Exchange economy invariant
Exchange economy pairwise
Competitive economy invariant

Exchange economy

Two goods x and y, firm i and consumer j
Firm-consumer, consumer-firm, firm-firm, consumer-consumer to obtain mutual advantage
---
i, j
x, y
qx > 0
qy > 0
pxm > 0
pym > 0
px > 0
py > 0
m ~ R
---
i - qx, pxm / j - qx, pxm
i - qy, pym / j - qy, pym
(a) [Isolated]
mi = qx*pxm + qy*pym > 0
mj = - qx*pxm - qy*pym < 0
(b) [Non-isolated]
mi = qx*px + qx*pxm + qy*py + qy*pym = qx*(px + pxm) + qy*(py + pym) > 0
mj = - qx*px - qx*pxm - qy*py - qy*pym = - qx*(px + pxm) - qy*(py + pym) < 0
---
mi + mj = 0
Exchange economy invariant
---
i - qy, pym / j - qx, pxm
i - qx, pxm / j - qy, pym
(1)
(a)
mi = qy*pym > 0
mj = - qx*pxm < 0
(b)
mi = qy*py + qy*pym = qy*(py + pym) > 0
mj = - qx*px - qx*pxm = - qx*(px + pxm) < 0
(2)
(a)
mi = qx*pxm > 0
mj = - qy*pym < 0
(b)
mi = qx*px + qx*pxm = qx*(px + pxm) > 0
mj = - qy*py - qy*pym = - qy*(py + pym) < 0
---
mi1 + mj2 = 0
mi2 + mj1 = 0
Exhange economy pairwise

Competitive economy

Firm i, consumer j, good x
Firm and consumer do not consider
their actions to have any effect on prices
---
i, j
x
q > 0
pm > 0
p > 0

m ~ R
(a)
mi = q*p > 0
mj = - q*p < 0
(b)
mi = q*p + q*pm = q*(p + pm) > 0
mj = - q*p - q*pm = - q*(p + pm) < 0
---
mi + mj = 0
Competitive economy invariant