

# Nowcasting and forecasting the economic effects of COVID-19

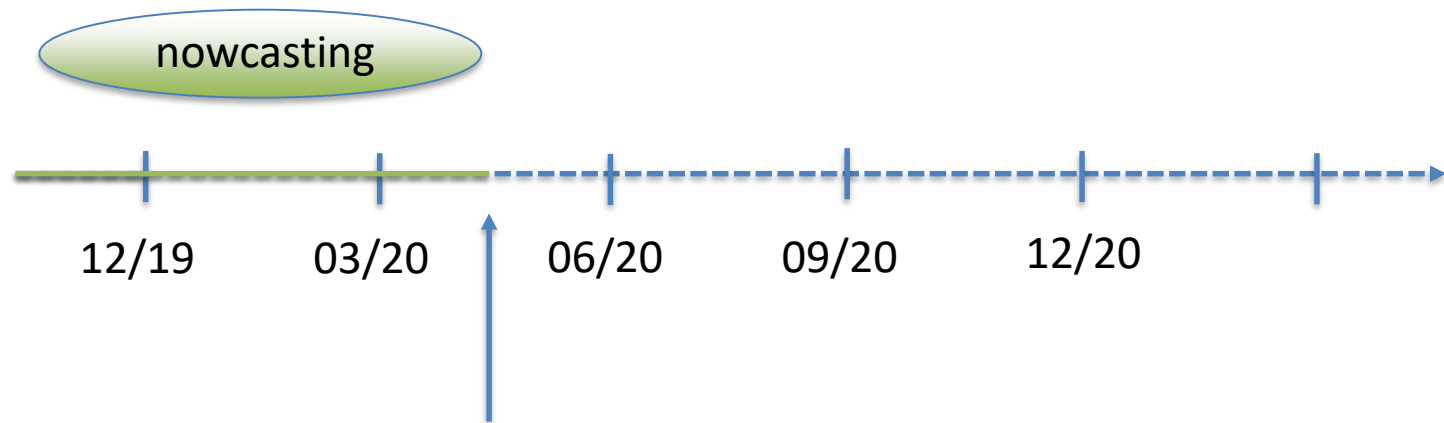
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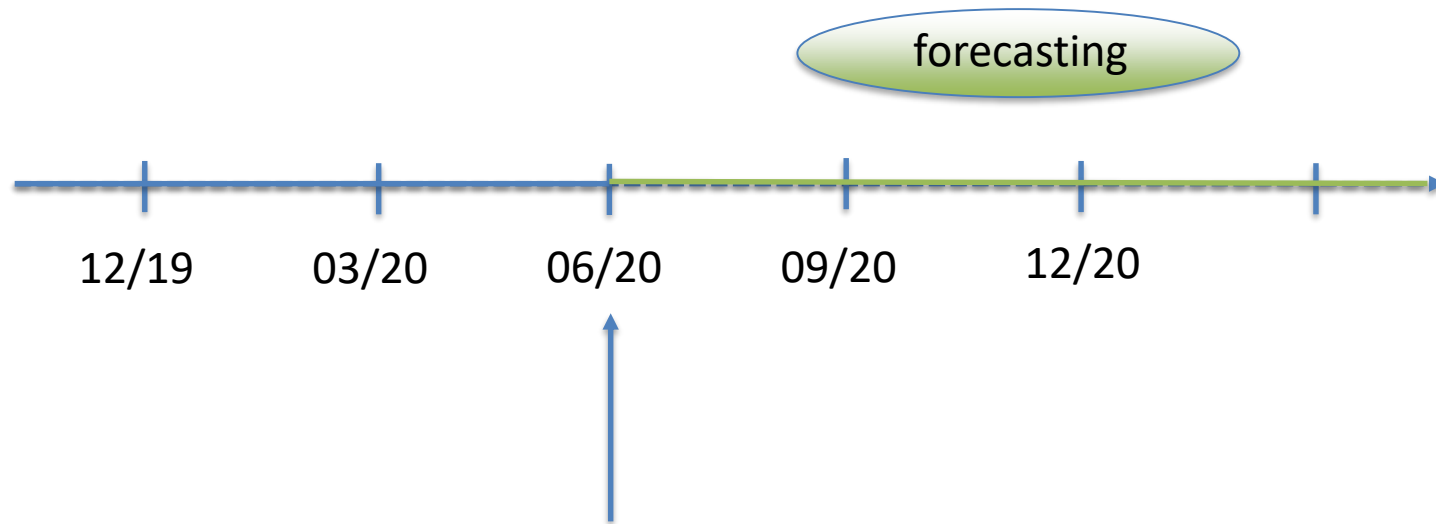


# Objectives /1



Bronka, Collado, Richiardi (2020)

# Objectives /2



Lastunen, Richiardi (2020)

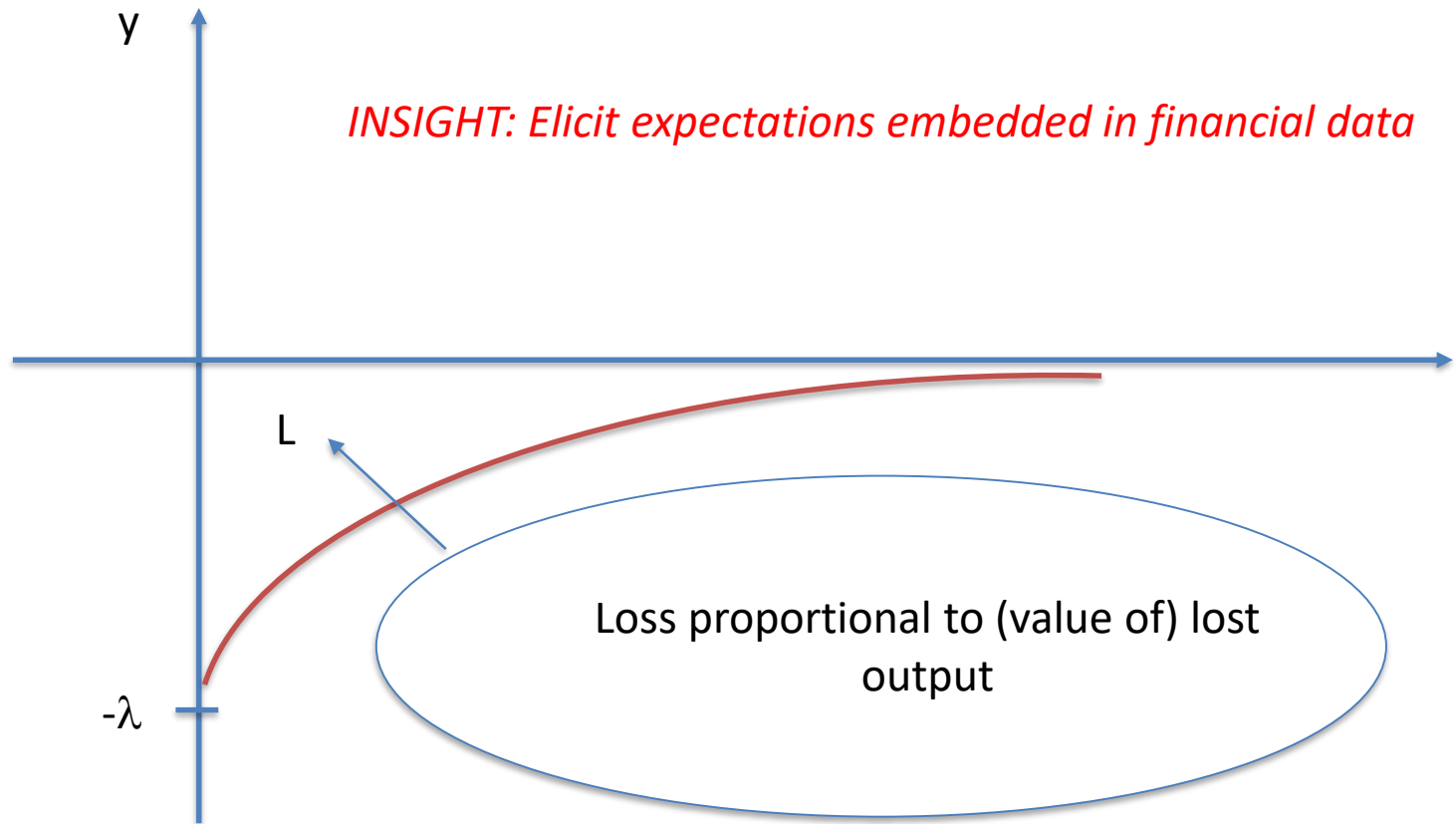
# 1. Nowcasting when NO data is available

1. **Consensus analysis** on the effects of COVID on different components of final demand
2. **Input-Output (macro) model**
  - 2016 Supply-use tables published by the ONS (64 industries)
  - Linear production function (e.g. reduction in final demand → over-production → proportional reduction in the demand for intermediate inputs...)

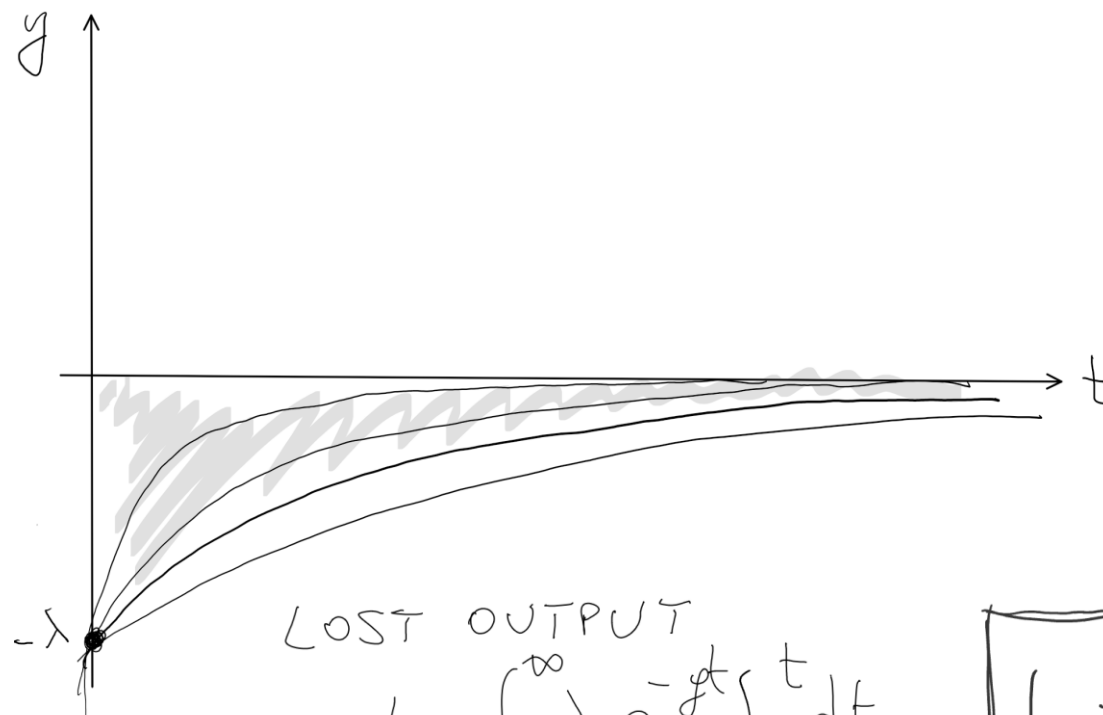
Our central scenario: **-22%** GDP

ONS data for April 2020, released June 2020: **-20%**

## 2. Forecasting recovery paths



# Forecasting recovery paths



LOST OUTPUT

$$L = \int_0^{\infty} -\lambda e^{-\delta t} g^t dt$$

$$L = -\frac{\lambda}{g - \ln(\delta)}$$

# Example: Viet Nam

## Viet Nam's Estimated Output Changes due to COVID

Industry	Type of Industry	2020
AGRICULTURE, FORESTRY AND AQUACULTURE	Domestic	-1.6%
MINING AND QUARRYING	Export	-3.7%
PROCESSING AND MANUFACTURING INDUSTRIES	Export	-0.4%
PRODUCTION AND DISTRIBUTION OF ELECTRICITY, GAS AND HEAT	Domestic	-3.2%
WATER SUPPLY; MANAGEMENT AND TREATMENT OF SEWERAGE	Domestic	-1.8%
CONSTRUCTION	Domestic	0.1%
WHOLESALE, RETAIL, AND REPAIR OF AUTOMOBILES, MOTOR VEHICLES AND MOTORCYCLES	Export	-0.5%
TRANSPORT, WAREHOUSE	Domestic	-5.5%
SERVICES OF ACCOMMODATION, FOOD AND BEVERAGE SERVICES	Export	-10.9%
INFORMATION AND COMMUNICATION	Domestic	1.9%
FINANCE, BANKING, AND INSURANCE	Domestic	1.2%
BUSINESS IN REAL ESTATES	Domestic	-4.5%
PROFESSIONALISM, SCIENCE AND TECHNOLOGY	Domestic	1.5%
ADMINISTRATION AND SUPPORTING SERVICES	Domestic	-15.7%
ACTIVITIES OF THE COMMUNIST PARTY AND SOCIO-POLITICAL ORGANIZATIONS	Domestic	1.5%
EDUCATION AND TRAINING	Domestic	0.5%
HEALTHCARE AND SOCIAL ASSISTANCE	Domestic	3.4%
ARTS, RECREATION AND ENTERTAINMENT	Domestic	-3.9%
OTHER SERVICES	Domestic	-11.8%
HOUSEHOLD EMPLOYMENT GENERATED BY HOUSEHOLDS	Domestic	-0.3%

## OUTPUT SHOCKS

		2020				2021				2022			
		Q1-2020	Q2-2020	Q3-2020	Q4-2020	Q1-2021	Q2-2021	Q3-2021	Q4-2021	Q1-2022	Q2-2022	Q3-2022	Q4-2022
Shock Assumed Zero	From Data	0%	-3%	-2%	-2%	-1%	-1%	0%	0%	0%	0%	0%	0%
		0%	-10%	-2%	-2%	-2%	-1%	-1%	-1%	-1%	-1%	-1%	0%
		0%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
		0%	-5%	-4%	-3%	-3%	-2%	-1%	0%	0%	0%	0%	0%
		0%	-3%	-2%	-2%	-1%	-1%	-1%	0%	0%	0%	0%	0%
		0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
		0%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
		0%	-9%	-7%	-6%	-5%	-3%	-2%	0%	0%	0%	0%	0%
		0%	-32%	-7%	-5%	-4%	-3%	-2%	-1%	-1%	-1%	0%	0%
		0%	3%	3%	2%	2%	1%	1%	0%	0%	0%	0%	0%
		0%	2%	2%	1%	1%	1%	0%	0%	0%	0%	0%	0%
		0%	-7%	-6%	-5%	-4%	-3%	-1%	0%	0%	0%	0%	0%
		0%	2%	2%	2%	1%	1%	0%	0%	0%	0%	0%	0%
		0%	-25%	-21%	-17%	-13%	-9%	-5%	-1%	0%	0%	0%	0%
		0%	2%	2%	2%	1%	1%	0%	0%	0%	0%	0%	0%
		0%	1%	1%	1%	0%	0%	0%	0%	0%	0%	0%	0%
		0%	5%	5%	4%	3%	2%	1%	0%	0%	0%	0%	0%
		0%	-6%	-5%	-4%	-3%	-2%	-1%	0%	0%	0%	0%	0%
		0%	-19%	-16%	-13%	-10%	-7%	-4%	-1%	0%	0%	0%	0%
		0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Based on exit trajectories from the Oxford Stringency Index (domestic sectors) or sectoral stock indices (export sectors)