Economists observed the only five residents of a very small economy and estimated each one's consumer spending at various levels of current disposable income.

The accompanying table shows each resident's consumer spending at three income levels.

|  |  |  |  |
| --- | --- | --- | --- |
| Individual consumer spending | First tertile | Second tertile | Third tertile |
| Income | $0 | $20,000 | $40,000 |
| Andre | 1,000 | 15,000 | 29,000 |
| Barbara | 2,500 | 12,500 | 22,500 |
| Casey | 2,000 | 20,000 | 38,000 |
| Declan | 5,000 | 17,000 | 29,000 |
| Elena | 4,000 | 19,000 | 34,000 |

a) What is each resident's consumption function? What is the marginal propensity to consume for each resident?

b) What is the economy's aggregate consumption function? What is the marginal propensity to consume for the economy?

a) Consumption function c = A+MPCxYd

at income 0 =

since MPC = Δ Consumer spending C / Δ Disposable income Yd

for example for andrea ΔC is 14000 whereas Δyd is same for all that is 20,000

Andre = 1000+0.70xYd

Barbara = 2500+0.5xYd

Casey = 2000+0.9xYd

Declan = 5000+0.6xYd

Elena = 4000+0.75xYd

b) aggregate economy consumption function – add all the individual consumption spending at each level of income which are 0 zero, 20,000, 40,000.

At 0 zero = 1000+2500+2000+5000+4000 =14,500

At 20,000 income = 15,000+12,500+20,000+17,000+19,000 =83,500

At 40,000 income =29,000+22,500+38,000+29,000+34,000 =152,000

Aggregate consumer income – sum of all individuals income is 100,000 and 200,000

MPC = Δ C / Δ Y

Δ C = 83,500 – 14,500 = 69,000

Δ Y = 200,000 – 100,000 = 100,000

MPC = Δ C / Δ Y

MPC = 69,000 / 100,000 = 0.69

MPS = 1 – MPC = 1 – 0.69 = 0.31

Economy function = A+MPCxY

= 14,500 + 0.69 x Yd

---------------------x------------------------------------------x--------------------------------------------x---------------------------

In an economy with no government and no foreign sectors, autonomous consumer spending is $250 billion, planned investment spending is $350 billion, and the marginal propensity to consume is 2/3.

a) Plot the aggregate consumption function and planned aggregate spending.

b) What is the unplanned inventory investment when real GDP equals $600 billion?

c) What is Y\*, income-expenditure equilibrium GDP?

d) If planned investment spending rises to $450 billion, what will be the new Y\*?

1. A=$250 bn

MPC = 2/3

So, aggregate economy consumption function is = 250+(2/3)xYd

And planned aggregate spending is AEplanned = [CS]+Iplanned (Ip ;- investment spending)

= [250+(2/3)xYd]+350

= 600+(2/3)xYd

1. Given data: Real GDP = $600bn, find? unplanned inventory investment

Unplanned inventories = GDP **–** AEp

AEplanned = 600 +(2/3)x600

= 600+400 =$1000bn

Unplanned inventories = 600 **–** 1000 = **–** 400

1. Find Y\* i.e income expenditure equilibrium GDP

Y\* = GDP = AEplanned

GDP = 600+2/3GDP

* GDP – 2/3 = 600
* GDP = 1800

1. Y\* ? when Planned investment spending is raised to $450bn

Ok so increase is $100bn and Investment = $450bn

Y\* ? AEplanned = CS + New **I**planned

= 250 +2/3 yd + (450)

= 700+2/3 yd

*So new,* Y\*

GDP = AEplanned

GDP = 700+2/3 GDP (yd)

1/3 GDP = 700

GDP = 21000bn

Also

Value of multiplier: 1/(1-MPC) = 1/(1-2/3) = 1/(1/3) => 3

*Real GDP + spending will rise: 3x100bn = 300bn*

*New.Inc+Old.GDP*

*300bn+1800bn = $2100bn*

----------------------x--------------------------------------------x-------------------------------------------------x-------------------