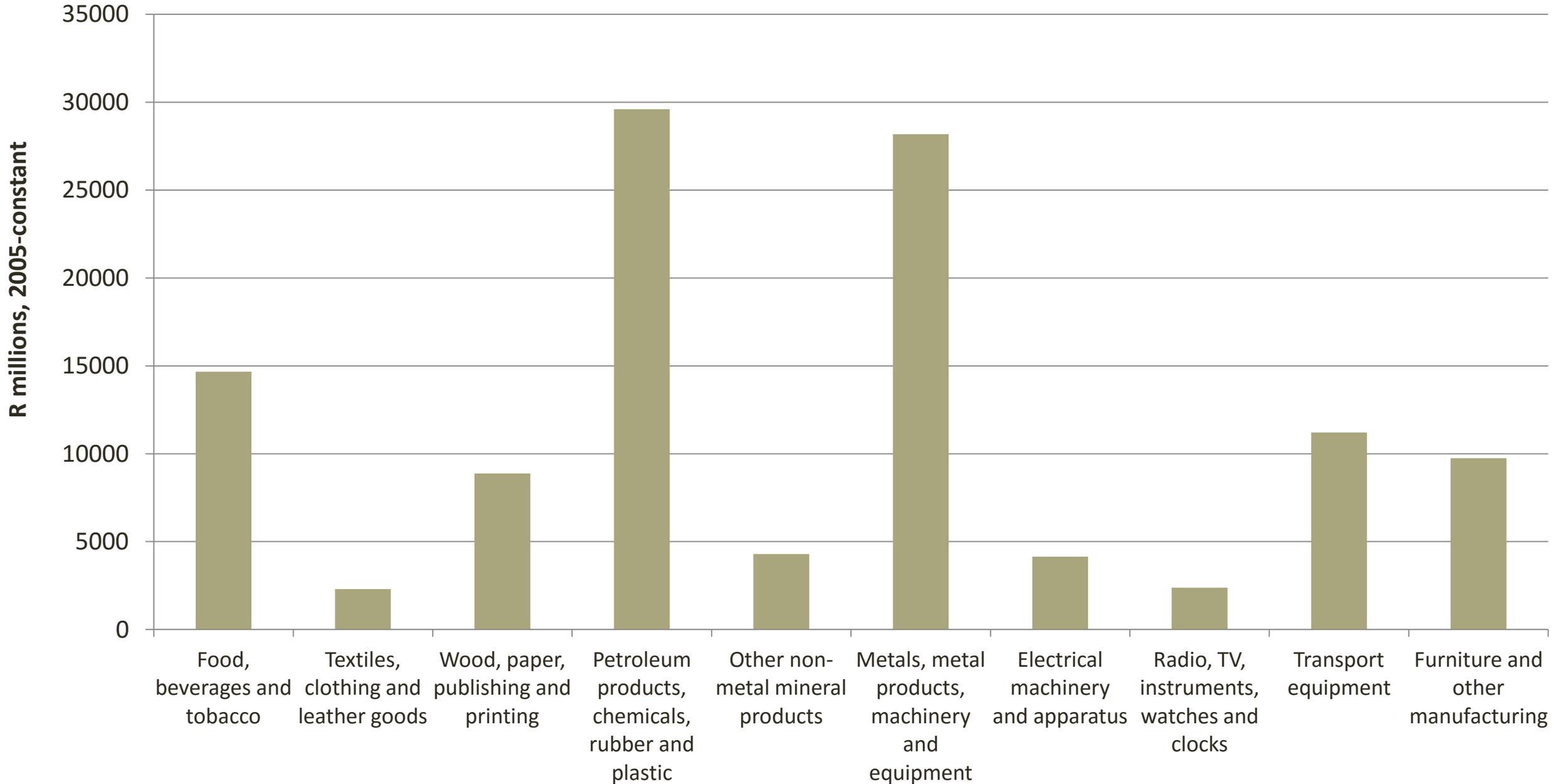


LINKAGES AND THE MEC CORE

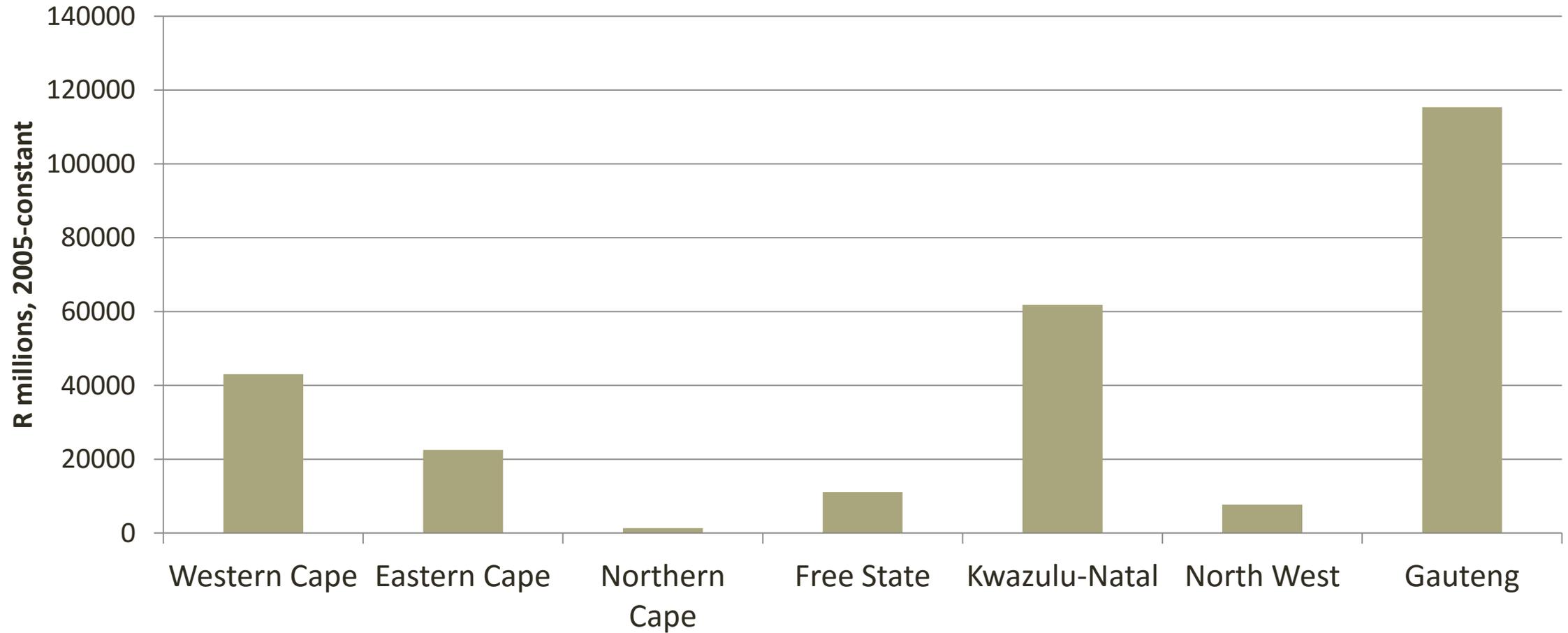
MEC subsector	Share of inputs from MEC sectors (% of total)	Share of output to MEC sectors (% of total)
Coal mining	26	90
Gold and uranium ore mining	55	5
Other mining*	23	77
Coke and refined petroleum products	88	18
Basic chemicals	77	60
Other chemicals and man-made fibres	67	37
