Industry Productivity & the Victorian Economy

September 2004

Questions Asked

- What are the macro impacts of industry productivity improvements?
  - Impact on State-wide growth & labour productivity
  - What are the key drivers?
  - What are the differences between industries?

The Model

- MMRF-GREEN
  - 32 industries/8 States & Territories
  - 1996-97 input-output data
  - Comparative static
  - Long-run closure

The Long-run Closure

- Labour market
  - Fixed: regional unemployment rates & wage differentials
  - Flexible: regional population & employment

The Long-run Closure

- Demand-side
  - Average propensity to consume fixed
  - Investment to capital ratio fixed
  - Government consumption tied to private consumption

The Shocks

- Stylised scenarios:
  - 10% primary factor productivity improvement in a Victorian industry
  - e.g.: **shock** a1prim("FinBusServ","Vic") = -10;

Impacts

Primary factor productivity improvement

industry 1

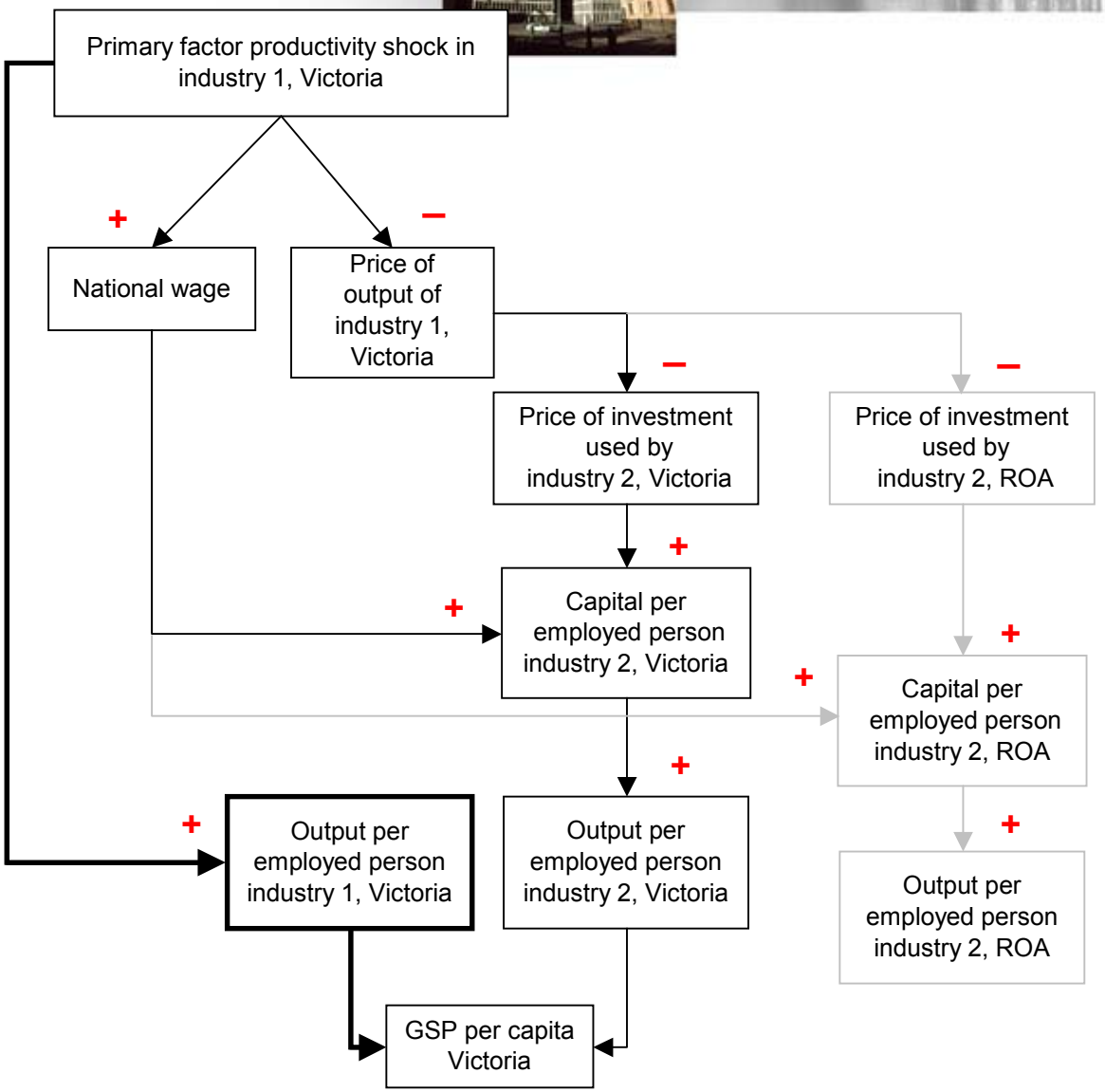
GSP per capita

GSP

- economy-wide labour productivity

- economy size

Mechanisms – GSP per capita



Mechanisms – GSP per capita

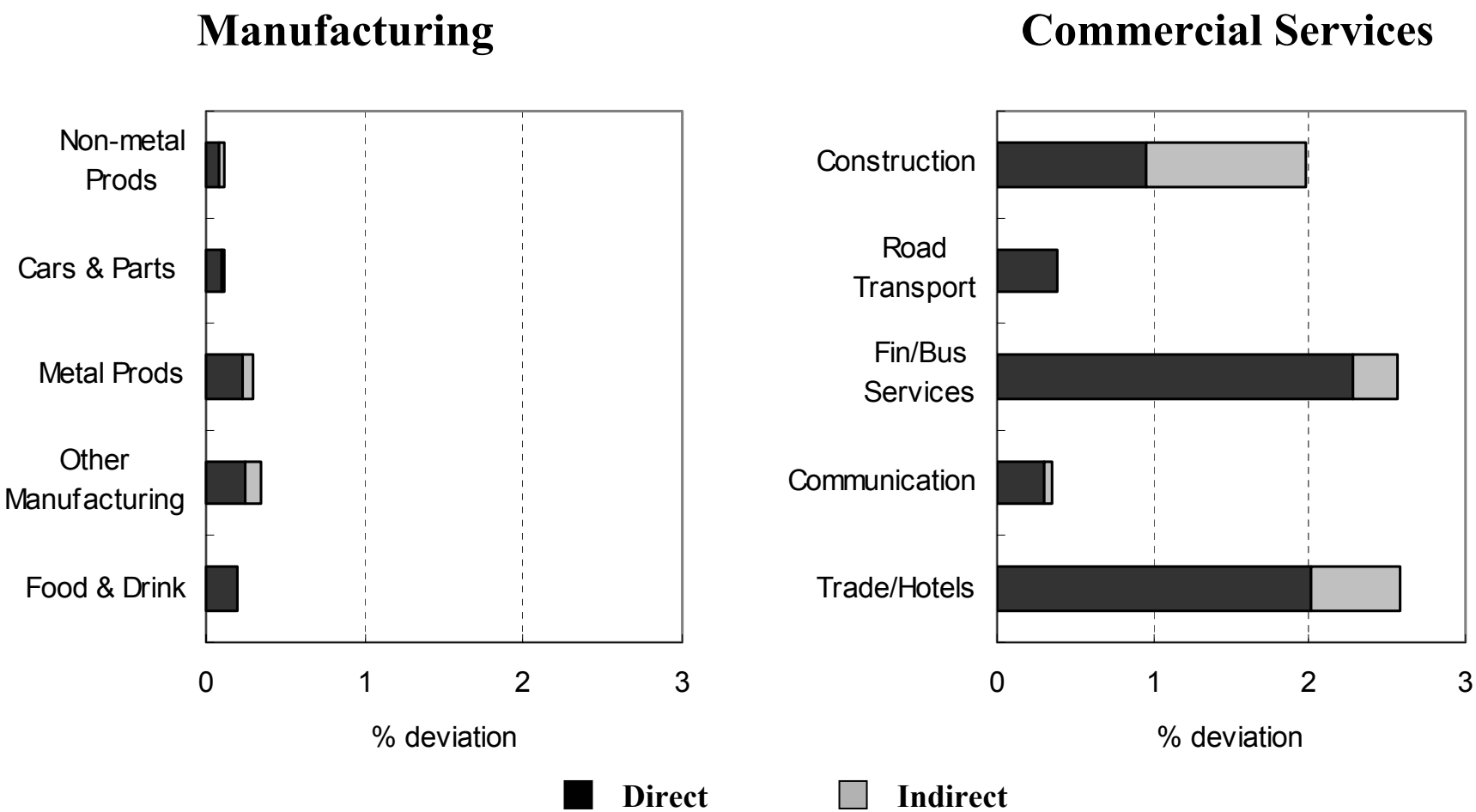
– GSP per capita = `yr_r` – `l`

– Direct effect = (`z` – `labind`) * industry_share

– Indirect effect = GSP per capita – Direct effect

Results – GSP per capita

GSP per capita:



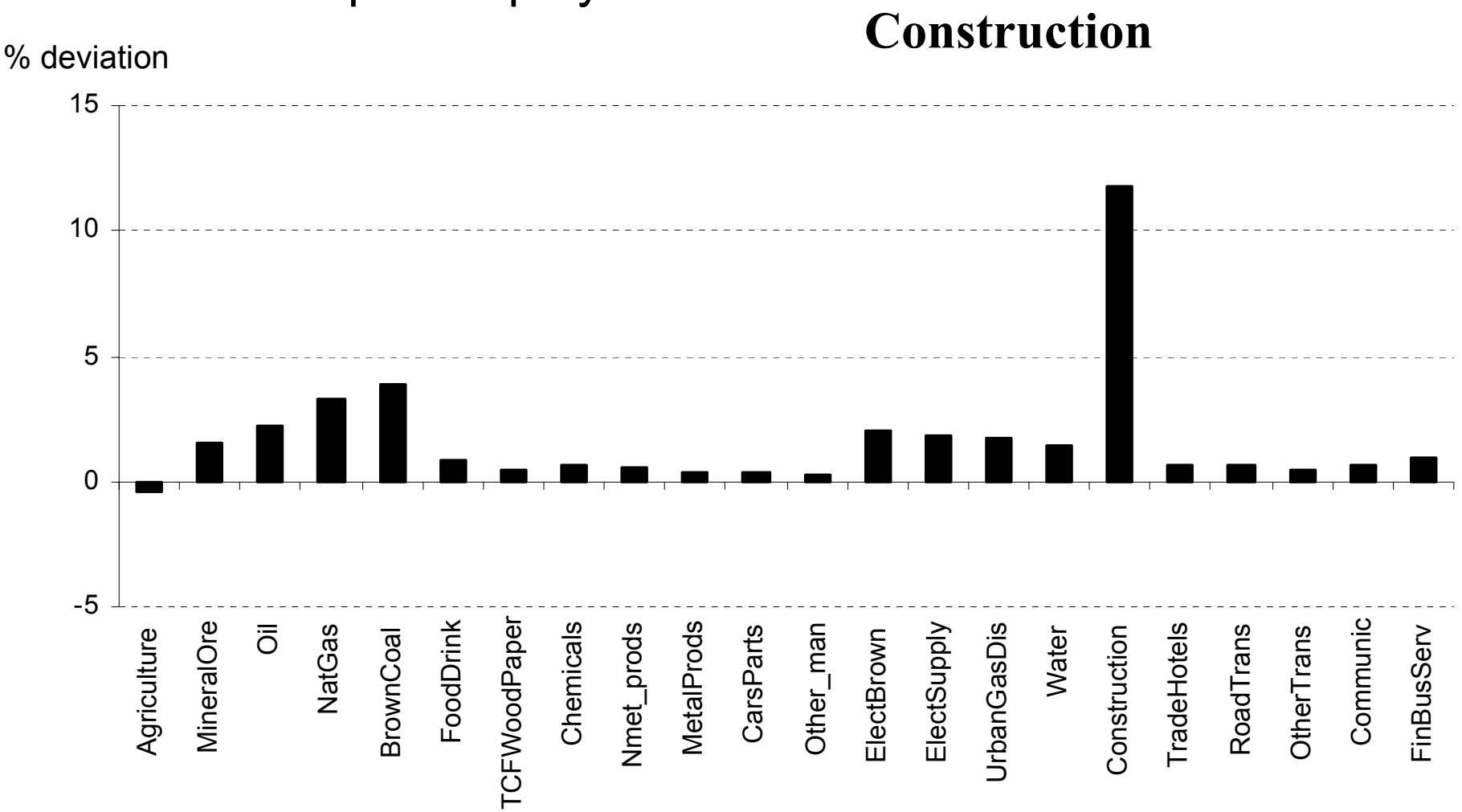
Results – GSP per capita

Inputs into investment:

BAS2_U		**MAR2_U**	
Construction	79%	TradeHotels	93%
CarsParts	7%		
FinBusServ	5%		
Other_man	5%		

Results – GSP per capita

Value-added per employee:



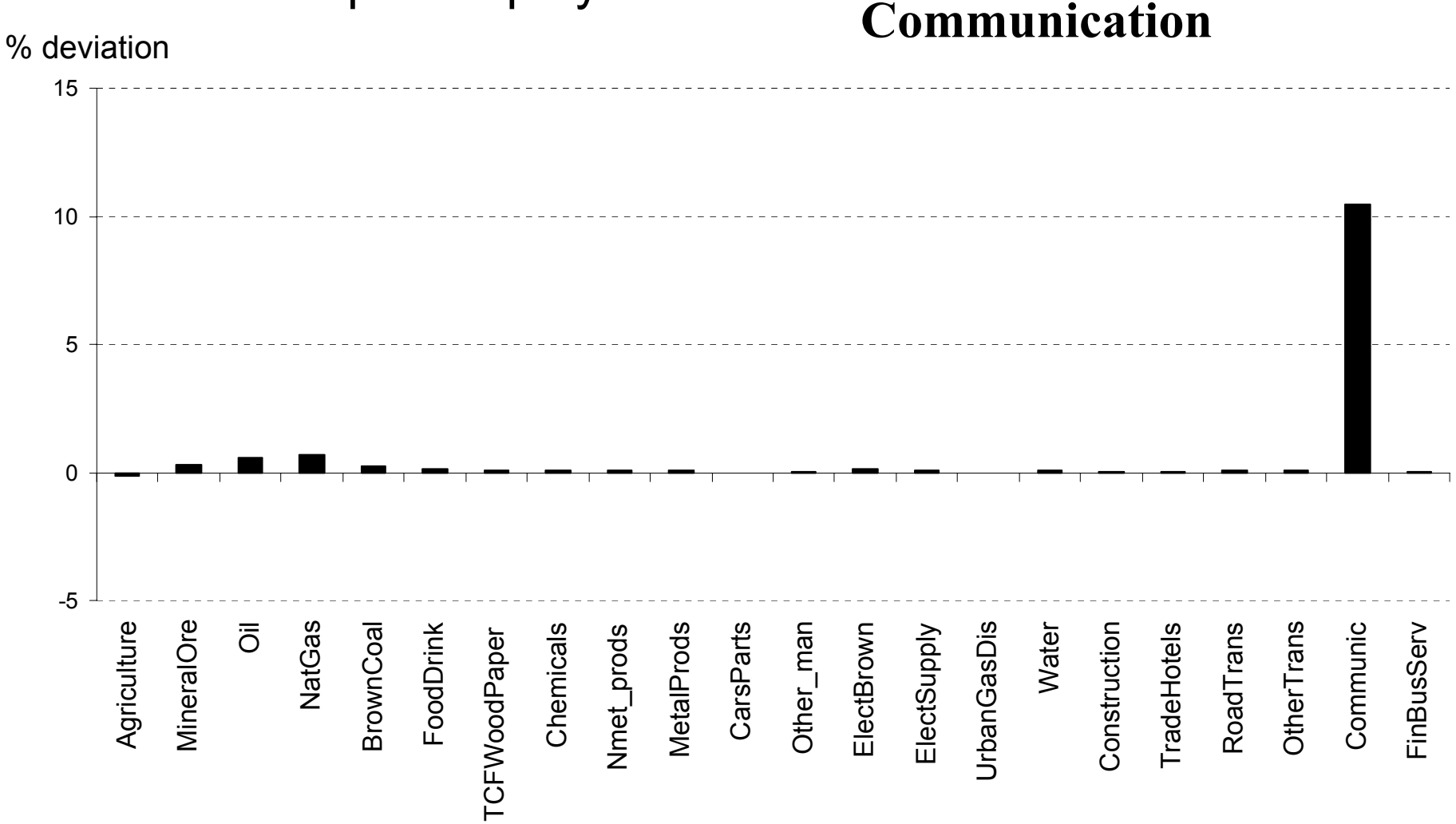
Results – GSP per capita

Capital as share of primary inputs:

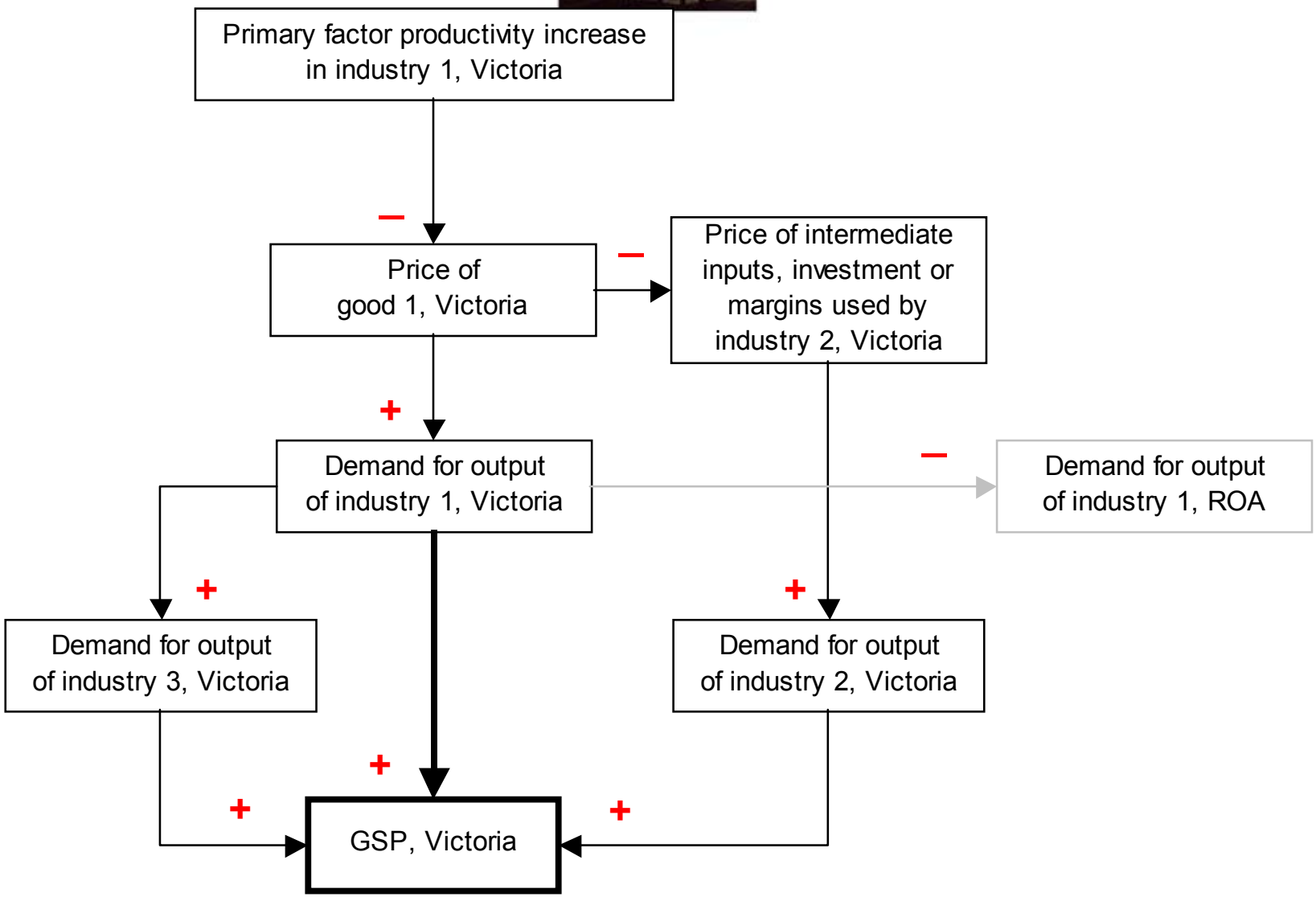
Capital Share	
BrownCoal	92%
NatGas	88%
ElectBrown	72%
FinBusServ	45%
CarsParts	17%

Results – GSP per capita

Value-added per employee:



Mechanisms – GSP



Mechanisms – GSP

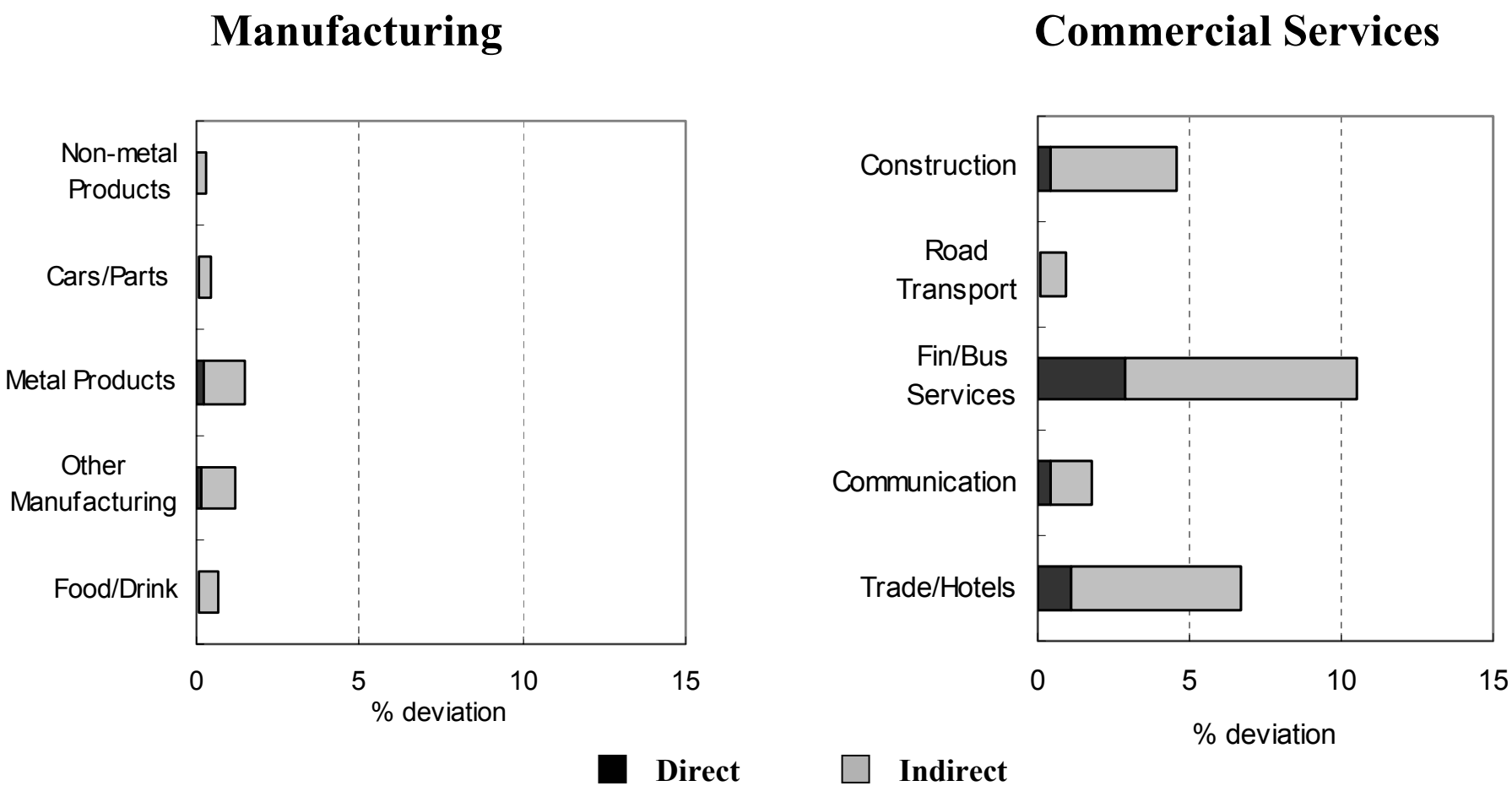
– GSP = `yr_r`

– Direct effect = `z` * industry_share

– Indirect effect = GSP – Direct effect

Results – GSP

GSP:

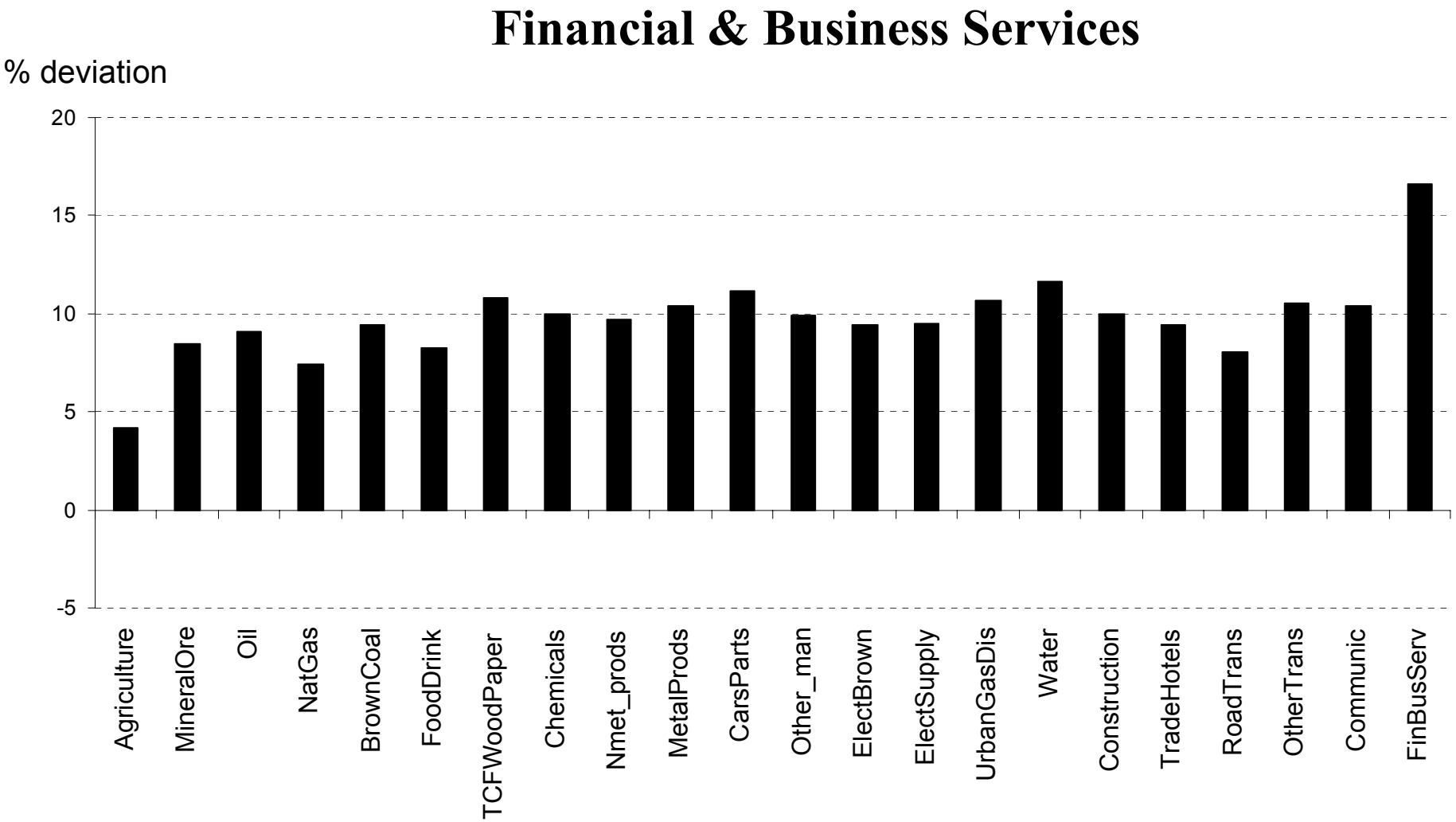


Results – GSP

Value-added:

Results – GSP

Value-added:



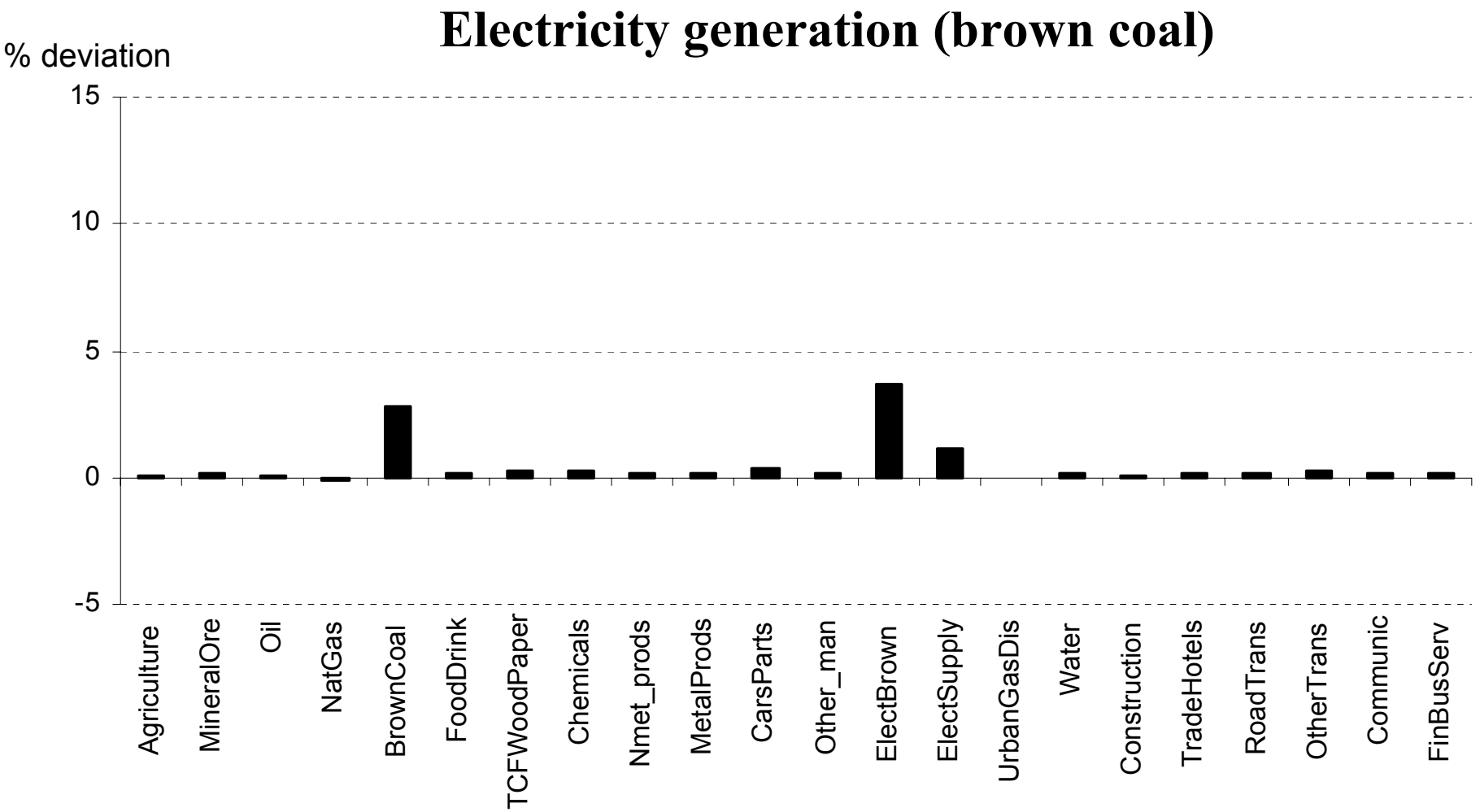
Results – GSP

Financial & Business Services: Destination of output

Destination:	
Intermediate inputs	83%
Investment	4%
Consumption	9%
Exports	4%

Results – GSP

Value-added:

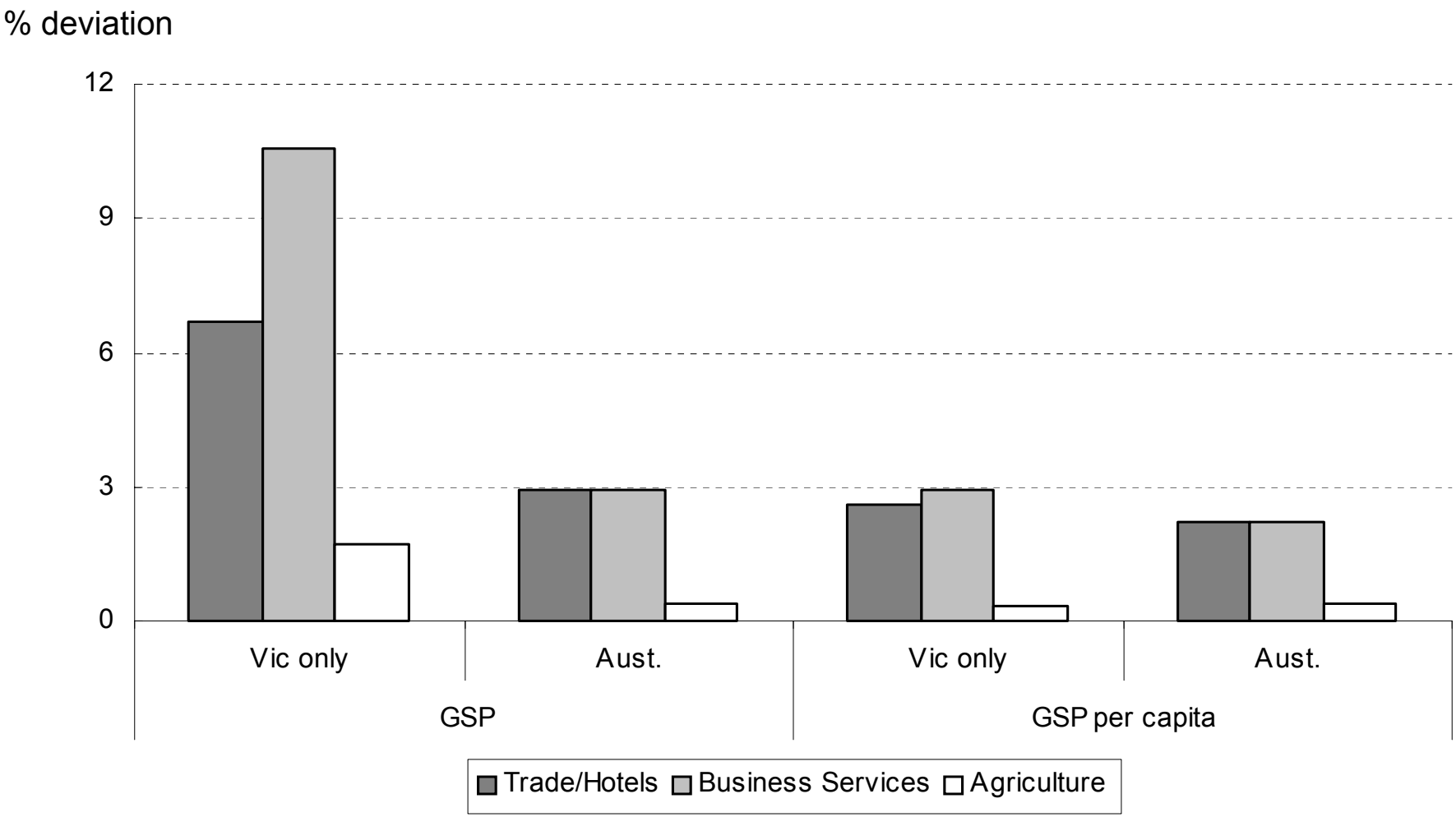


Results – GSP

Destination of output:

BrownCoal		**ElectBrown**	
ElectBrown	100%	ElectSupply	98%
		Aluminium Magnesium	2%

National Productivity Improvement



Possible further work

- Identifying productivity gaps
- Lack of benchmarking of industries
- Developments since 1996-97

Summary

- Industry productivity ➔ overall economy
- GSP per capita
  - Direct: industry size
  - Indirect: lowers cost of capital
- GSP
  - Direct: industry size
  - Indirect: lowers cost of capital, intermediate inputs, margin prices

Questions?

- E_del_f_ror
  100*(1/(tiny+ROR(j,q))*del_ror(j,q) - *del_nat_ror*) =
  BETA_R(j,q)*[cap_t(j,q)- kt(q)] + 100**del_f_ror*(j,q);

– Negative ROR(“CarsParts”,”Vic”)

Results – GSP per capita

Economy-wide capital/labour ratio: