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Title:

Development Paths and Employment, presentation 22 July 2009

Authors:

Davies, Rob

Suggested keywords:

Employment; growth paths; output growth; productivity; **dynamic sectors**

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HSRC RESEARCH OUTPUTS

6150



Development Paths and Employment

Presentation by Rob Davies

22 July 2009

Pretoria

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Introduction

- Work in CPEG focussed on employment scenarios
- Al Berry's work on growth accelerations identifies different roads to high employment
 - High road – Chile – high wage and productivity growth
 - Low road – Indonesia – low wage and productivity growth
- This project explores this
- Adopt alternative 'neutral' terms – extensive and intensive development paths

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Output, employment and productivity: a Fundamental Relationship

- Labour productivity is defined as output per worker
- Output, employment and productivity are thus not independent
 - Any two can be determined exogenously, but the third must then follow
- In growth terms this implies

Employment Growth Rate
by definition equals
Output Growth Rate
minus Labour Productivity Growth Rate

Extensive and Intensive Employment

Growth Paths

- Use this fundamental relationship to clarify extensive and intensive growth
- Suppose output and productivity have been growing at two different trend rates
- Employment will have been rising at a rate equal to the difference between the two
- Say we want to raise employment growth rate
- Two extreme alternatives:
 - Output growth rate rises faster than productivity
 - Productivity growth rate rises faster than output
- We call the first 'extensive growth' and the second 'intensive growth'

Extensive versus Intensive Growth

- In the short run, extensive growth is likely to raise employment faster than intensive
- So why choose an intensive growth path?
- Productivity growth is important for
 - Income growth
 - Investment
 - Poverty reduction
- This leads us to a broader concern with 'Development Paths' rather than 'Employment Paths'
- Focus on measuring which path an economy is on, rather than which it should be on



Development Paths

- Development is a process of reallocating resources towards 'dynamic sectors' (Ocampo)
- Two aspects of sector dynamism:
 - Productivity growth of the sector
 - Connectedness
- We explore how each of these might be measured
- Then create a combined 'index of dynamism'

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Sectoral Productivity Growth

- Differentiate sectors that are growing because of some 'internal engine of growth' from those being pulled along by others
 - 'Dynamic sectors' – output growth is driven by productivity growth
 - 'Sluggish' sectors – output growth driven by employment growth
- Measuring productivity growth is central

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Identifying 'dynamic' and 'sluggish' sectors

- We measure productivity growth in standard way – growth in output per worker over extended period
- But categorising sectors as dynamic or sluggish requires some benchmark
- *Domestically oriented measures*: compare each sector with average of SA sectors
- *Globally oriented measures*: compare gap between SA sector and some international productivity measure

Domestically versus globally oriented productivity measures

- *Domestically oriented measures:*
 - Historical performance
 - Gives a relative measure - ranks sectors relative to other
- *Globally oriented measures:*
 - Measure of potential
 - Third world productivity growth driven more by adaptation than innovation
 - Bigger the gap, the more scope for catch up
 - Absolute measure – all sectors could be ‘dynamic’
- The two measures likely to give opposite results

Connectedness

- Linkages determine how sectoral dynamism spills over into economy
- Standard measures from Input Output Tables
- Backward linkages show how the dynamic sector pulls along others
 - Bottlenecks
- Forward linkages show how dynamic sector stimulates others through supply
- We used IO tables from 1970 to 2007 to construct time series of sectoral multipliers and forward linkages

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Development Path Indicators

- For each sector we create an index from the product of our measures of sector dynamism and connectedness
- Then take the ratio of each sector to median for the whole economy
- Then classify sectors as
 - 'dynamic' – >50% above the median
 - 'sluggish' – >50% below the median
 - 'neither' – within 50% of median

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Classification of Sectors using Gap Measure and Full Multiplier

DYNAMIC		SLUGGISH	
Sector	Index	Sector	Index
Machinery and equipment [356-359]	2.09	Basic iron and steel [351]	0.45
Business services [83-88]	1.90	Other manufacturing [392-393]	0.44
Electrical machinery and apparatus [361-366]	1.84	Basic non-ferrous metals [352]	0.42
Professional and scientific equipment [374-376]	1.70	Coke and refined petroleum products [331-333]	0.39
Printing, publishing and recorded media [324-326]	1.62	Transport and storage [71-74]	0.39
Television, radio and communication equipment [371-373]	1.55	Communication [75]	0.38
Agriculture, forestry and fishing [1]	1.55		
Coal mining [21]	1.50		