Plastic products	68	30
Non-metallic minerals	73	8
Basic iron and steel	82	59
Basic non-ferrous metals	91	59
Metal products excluding machinery	70	41
Machinery and equipment	63	53
Electricity gas and steam	53	47
Non-MEC manufacturing	23	6

Data source: Quantec Input-Output tables 2011

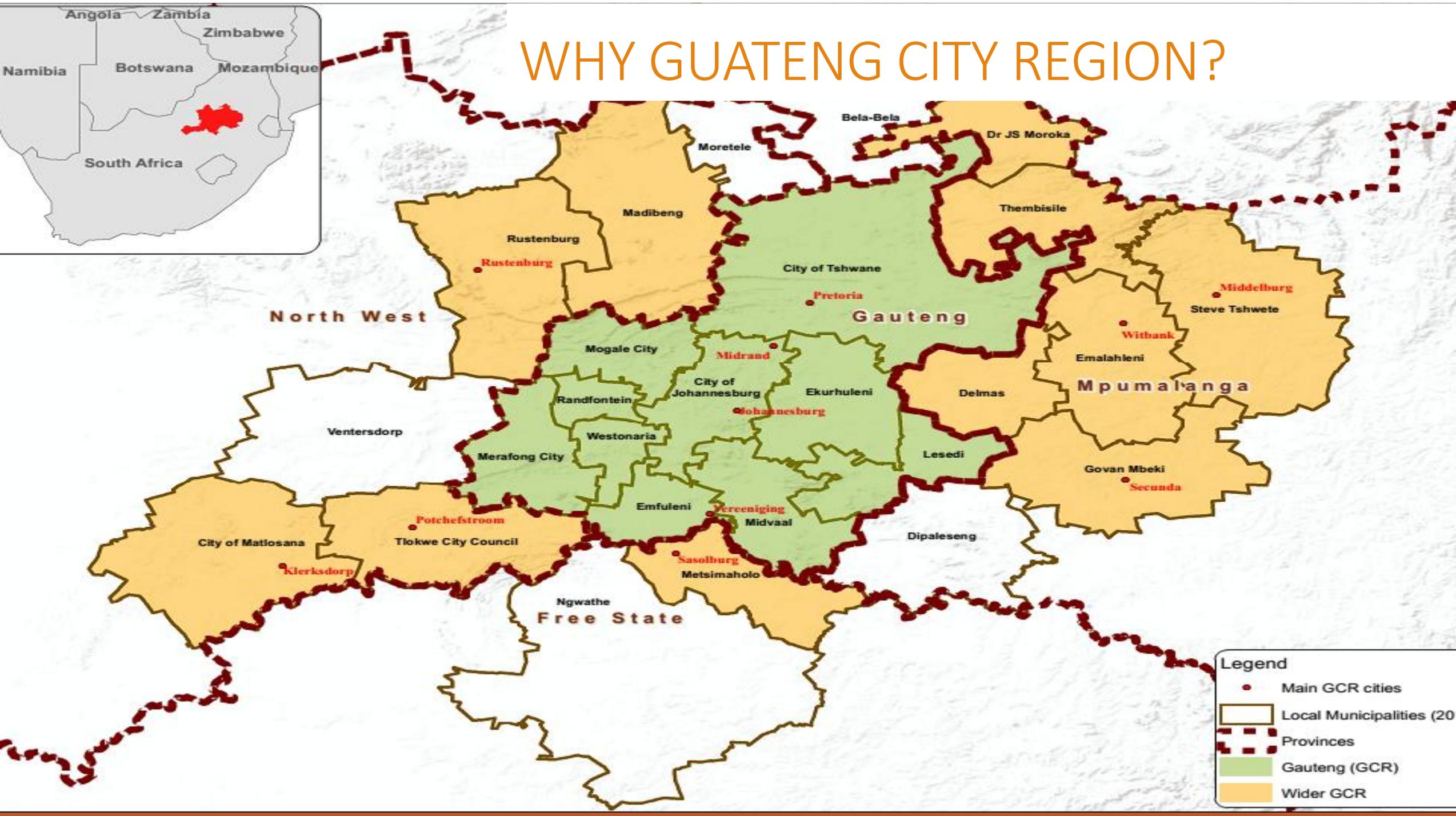
GVA ACROSS MANUFACTURING SUB-SECTORS, SA 2011



