Estimates of the impact of COVID-19 on poverty in Curaçao

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Context

- Curaçao Government implemented social distancing measures to contain and delay the spread of the SARS-Cov-2 virus.
- With CBS we estimate of the potential impact of these measures on labour income and its implications on
  - Income-based poverty
  - Income inequality
- Three simulation scenarios on the impacts on poverty headcount rates
  - Official poverty lines
  - International poverty thresholds

Simulating the impact of income contraction on poverty

Data sources

- Labour Force Survey (LFS)
  - Labour market indicators and main individual characteristics
  - Representative of approximately 55,000 households and 160,000 individuals.
- Official Registration of Unemployment (RU-COVID)
  - Track the number of jobs lost and identify population that could benefit from an unemployment compensation.
  - Close to 5,000 individuals registered (15 May 2020)
  - 2,700 small business owners have observed their incomes drop to zero (24 April 2020)

Scope

The estimates are based on the official information collected since the beginning of the crisis.

1. Cannot capture:
   - Specific household-level responses
2. Impacts of the crisis beyond changes in income
   - Health
   - Education
   - Nutrition
3. Distribution-sensitive and provide useful indications for policy.

Construct a profile of the individuals who self-reported as unemployed.

- Profile the RU-COVID in terms of sex, age cohort, number of children, and individual net monthly income earned.
- Identify those in the LFS who match the profile, regardless of employment status or main source of income.
- Individual-level matching both sources and filtering.
  - Filter: employed individuals (matched and unmatched) whose main income source is labour.
  - y_i assigns a value of 1 to those who satisfy the profile (matched and filtered), and 0 to those unmatched and filtered.

y_i is used to estimate the probability p_i of being unemployed.

$$p_{it} = E\left(y_i = 1 \mid \boldsymbol{X}_i\right) = \Phi\left(\boldsymbol{\beta} \cdot \boldsymbol{X}_i\right)$$

- $\boldsymbol{X}_i$ is a vector of
  - demographic variables
  - socioeconomic variables
  - labour market indicators
- $\boldsymbol{\beta}$ is a vector of the model parameters;
- Φ is the cdf of the standard normal distribution.

- Three scenarios of unemployment from new income distributions are derived.
- Simulate government response through cash compensations to individuals who have lost their job.
- The policies are then accounted into the estimates to measure their possible extent of mitigation on labour income decline.

- Takes the largest probability of being unemployed and selects individuals up to covering the quota that approximate the number of unemployed registered in the RU-COVID.

- Random selection of observations corresponding to small business owners, representing close to 44% out of the total employed small business owners in the LFS.

- The reported income in the LFS or these workers and small business owners selected is replaced with a value of zero.

Adds the assumption of potential earnings loss among those who manage to remain employed but who at the same time face a very high probability of unemployment.

- Additional observations, representative of 20,000 individuals with an estimated probability of 90% or more of being unemployed.
- Their reported income is not replaced with zero but it is assumed these individuals would experience a decline of 76% in their labour incomes (ILO 2020).

Same procedure as first scenario and assumes that the total number of unemployed in the RU-COVID would approximately affect 10,000 workers.

- Corresponds to a worst-case possibility of an extended lock-down, or repeated lock-downs on future waves of spread of the SARS-Cov-2.
- Increases the subset of selected observations in the first scenario for which reported income is replaced with a value of zero.

Mitigation policies

Two public transfers are simulated.

- A maximum of Nafl. 1,000 per month aid as unemployment benefit to individuals who lost their jobs.
  - Those who earned above Nafl. 1,000 a month receive the maximum compensation;
  - Those unemployed who earned an x amount that is less than Nafl. 1,000 a month receive that specific x amount.
- Nafl. 1,350 aimed to compensate the income decline among those business owners who request such compensation.

Measuring welfare indicators

Three adjusted income distributions are derived.

