

Modelling the impact of COVID-19 on the South African Economy

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Ex ante analysis of COVID-19 and lockdown

- SAM multiplier framework
 - Suddenness of pandemic makes it reasonable to assume no immediate changes in production method/technology
 - Drop in supply and demand are too severe and temporary for the market to find *new and stable* equilibrium price
 - Shocks work through quantity adjustments, not prices
 - ‘First pass’ estimates of the economic costs of L5 lockdown
 - Scenario informed by gazetted regulations for the initial three-week lockdown
 - Investment and export demand also affected, so these matched to macro-level assumptions
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Ex ante analysis of COVID-19 and lockdown

Four main mechanisms

- 1 Closing non-essential industries
- 2 Movement restrictions/stay-at-home measures
- 3 Decline in investment projects and activity
- 4 Interruptions in global trade

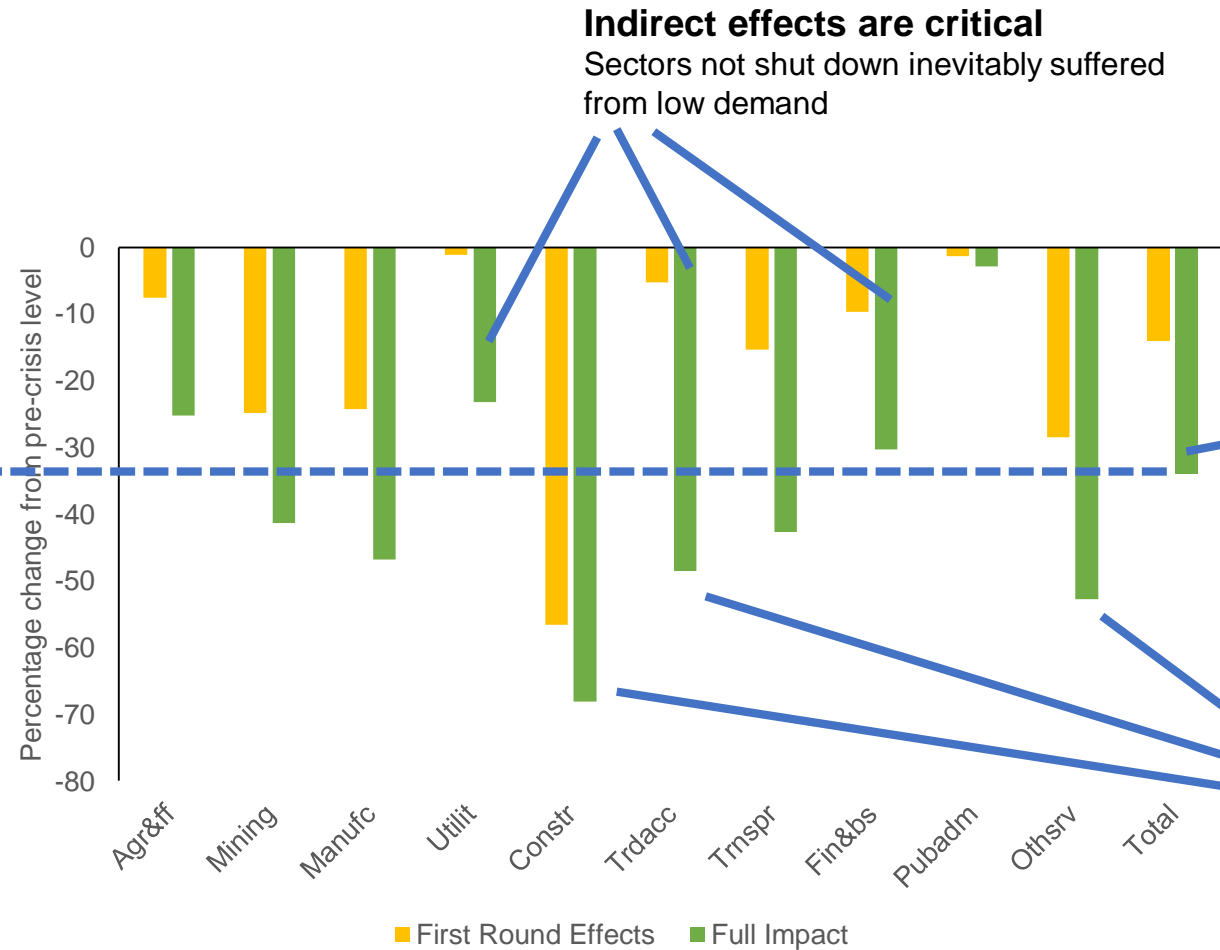


Investment demand falls by 60-80 per cent

Non-agriculture export demand falls by 40-75 per cent

	Mild decline (0 to -10%)	Moderate decline (-10% to -30%)	Large decline (-30% to -60%)	Severe decline (Larger than -60%)
	Agriculture, forestry, fishing			
			Mining and quarrying	
MANUFACTURING		Food and non-alcoholic beverages		Alcoholic beverages and tobacco
			Textiles, clothing, leather and footwear	
			Paper, paper products	Wood, wood products
	Pharmaceuticals, hygiene and cleaning	Petroleum	Basic chemicals, fertilizer, paint, other	
		Plastic, glass		Tyres, rubber products
				Non-metallic minerals and products (cement, concrete, etc.)
				Iron, steel, metal products
				Machinery and equipment
	Electricity, gas, water			
				Construction
		Wholesale, retail trade	Accommodation, catering	
Communication		Transport and storage		
Finance and insurance, computing services	Real estate, legal and accounting, other support services	Rentals, research, manufacturing services, other business services		
Health services		Education services	Recreation, other community services	