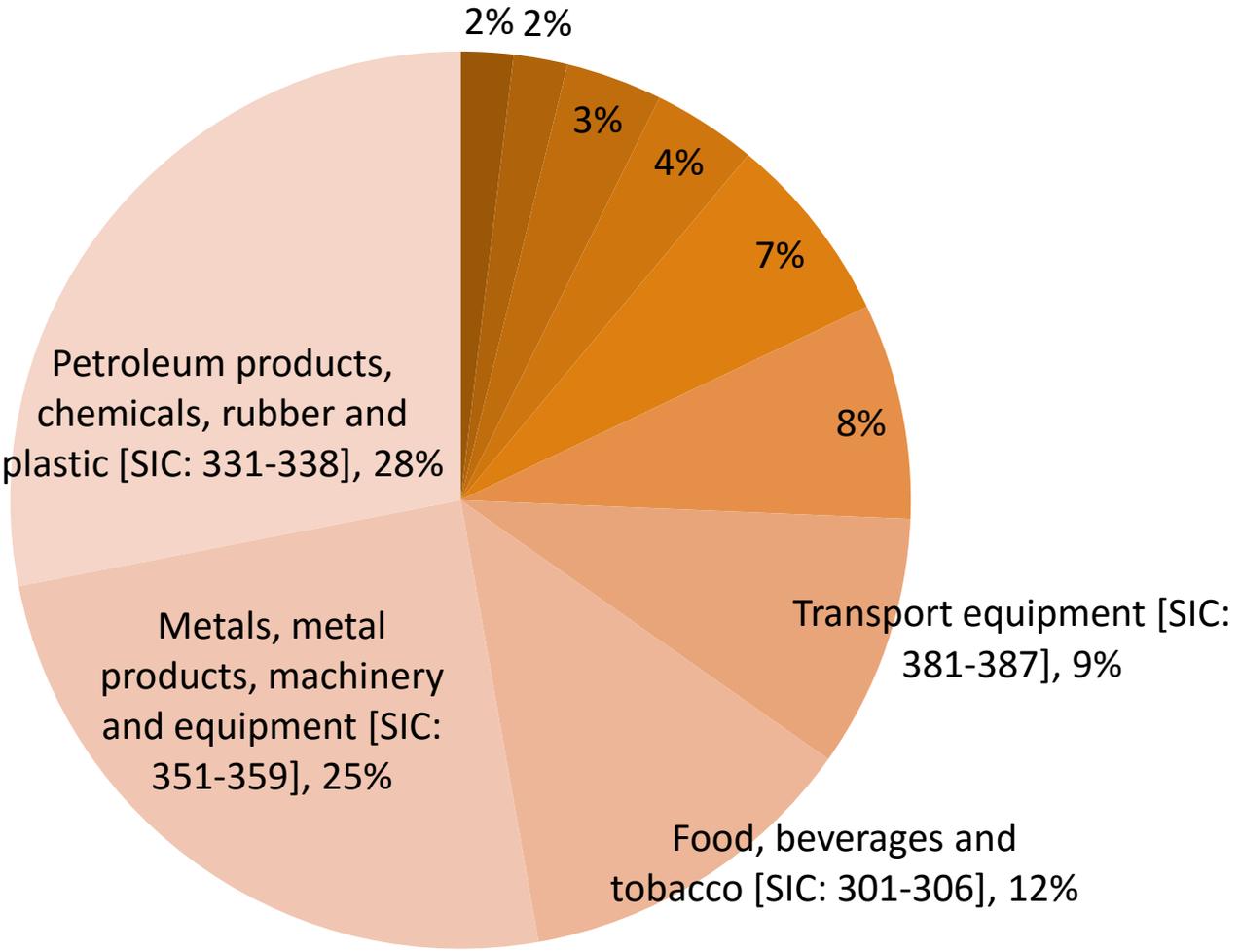
MANUFACTURING GVA BY PROVINCE, 2011



WHY GUATENG CITY REGION?

