Resource misallocation and total factor productivity: manufacturing firms in South Africa

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Introduction

Resource misallocation occurs where distortions exist in an economy that prevent the flow of capital and labour from less productive to more productive firms leading to a lower level of TFP than could otherwise be achieved

Such misallocation of labour and capital resources can greatly reduce aggregate productivity in an economy (Hsieh and Klenow, 2009; Bartelsman et al. 2013; Asker et al., 2014)

Key questions:

1. To what extent is capital and labour misallocated across firms within manufacturing sub-sectors in South Africa?
2. Is misallocation related to the size distribution of firms?
3. To what extent do legislative provisions in place to encourage investment, job creation and entrepreneurship impact on the efficient allocation of capital and labour?
4. To what extent do credit constraints lead to misallocation?

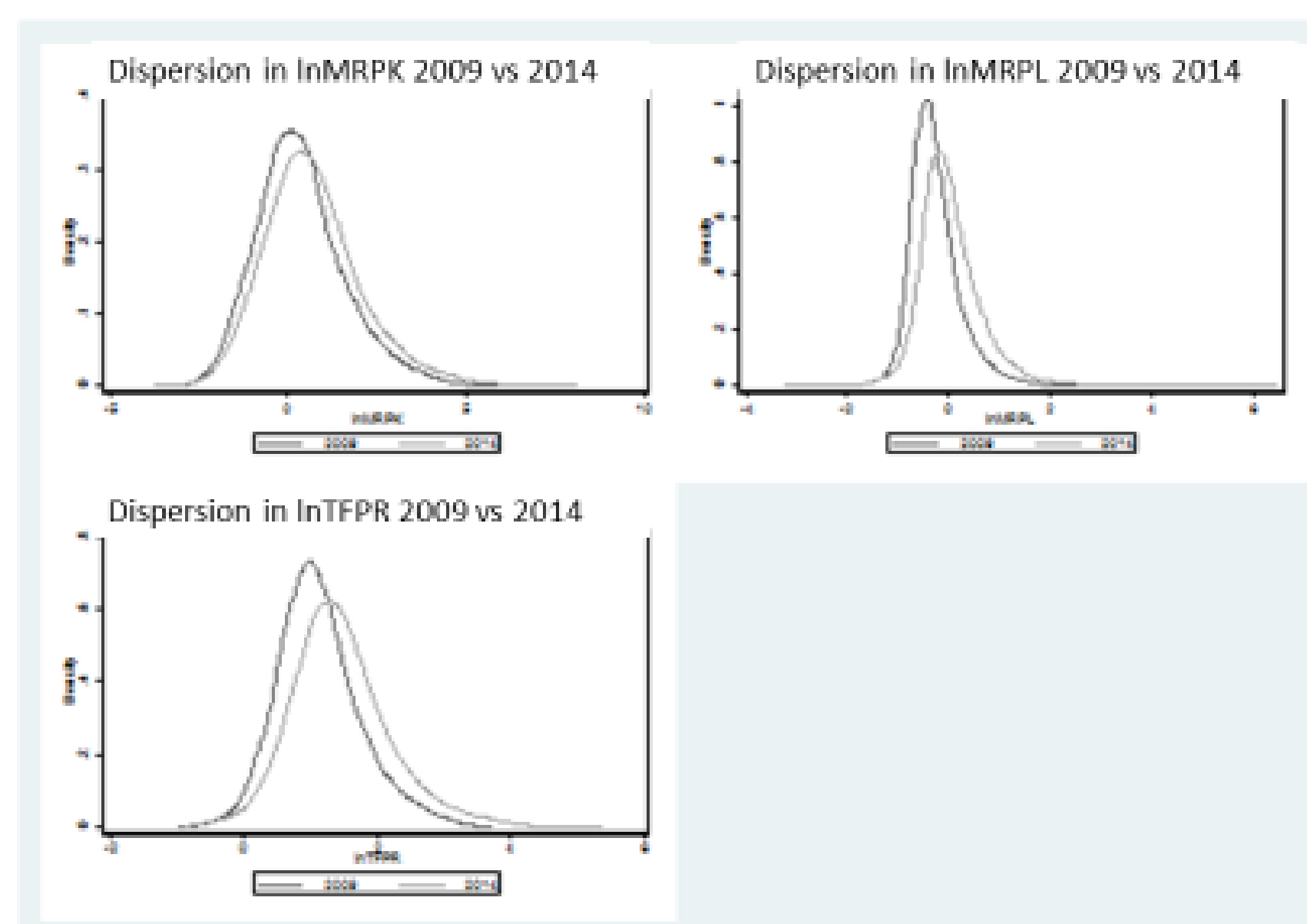## Figure 1: Dispersion in TFPR, MRPK and MRPL 2009 vs 2014

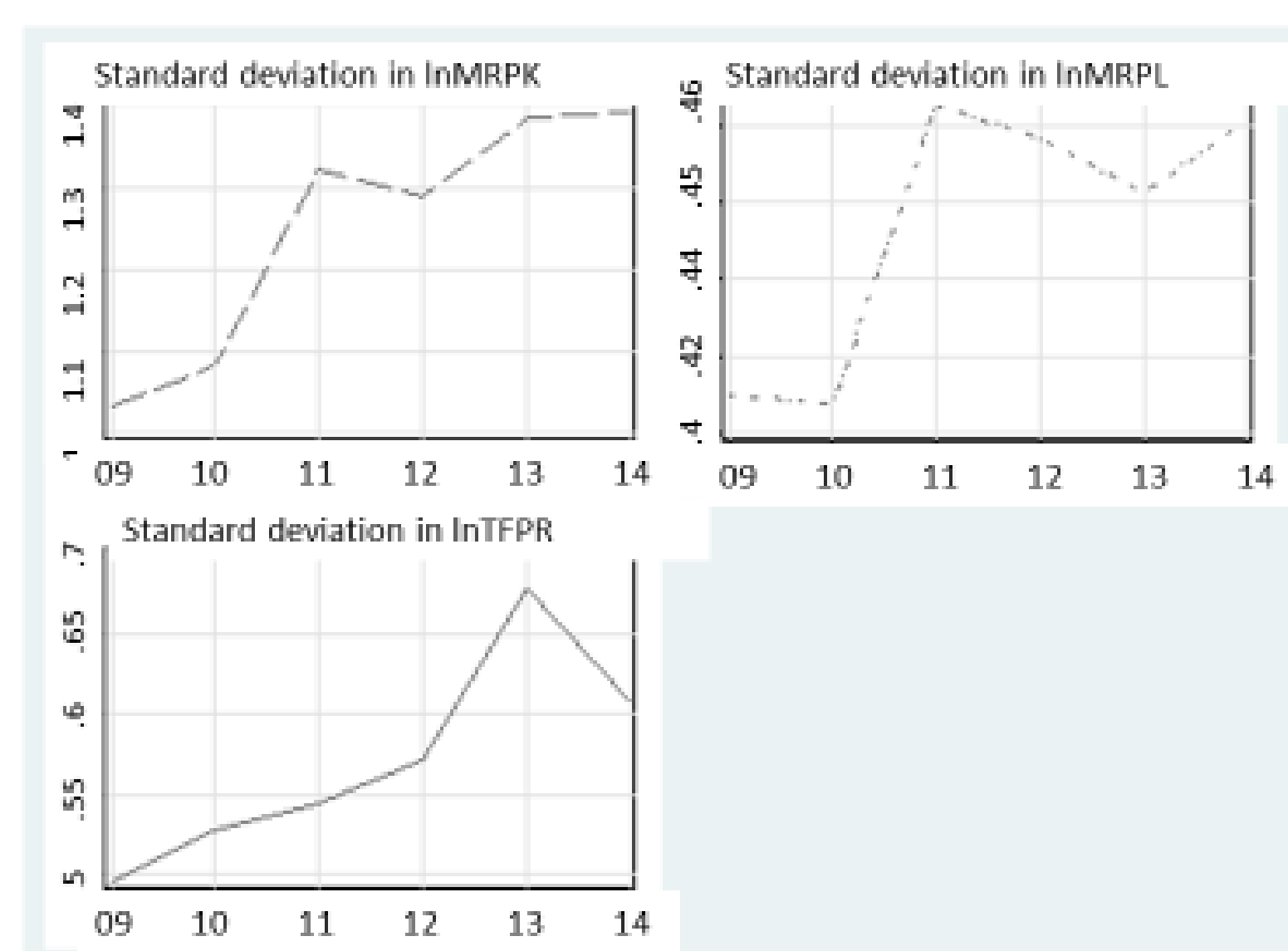## Figure 2: Trend in standard deviation of MRPK, MRPL and TFPR within sectors over time

Table 1: Markers of misallocation

	(1) TFPR	(2) MRPK	(3) MRPL
Learnership Allowance	-0.014	-0.072	-0.002
R&D Allowance	0.071***	0.184*	0.065
Depreciation Allowance	-0.012	-0.132***	0.034
Access to Credit	0.012***	0.069***	0.021***
size2	-0.108***	-0.378***	-0.098***
size3	-0.125***	-0.485***	-0.050***
size4	-0.152***	-0.534***	-0.063***
year10	0.012**	-0.033	-0.033***
year11	0.029***	0.038*	-0.056***
year12	0.066***	0.155***	-0.027***
year13	0.118***	0.282***	0.058***
year14	0.140***	0.363***	0.111***
Observations	139,796	139,796	139,796

Table 2: Markers of TFPR dispersion by size category

	(1) TFPR 1	(2) TFPR 2	(3) TFPR 3	(4) TFPR 4
Learnership Allowance	-0.192***	0.011	-0.011	-0.023
R&D Allowance	0.066	0.067*	0.019	0.047
Depreciation Allowance	-0.026	-0.014	0.002	-0.048**
Access to credit	0.013***	0.016***	0.008***	-0.021***
Observations	62,152	58,469	17,032	2,143

Table 3: Markers of MRPK dispersion by size category

	(1) MRPK 1	(2) MRPK 2	(3) MRPK 3	(4) MRPK 4
Learnership Allowance	-0.870***	-0.037	-0.096	-0.121
R&D Allowance	-0.020	0.215	-0.054	-0.029
Depreciation Allowance	-0.252**	-0.193**	-0.088	-0.204***
Access to credit	0.085***	0.071***	0.040***	-0.074***
Observations	62,152	58,469	17,032	2,143

Table 4: Markers of MRPL dispersion by size category

VARIABLES	(1) MRPL 1	(2) MRPL 2	(3) MRPL 3	(4) MRPL 4
Learnership Allowance	-0.156***	0.090**	-0.015	-0.018
R&D Allowance	0.005	0.005	0.101	0.066
Depreciation Allowance	0.067	0.061	0.057	-0.038
Access to credit	0.020***	0.026***	0.021***	0.006
Observations	62,152	58,469	17,032	2,143

Key markers of misallocation

- Misallocation is most prevalent among the smallest size group
- There is some evidence of higher misallocation of labour among the largest firms compared with medium sized firms
- Credit constraints significantly add to the misallocation of capital and labour among micro, small and medium sized firms but appears to reduce misallocation among the largest firms
- The Learnership Allowance reduces the misallocation of labour and capital among the smallest firms
- The Depreciation Allowance reduces the misallocation of capital across the size distribution
- The R&D Allowance does not appear to affect the allocation of capital and labour