Used to quantify the effects of income losses on

- Poverty
- Income inequality
- Socio-economic stratification
  - *destitute*: $1.90 a day
  - *extreme poor*: $3.20 a day
  - *moderate poor*: $5.50 a day
  - *vulnerable*: $5.50 - 13 a day
  - *middle-class*: $13-70 a day
  - *upper-class*: higher than $70 a day
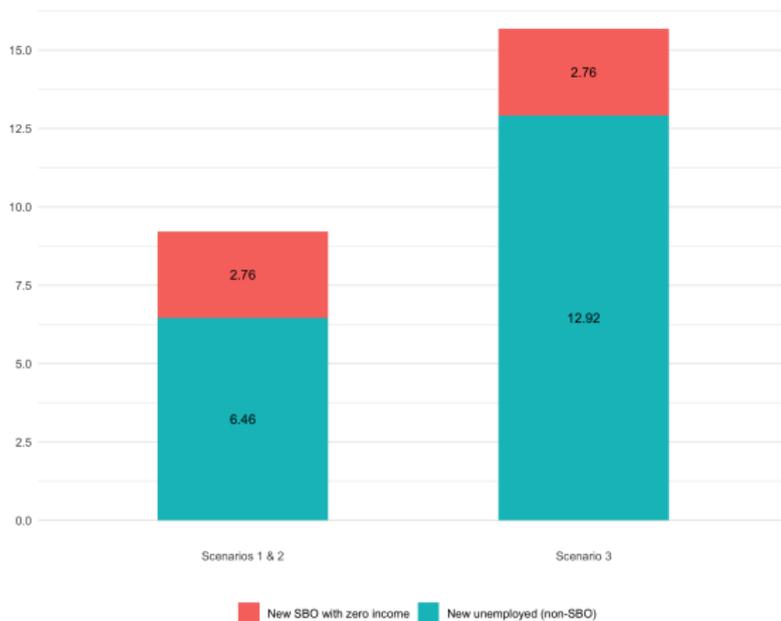
Results

Unemployment rates

Figure: Changes in unemployment rates relative to pre-crisis rate (percentage points)

Estimates of official poverty
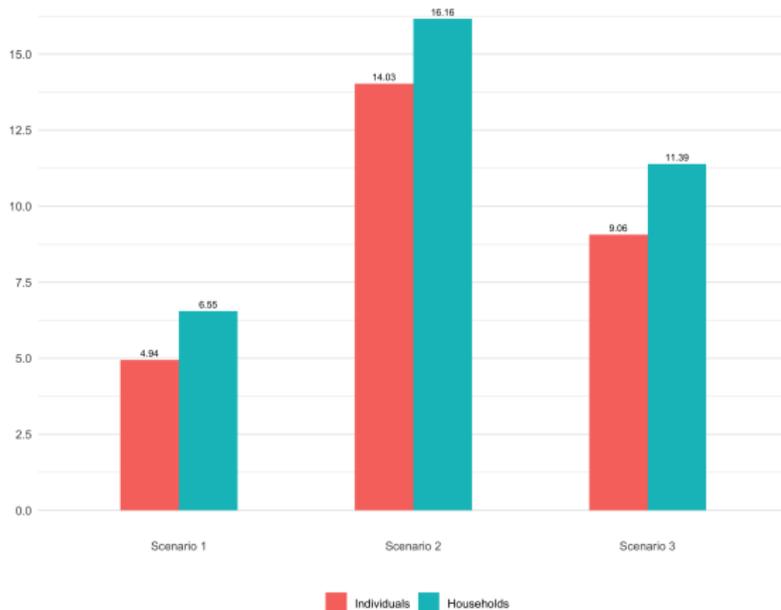## as a result of unemployment shocks

Figure: Changes in unemployment rates relative to pre-crisis rate (percentage points)

Changes in the incidence of poverty
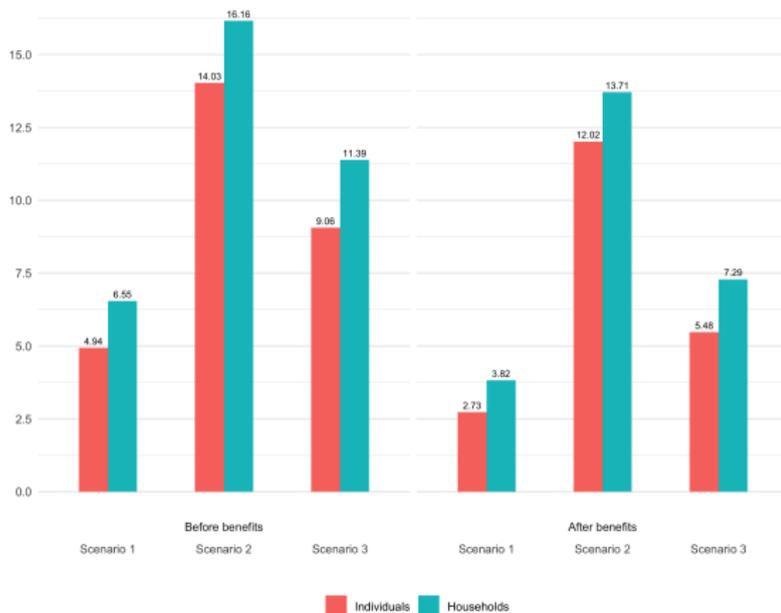## as result of shocks and after compensating measures

Figure: Changes in unemployment rates relative to pre-crisis rate (percentage points)

Table 1: Incidence of poverty and its changes, pre-crisis and simulated as a result of shocks and after cash compensations (% and thousands of households and individuals)

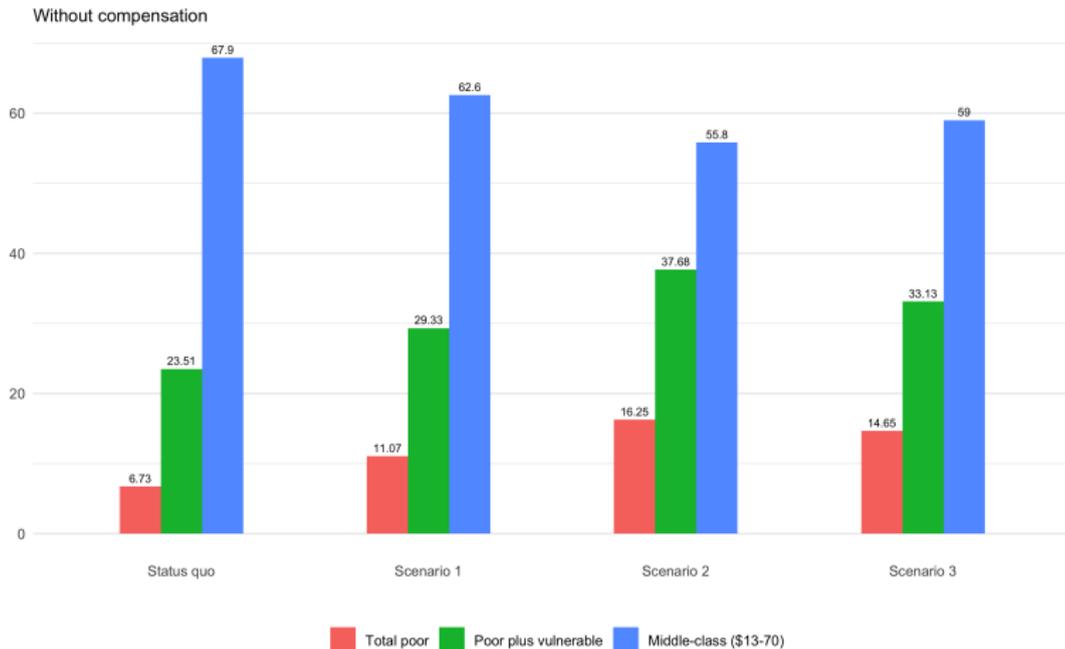|	Households				Population			
	Incidence		*Changes*		*Incidence*		*Changes*	
	%	*thous.*	*p.p.*	*thous.*	*%*	*thous.*	*p.p.*	*thous.*
Status quo	31.7	17.4	–	–	32.1	47.7	–	–
a. COVID-19's social distancing shocks with no compensation								
Scenario 1	38.2	20.9	6.6	3.6	37.0	55.0	4.9	7.3
Scenario 2	47.8	26.2	16.2	8.9	46.1	68.5	14.0	20.8
Scenario 3	43.1	23.6	11.4	6.2	41.2	61.1	9.1	13.4
b. COVID-19's social distancing shocks with cash compensation								
Scenario 1	35.5	19.4	3.8	2.1	34.8	51.7	2.7	4.1
Scenario 2	45.4	24.9	13.7	7.5	44.1	65.5	12.0	17.8
Scenario 3	39.0	21.3	7.3	4.0	37.6	55.8	5.5	8.1

Income inequality
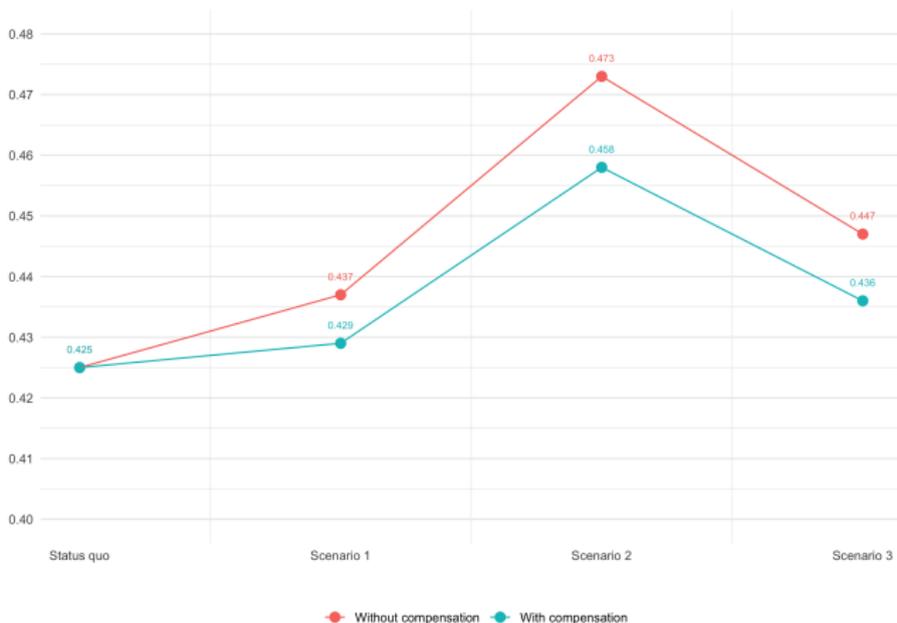
Figure: Gini coefficient, pre-crisis and simulated as a result of shocks and after cash compensations

Income group stratification

based on international standards

Without compensation

Legend: Total poor, Poor plus vulnerable, Middle-class ($13-70)

	Status quo	Scenario 1	Scenario 2	Scenario 3
Total poor	6.73	11.07	16.25	14.65
Poor plus vulnerable	23.51	29.33	37.68	33.13
Middle-class ($13-70)	67.9	62.6	55.8	59