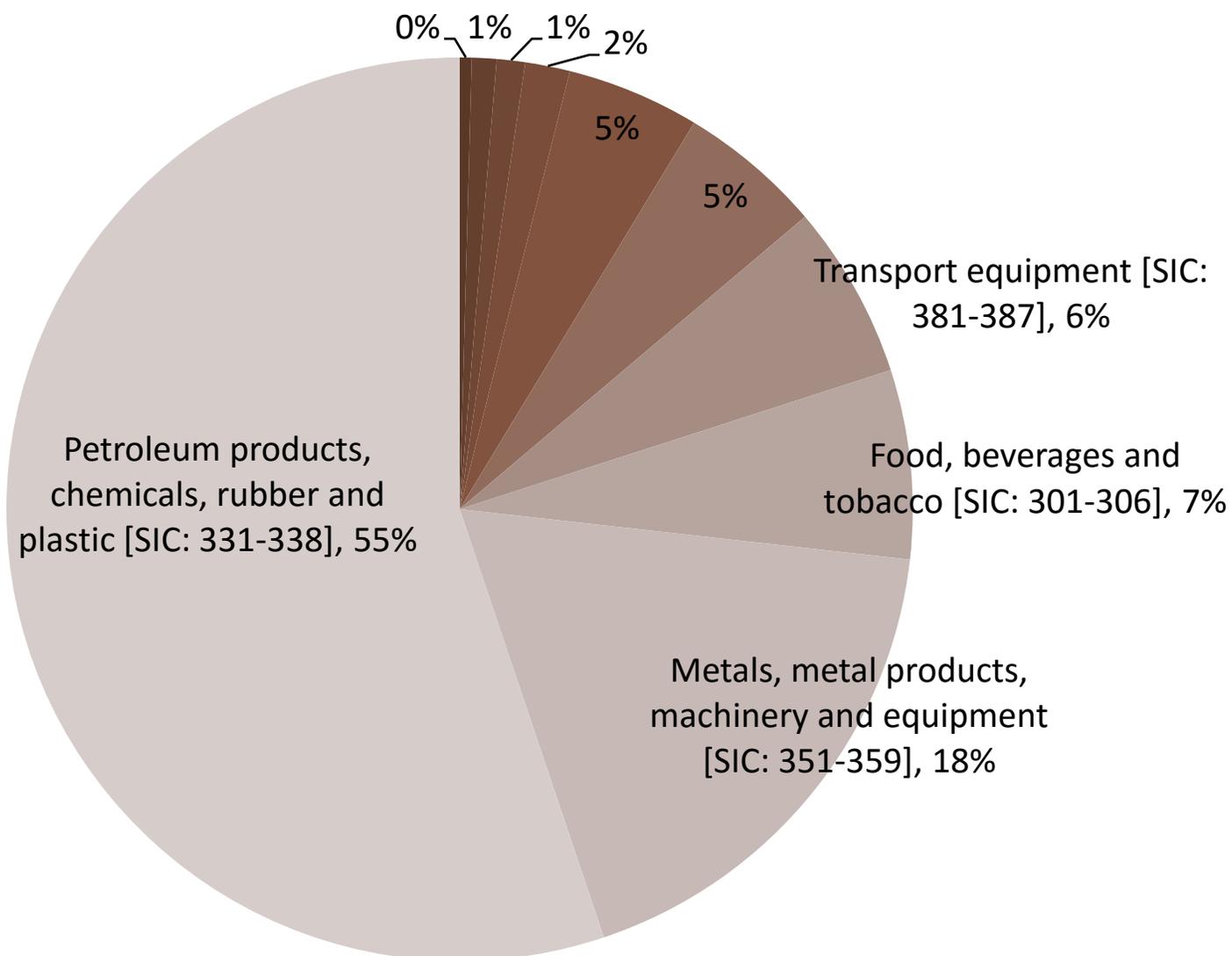


SUB-SECTOR SHARES OF MANUFACTURING GVA, GCR 2011



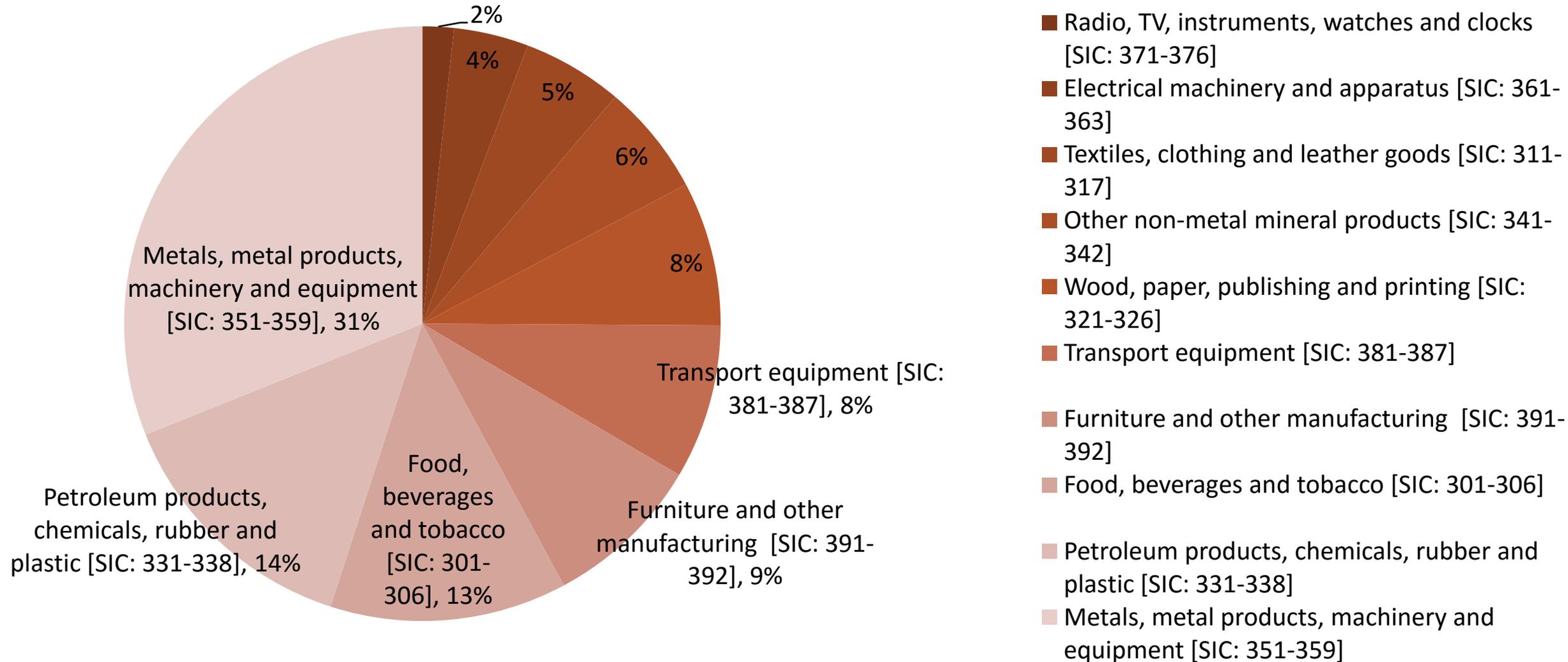
- Radio, TV, instruments, watches and clocks [SIC: 371-376]
- Textiles, clothing and leather goods [SIC: 311-317]
- Electrical machinery and apparatus [SIC: 361-363]
- Other non-metal mineral products [SIC: 341-342]
- Wood, paper, publishing and printing [SIC: 321-326]
- Furniture and other manufacturing [SIC: 391-392]
- Transport equipment [SIC: 381-387]
- Food, beverages and tobacco [SIC: 301-306]
- Metals, metal products, machinery and equipment [SIC: 351-359]
- Petroleum products, chemicals, rubber and plastic [SIC: 331-338]

