



MULTI-PERIOD COST-BENEFIT ANALYSIS OF SOUTH AFRICAN GOVERNMENT LOCKDOWN POLICY

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Abstract

INTRODUCTION:

Nearly 18 months after the first covid-19 lockdown it is time to count the costs and benefits. This paper serves to analyse past policy decisions in a manner that allows us to develop better policy reactions should a global pandemic ever occur again.

METHODS:

I employ a Multi-Period Cost-Benefit Analysis of South African government lockdown policy. This entails computing costs as a function of Gross Domestic Product (GDP) changes from 2019 to the periods in question. The GDP-loss metric also incorporates opportunity cost. Benefits are derived as a function of lives that could have been lost versus lives that were lost as well as hospital costs that could have been incurred versus costs actually incurred. To make it multi-periodic, I run the analysis over the entire period of lockdown as well as the various periods (waves) of the epidemic. This allows me to pin-point the exact policy decisions that were not economical and suggest better alternatives. I also run a fourth wave analysis for future policy as well as a break-even analysis to determine the costs and benefits that would have left South Africa indifferent to lockdown.

RESULTS:

I find that the most valuable age group lost to covid-19 is 55-59 years age group and on average every covid death results in 16 years of lost life (12 years when quality-adjusted for comorbidities prevalent amongst covid victims). At ZAR 37 000/year value of a life, ZAR 376 000 is lost on average with every covid-19 death.

I find that overall, the South African lockdown policy cost the economy at least ZAR 440 billion more than the benefits. However, the Multi-Period Cost Benefit Analysis reveals that only the first lockdown policies were inefficient and need to be re-evaluated so as to not repeat our mistakes. The fourth wave analysis shows that due to the deaths that have occurred and current vaccination rates there is no way a lockdown would be economically justified. The break-even analysis shows that for the actual GDP loss incurred South Africa would need over 1 million people to be at risk of death (nearly double the number of actual people at risk) for implemented lockdown policies to have been justified. The break-even analysis also shows that for the loss of life prevented South Africa should have given up only 3,3% of 2019 GDP rather than the 7,3% GDP lost.