Some key findings



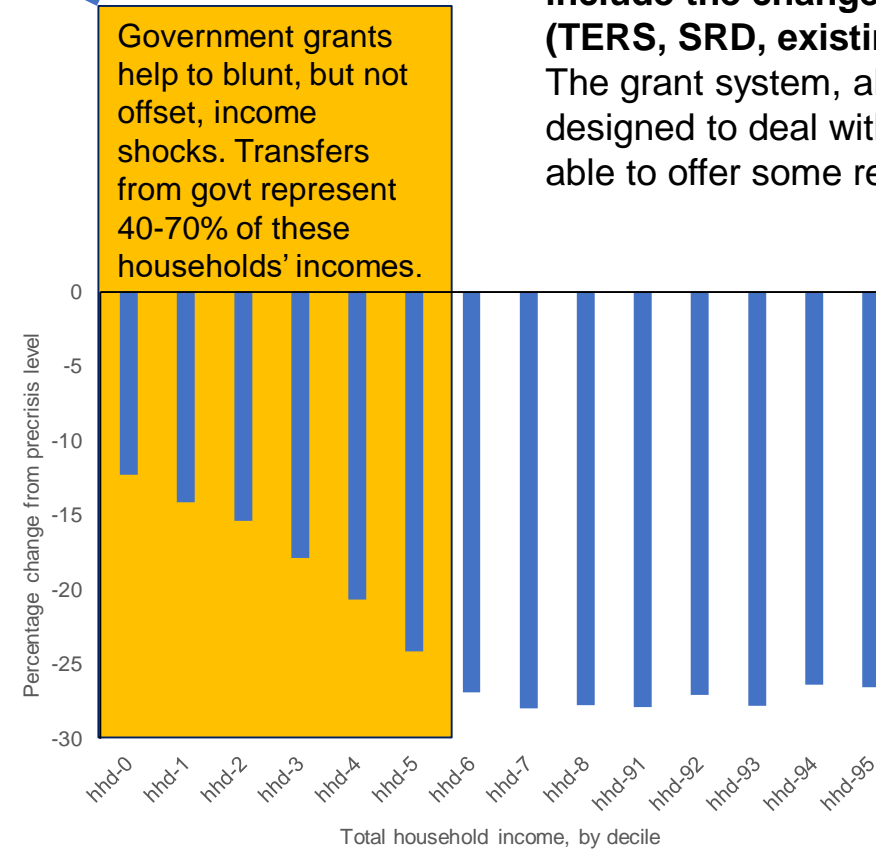
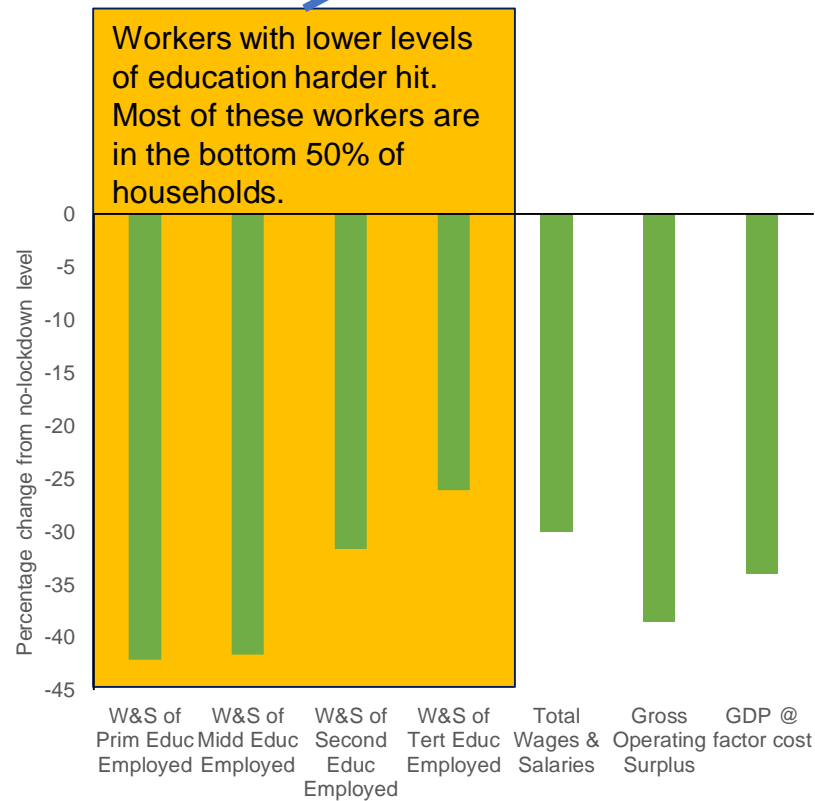
Production data suggested that many impacts came to pass

- Multiplier models are not forecasting tools in themselves, but can help inform forecasters
 - Multiplier models are used to analyse specific shocks and policy scenarios, stripping away other factors that could influence economic performance