Income group stratification

based on international standards

With compensation

Income group stratification
based on international standards

	Without compensation				With compensation			
	Status quo	Scenario 1	Scenario 2	Scenario 3	Status quo	Scenario 1	Scenario 2	Scenario 3
Total poor	6.73	11.07	16.25	14.65	6.73	6.83	11.31	7.2
Poor plus vulnerable	23.51	29.33	37.68	33.13	23.51	25.46	32.96	27.12
Middle-class ($13-70)	67.9	62.6	55.8	59	67.9	66.3	60.4	64.9
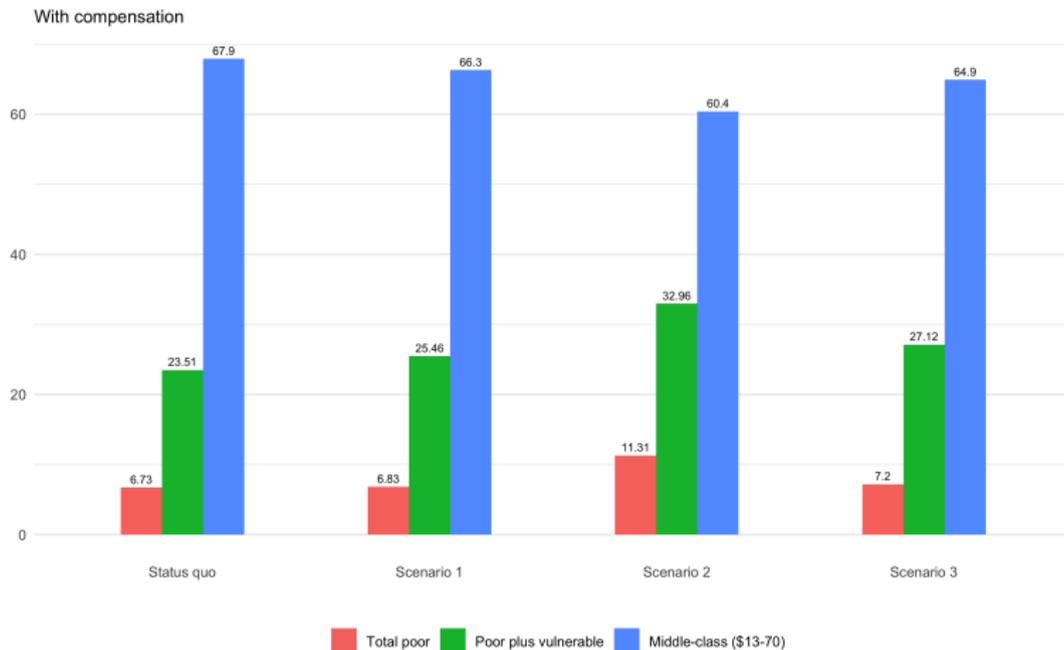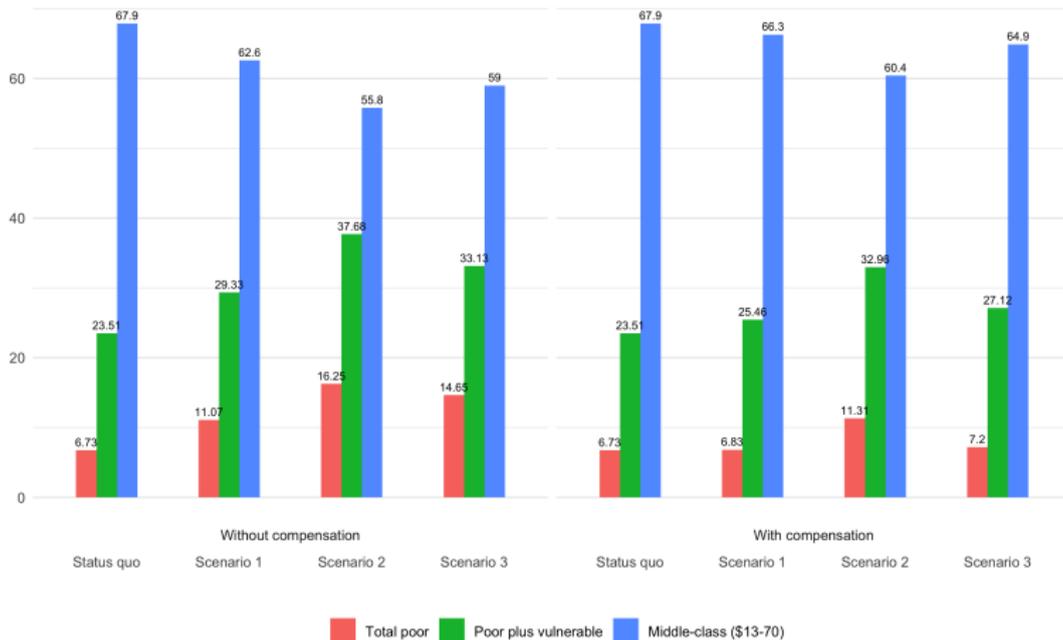
Summing up

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Official poverty

- Could increase: 6.6 and by 4.9 percentage points, at the household- and individual-level.
- Cash transfers could mitigate the effect: 2.7 and 2.2 percentage points lower than in the absence of benefits, at the household- and individual-level.

International standards

- The share of individuals living in poverty could increase by 4.3 percentage points after the shock.
- Effects concentrated at the bottom: 3.6 percentage points increase in destitution.
- Cash benefits would mitigate the effects on the poor and only a minority of middle-class would move downwards to vulnerability.