

Supplementary Materials

1 Measuring the CPI

1. The steps:

- (a) Survey consumers to determine the relevant “basket of goods.”
- (b) Record the price of each good in each year.
- (c) Compute the cost of the “basket” in each year.
- (d) Choose a base year and compute the CPI for the current year
- (e) Compute the inflation rate as the percentage change in the CPI from one year to the next.

2. Measuring errors¹

(a) **Substitution bias**

- In any given year, the prices of some goods rise faster than others.
- CPI is based on the implicit assumption that consumers will not reduce the quantity of shirts purchased.
- Fixed basket problem: consumers tend to substitute less expensive goods for more expensive goods.
- Overstates the true change in the cost of living.

(b) **Unmeasured change in quality**

- Goods improve/deteriorate in quality over time.
 - car gas mileage improves
 - cell phones have better displays
 - CPU becomes faster
- If the price of a good rises because the quality has improved, then that is **not** inflation.
- Any quality *improvements* for which the BLS does not account for will cause the CPI to overstate inflation.

(c) **Introduction of new goods**

- Consumer has more choices, people like variety
 - preferences are convex
- Regardless of price, the introduction of new goods makes consumers better-off by expanding their set of opportunities.
- The cost of living goes down when new goods are introduced, but that effect does not get captured by the CPI.
- Overstates the true change in the cost of living.

¹ Armknecht, Lane, and Stewart (1996).

2 CPI v.s GDP Deflator

	Consumer Price Index (CPI)	GDP Deflator
Price Indicator	Reflects the prices of all goods consumed domestically	Reflects the prices of all goods produced domestically
Price of imported Good rises	Affected	Not affected (Consumption↑, Net export↓)
Price of domestically-produced capital good rises	Not affected	Affected
Price of goods	fixed basket goods	currently produced goods