 - Other events also influencing the economy (e.g. sovereign rating downgrade in March 2020), but pandemic and lockdown dominates

	April 2020 (y/y % change)	Arndt et al. (2020) (% deviation from base)
Mining production	-50.9%	-41.4%
Manufacturing production	-48.7%	-46.8%
Volume of electricity distributed	-23.2%	-23.2%
Real retail trade sales	-49.9%	-48.6%
Real wholesale trade sales	-42.0%	

Some key findings

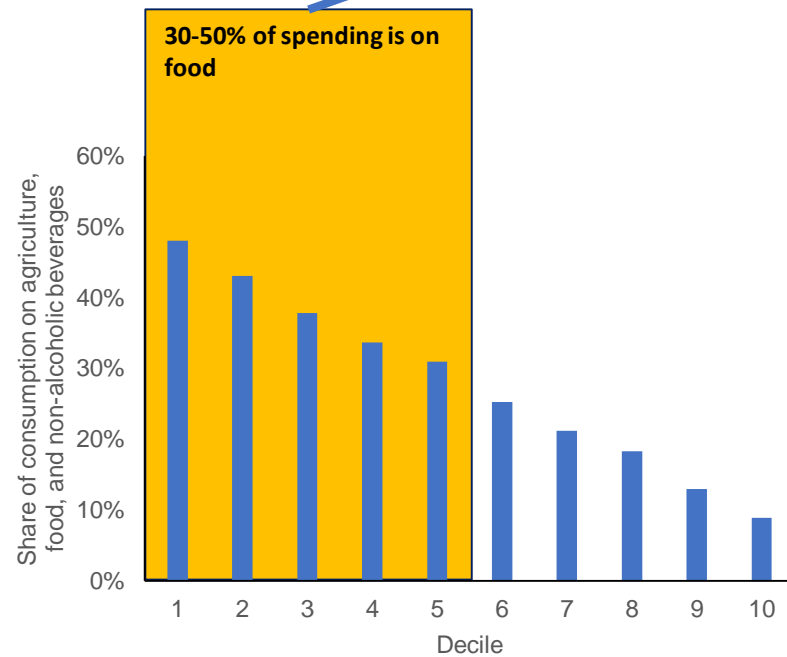
Sharp, unexpected loss of income brings high risk of food insecurity...