SUB-SECTOR SHARES OF TOTAL FIXED CAPITAL STOCK IN MANUFACTURING, GCR 2013

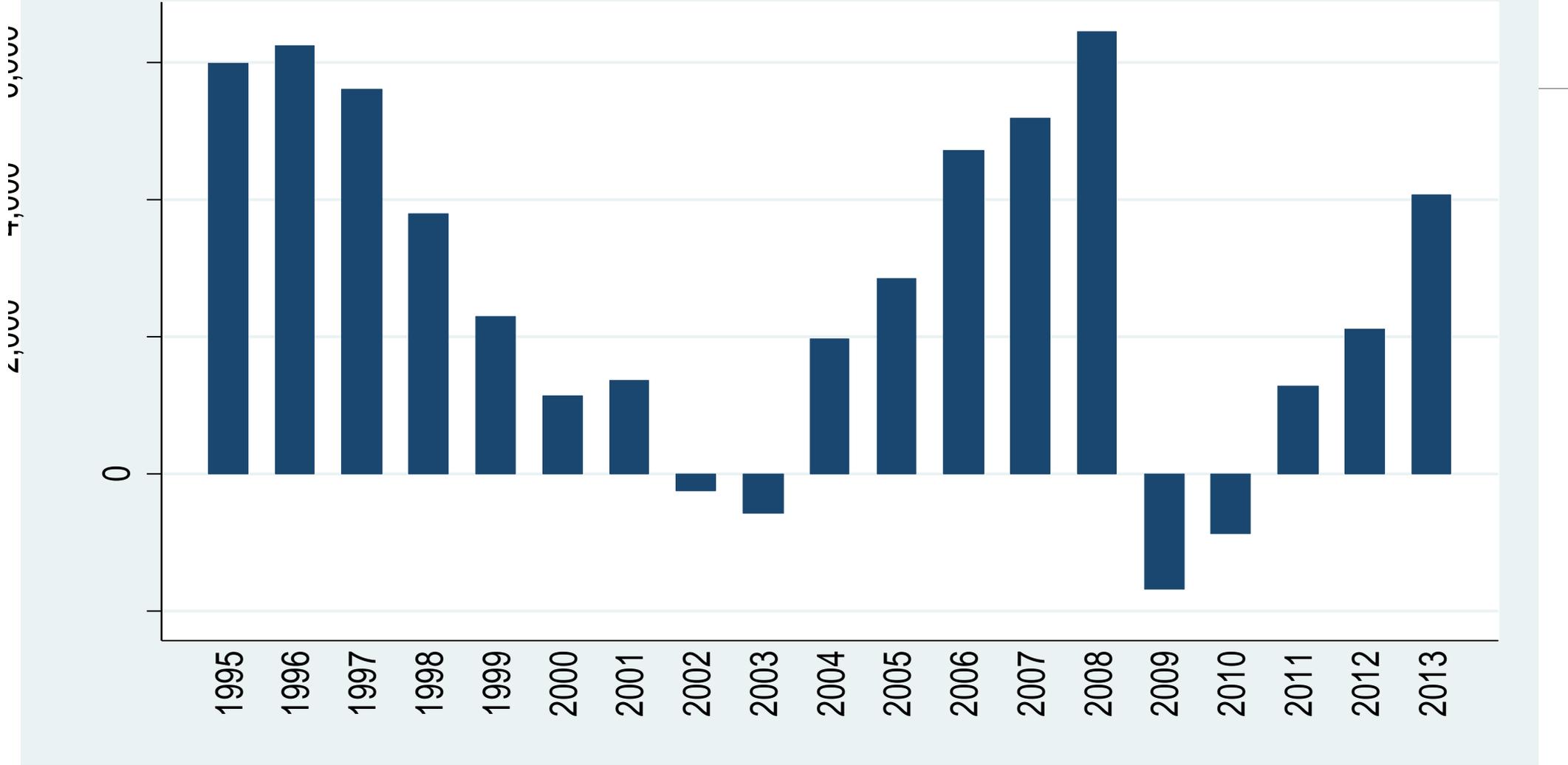


- Radio, TV, instruments, watches and clocks [SIC: 371-376]
- Textiles, clothing and leather goods [SIC: 311-317]
- Electrical machinery and apparatus [SIC: 361-363]
- Furniture and other manufacturing [SIC: 391-392]
- Wood, paper, publishing and printing [SIC: 321-326]
- Other non-metal mineral products [SIC: 341-342]