A Development Path Indicator

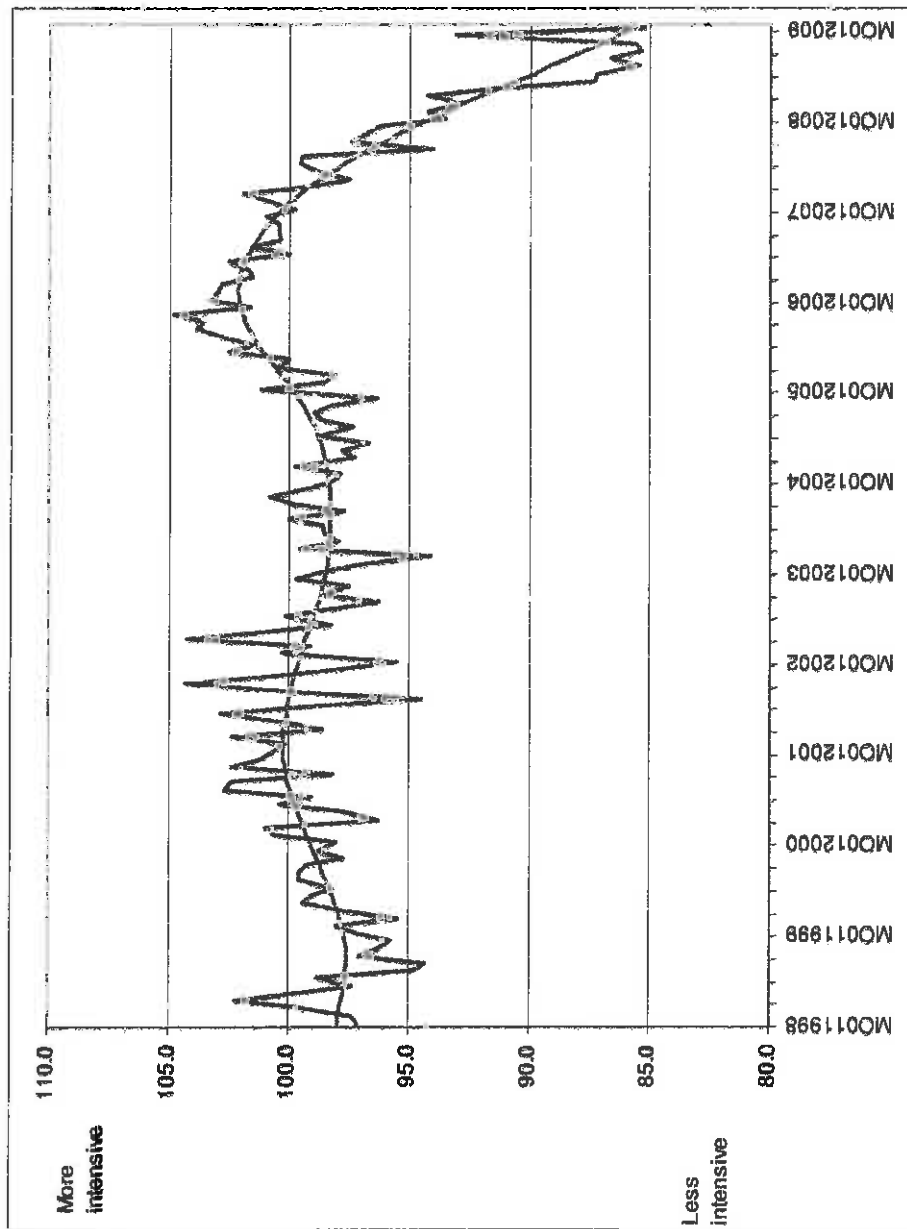
- Foregoing permits sectors to be categorised but does not provide an index that tracks where the economy is
- We take Monthly Output Index for Manufacturing Sectors
- Construct an index based on share of top ten dynamic manufacturing sectors ranked by our combined index

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Monthly Development Path Indicator

(2000 = 100)



- Index fell 19% Nov05 to Jan09
- Half fall between Apr and Aug 08
- Sectors with largest global productivity gaps and highest multipliers shrunk relative to others
- Economy moved away from intensive growth over past 3 years



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Conclusions

- Preliminary work
- Measurements need to be refined
 - Productivity measurement
 - Combined index weights
- The work helped us clarify thinking around a number of issues

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