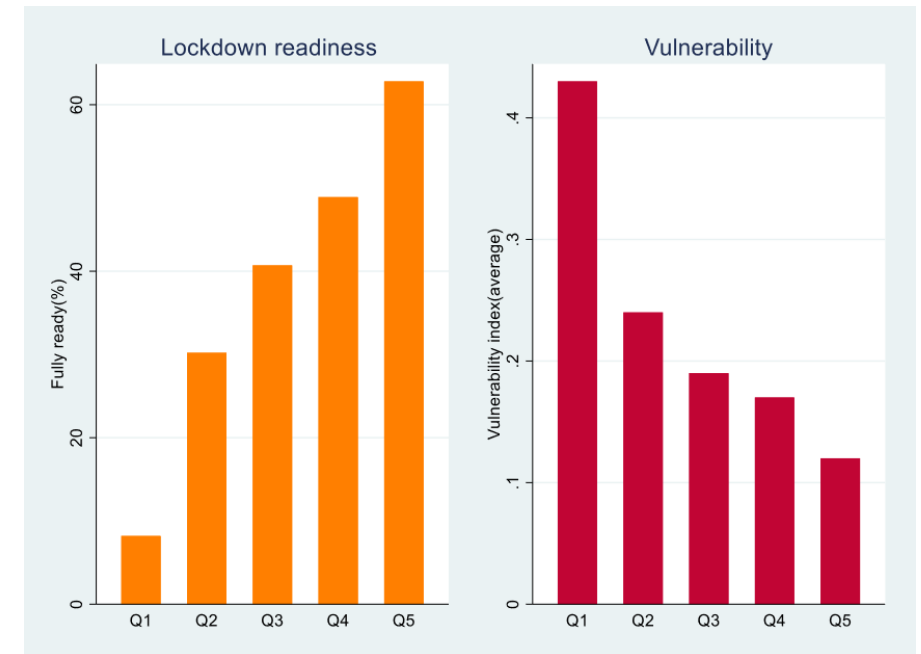
Some key findings

Poor households especially sensitive to pandemic and economic risks

Poorest quintile least ready for lockdown, and most vulnerable to infection



Source: Own calculations based on 2015 SAM for South Africa (van Seventer *et al.*, 2019)



Source: Shifa, David, and Leibbrandt (2020)

Illustrative scenarios on recovery

- Analysed three speculative recovery scenarios
 - Outlook for the pandemic and economic response, domestically and globally were extremely uncertain
 - Forecasting projections had a very wide range
 - Very little data for the start of 2020, but also on the pandemic's impact thus far
 - Based on the detail of the SAM, implicit assumptions of the model, and explicit assumptions about lockdown, how could the realm of possibilities look?

Quick: Faster easing and recovery; lockdown effective in containing pandemic and people can quickly return to work with social distancing and partial lockdowns

Slow: Lockdown extended, with gradual easing and recovery. Some firms shut down, impairing productive capacity.