- Transport equipment [SIC: 381-387]
- Food, beverages and tobacco [SIC: 301-306]
- Metals, metal products, machinery and equipment [SIC: 351-359]
- Petroleum products, chemicals, rubber and plastic [SIC: 331-338]

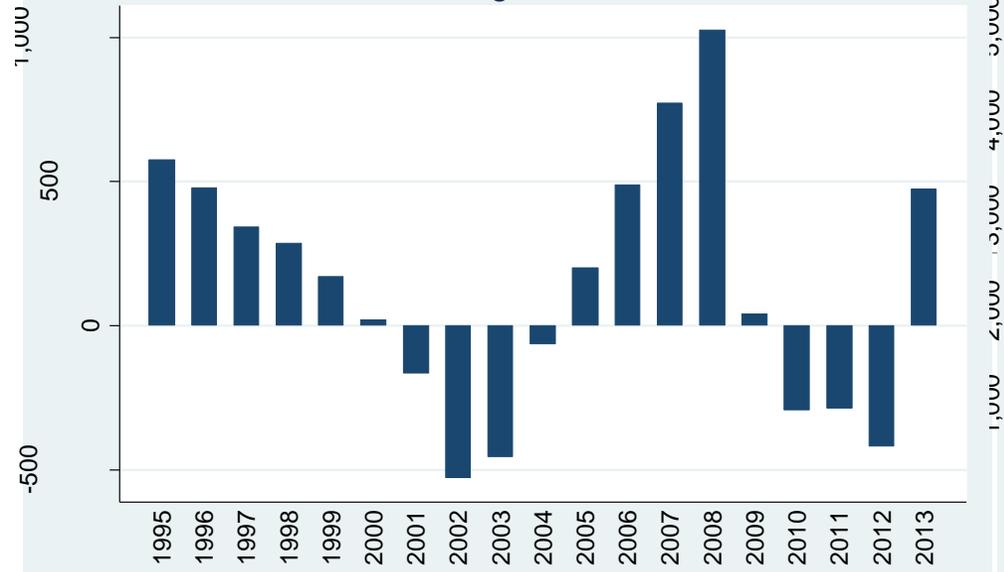
SUB-SECTOR SHARES OF MANUFACTURING EMPLOYMENT, GCR 2013



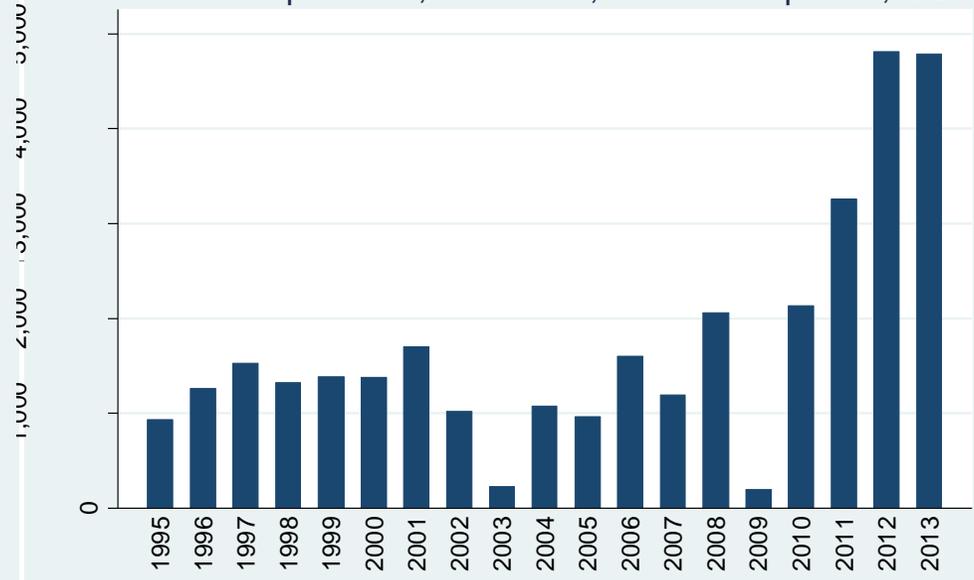
Net domestic fixed investment in manufacturing in the GCR



