

The Bread Economy

This economy has three firms and four households. It produces one final good: bread.

Firm transactions

Firm	Sells	Sold to	Sales	Intermediate goods bought
Farm	Wheat	Mill	\$25	none
Mill	Flour	Bakery	\$60	\$25 of wheat
Bakery	Bread	Households	\$100	\$60 of flour

Household income for the year

Household	Income sources
Ana	Wages as a farmhand: \$15. Interest on money she lent the Mill: \$5.
Ben	Wages at the Mill: \$20. Profit as owner of the Farm: \$5. Profit as owner of the Bakery: \$5.
Carla	Wages at the Bakery: \$25. Rent from the land she leases to the Farm: \$5.
Dev	Rent from the building he leases to the Bakery: \$10. Profit as owner of the Mill: \$10.

1. **Expenditure approach.** What is GDP? Which purchases count, which do not, and why?

Solution: Only the bread is a final good, so $GDP = C = \$100$. The wheat and flour are intermediate goods. Counting them would count the same production more than once ($25 + 60 + 100 = \$185$).

2. **Product (value-added) approach.** Find each firm's value added, then GDP.

Solution:

Firm	Sales – Intermediate	Value added
Farm	$25 - 0$	25
Mill	$60 - 25$	35
Bakery	$100 - 60$	40
GDP		\$100

3. **Income approach.** Find each household's total income, then GDP.

Solution:

Household	Sources	Total
Ana	$15 + 5$	20
Ben	$20 + 5 + 5$	30
Carla	$25 + 5$	30
Dev	$10 + 10$	20
GDP		\$100

The product side gives 25/35/40. The income side gives 20/30/30/20. There are even different numbers of rows, but both add to \$100.

4. Regroup all of the income in the economy by type: wages, rent, interest, and profit.

Solution: Wages ($15 + 20 + 25$) = 60, Rent ($5 + 10$) = 15, Interest = 5, Profit ($5 + 5 + 10$) = 20.

$$60 + 15 + 5 + 20 = \$100$$

5. No household's income equals any firm's value added. Why do the three approaches still give the same GDP?

Solution: Each dollar of value a firm adds goes to someone as income: wages to workers, rent to landowners, interest to lenders, and whatever is left as profit to owners. The money just flows to different people than the firm that created it. Tracing each payment back to the firm that made it recovers the match: the Farm pays $15 + 5 + 5 = 25$, the Mill pays $20 + 5 + 10 = 35$, and the Bakery pays $25 + 10 + 5 = 40$.