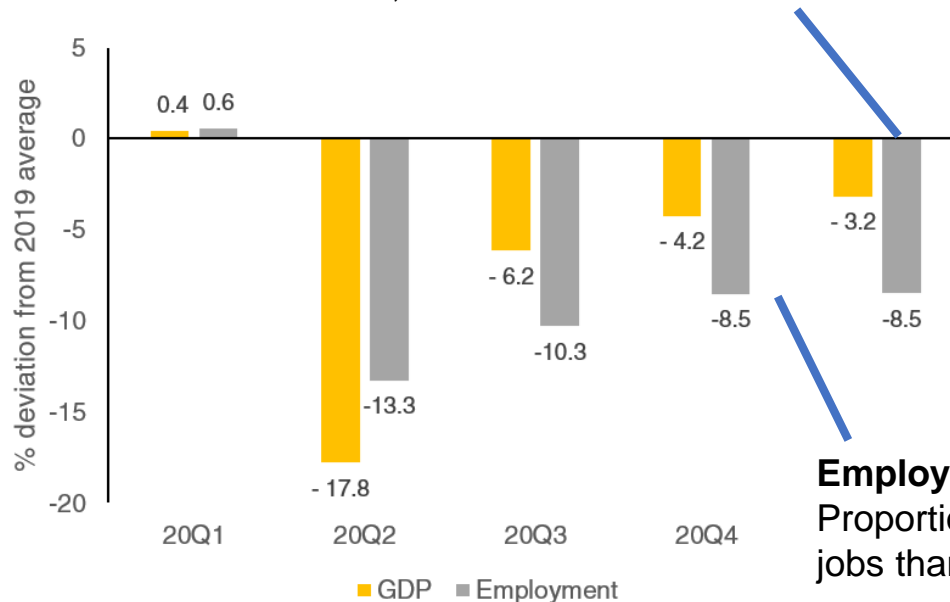
Long: Lockdown difficult to extend due to of difficult social and economic consequences. Health crisis pressured by increased caseload. Gradual and slow recovery.

	Recovery scenario			
y/y % change in 2020	Quick	<i>Actual</i>	Slow	Long
Private consumption expenditure	-5.1	-5.4	-11.4	-16.8
Government expenditure	-	0.5	-	-
Fixed investment	-11.4	-17.5	-26.6	-33.8
Exports	-8.1	-10.3	-17.6	-20.8
Imports	-7.7	-16.6	-17.3	-22.7
GDP at market prices	-5.4	-7.1	-12.1	-16.1

An uneven recovery

GDP fell more than employment, but recovered faster

A year later, a large gap still exists between what the economy can produce/employ now, and with it could in 2019