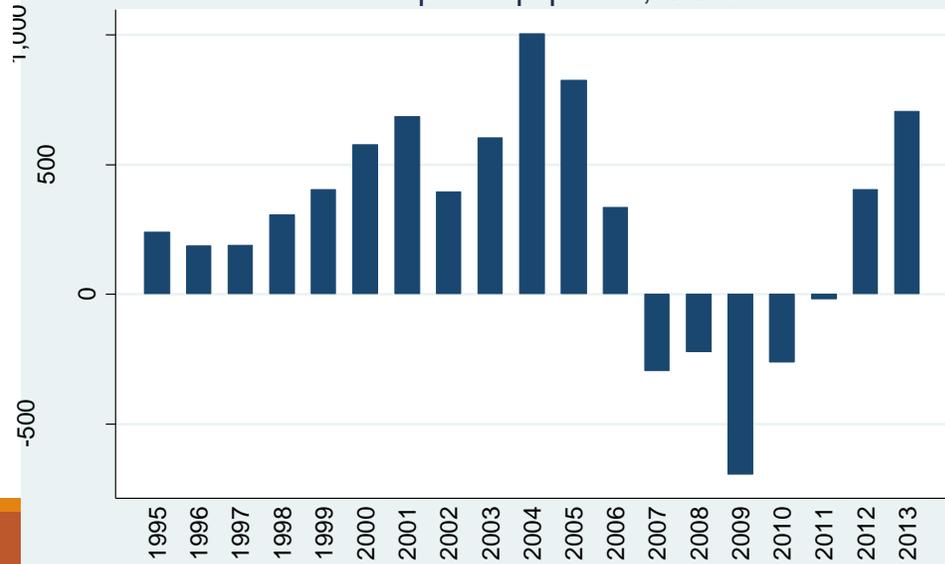
Net domestic fixed investment in Food, beverages & tobacco, GCR



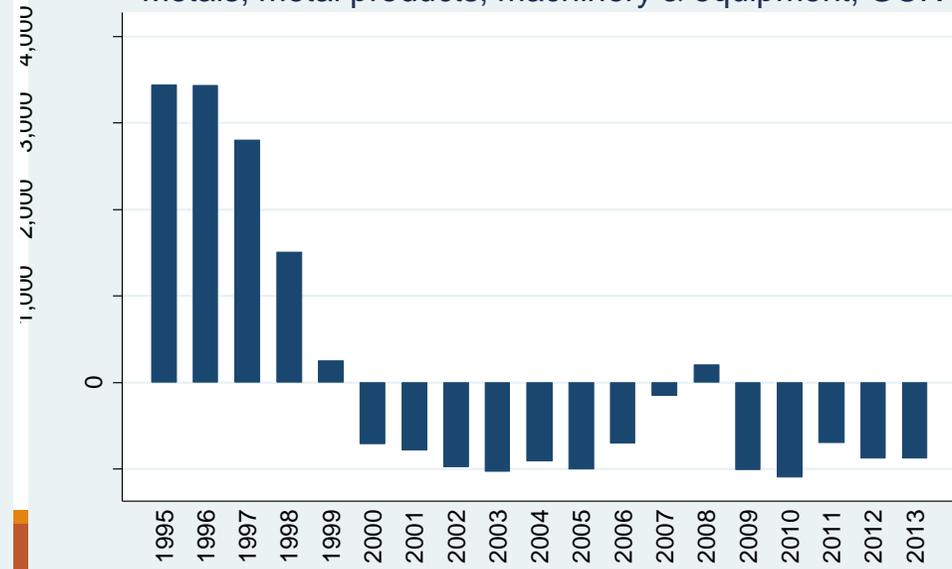
Net domestic fixed investment in Petroleum products, chemicals, rubber and plastic, GCR



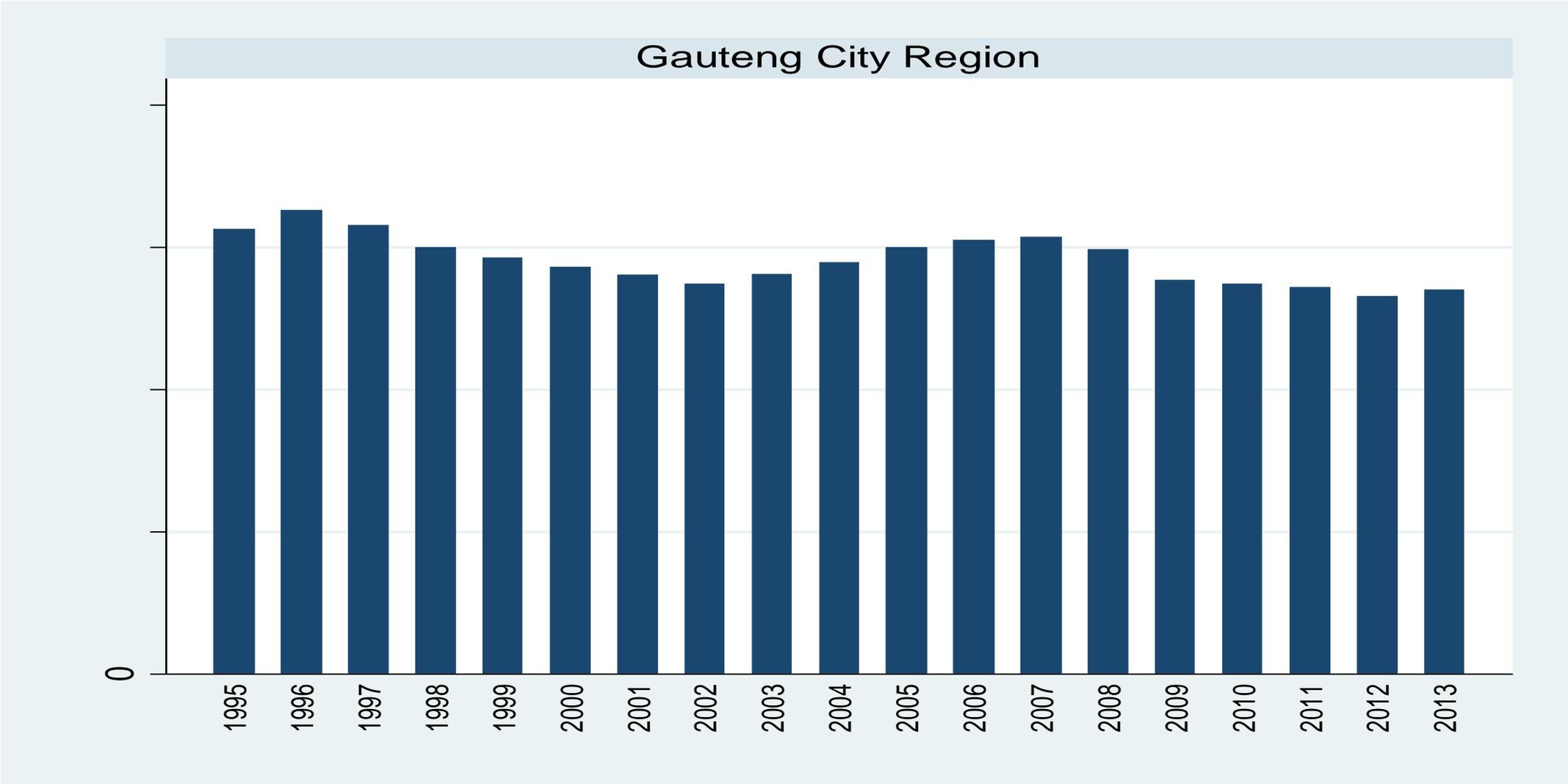
Net domestic fixed investment in Transport equipment, GCR



Net domestic fixed investment in Metals, metal products, machinery & equipment, GCR



MANUFACTURING EMPLOYMENT, GCR 1995-2013



CHANGES IN EMPLOYMENT ACROSS MANUFACTURING SUB-SECTORS, GCR 1995-2013

	%Δ 1995-2013
Manufacturing [SIC: 3]	-13%
Food, beverages and tobacco [SIC: 301-306]	-15%
textiles, clothing and leather goods [SIC: 311-317]	-31%
Wood, paper, publishing and printing [SIC: 321-326]	17%
Petroleum products, chemicals, rubber and plastic [SIC: 331-338]	16%
Other non-metal mineral products [SIC: 341-342]	-55%
Metals, metal products, machinery and equipment [SIC: 351-359]	-5%
Electrical machinery and apparatus [SIC: 361-366]	-11%
Radio, TV, instruments, watches and clocks [SIC: 371-376]	-10%
Transport equipment [SIC: 381-387]	-17%
Furniture and other manufacturing [SIC: 391-392]	-18%

CHANGE IN CAPITAL STOCK AND EMPLOYMENT IN MANUFACTURING, 1995-2011

	Fixed capital stock	Employment : Total	Employment : Highly skilled	Employment : Skilled	Employment : Semi and unskilled	Employment : Informal
Manufacturing [SIC: 3]	14%	-14%	15%	-4%	-31%	2%
Food, beverages and tobacco [SIC: 301-306]	7%	-17%	-2%	-14%	-50%	43%
Textiles, clothing and leather goods [SIC: 311-317]	-9%	-32%	-36%	-44%	-65%	21%
Wood, paper, publishing and printing [SIC: 321-326]	36%	18%	33%	25%	0%	35%
Petroleum products, chemicals, rubber and plastic [SIC: 331-338]	15%	11%	31%	25%	-5%	-30%
Other non-metal mineral products [SIC: 341-342]	35%	-119%	-62%	-79%	-110%	-179%
Metals, metal products, machinery and equipment [SIC: 351-359]	-8%	-5%	19%	-2%	-21%	27%
Electrical machinery and apparatus [SIC: 361-363]	3%	-14%	14%	-22%	-22%	-7%
Radio, TV, instruments, watches and clocks [SIC: 371-376]	10%	-13%	16%	-19%	-19%	-75%
Transport equipment [SIC: 381-387]	39%	-18%	15%	-21%	-31%	
Furniture and other manufacturing [SIC: 391-392]	60%	-17%	-19%	-29%	-31%	11%

CONCLUSIONS

- Manufacturing matters: employment and linkages
- MEC matters: conditions the nature and scope of linkage development and employment
- Deep seated unemployment in South Africa rooted in the **Industrial Structure** of the economy, not labour market structure