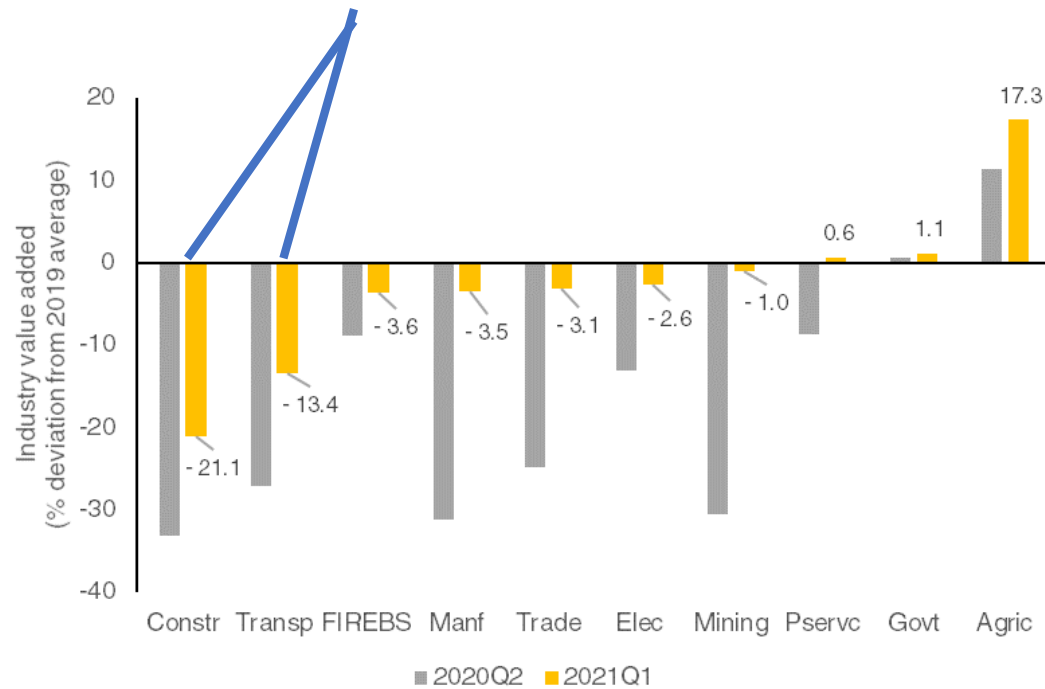


Employment elasticity likely below 1
Proportionately smaller improvement in jobs than growth

- Autonomous recovery as restrictions are loosened
- Income support at the lower end provides some stimulus, preventing a worse outcome than could have occurred
- But many workers, households and firms left behind because of remaining restrictions on contact-intensive activity, and low demand

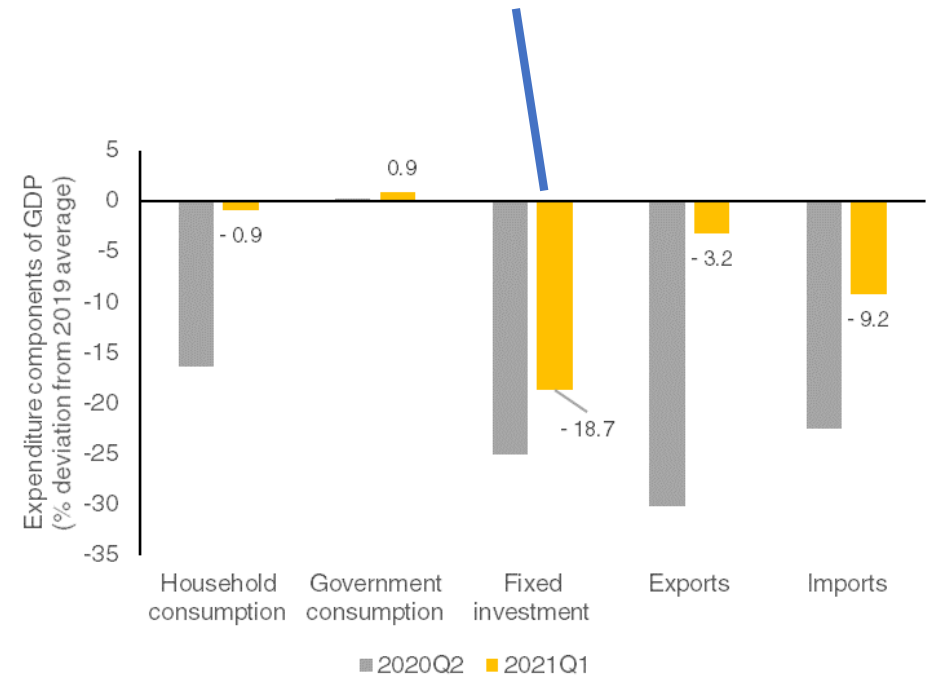
An uneven recovery

Many sectors have recovered to close to 2019 levels
Although some industries still very weak



Source: Statistics South Africa

Consumption and exports have bounced back
But not investment which, alongside very weak employment numbers, can reduce SA's growth potential



Source: Statistics South Africa

Some concluding remarks

- 1** The usefulness of a model depends on what it can analyse
 - 2** Indirect effects, and disaggregation, matter
 - 3** Scenario analysis can be useful in assessing and planning for risk and informing policy responses
 - 4** Impact of COVID-19 has been large, and recovery has been fast, but imbalanced and incomplete
 - 5** Focus on addressing structural growth constraints for stronger, fairer growth and employment
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