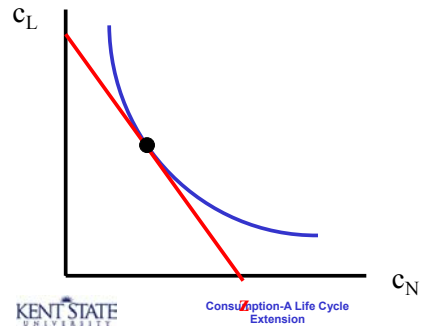


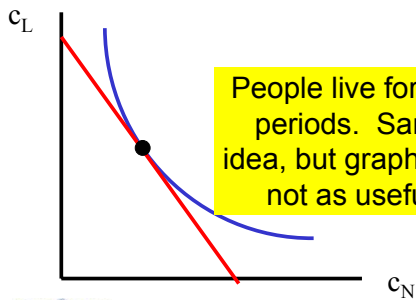
# Consumption

## A Life Cycle Extension

# The Basic Fisherian Model



# The Basic Fisherian Model



People live for four periods. Same idea, but graphs are not as useful.

# The Basic Fisherian Model

Our consumption function

$$c_1 = \frac{1}{4} z_1$$

# The Basic Fisherian Model

$$c_1 = \frac{1}{4} z_1$$
$$c_2 = \frac{1}{3} z_2$$

# The Basic Fisherian Model

$$c_1 = \frac{1}{4} z_1$$
$$c_2 = \frac{1}{3} z_2$$
$$c_3 = \frac{1}{2} z_3$$

## The Basic Fisherian Model

$$c_1 = \frac{1}{4} z_1$$

$$c_2 = \frac{1}{3} z_2$$

$$c_3 = \frac{1}{2} z_3$$

$$c_4 = z_4$$

## The Basic Fisherian Model

$$\log(c_1) + \log(c_2) + \log(c_3) + \log(c_4)$$

## The Basic Fisherian Model

$$\log(c_1) + \log(c_2) + \log(c_3) + \log(c_4)$$

$$c_1 + c_2 \frac{1}{1+r} + c_3 \left( \frac{1}{1+r} \right)^2 + c_4 \left( \frac{1}{1+r} \right)^3 = z$$

$$z = y_1 + y_2 \frac{1}{1+r} + y_3 \left( \frac{1}{1+r} \right)^2 + y_4 \left( \frac{1}{1+r} \right)^3$$

## The Basic Fisherian Model

$$\log(c_1) + \log(c_2) + \log(c_3) + \log(c_4)$$

$$v_1 \log(c_1) + v_2 \log(c_2) + v_3 \log(c_3) + v_4 \log(c_4)$$

## Some Assumptions

Period	Wage Rate
1	0
2	300,000
3	630,000
4	0

r = 50%

## Period One Calculations

	(1)
(1) Initial Assets	0
(2) Interest Income	0
(3) Financial Net Worth	0
(4) Wage Income	0
(5) PV of Wage Income	480,000
(6) Wealth	480,000
(7) Consumption	120,000
(8) Net Income	0
(9) Saving	120,000
(10) Assets, End of Period	120,000

## Period One Calculations

	(1)
(1) Initial Assets	0
(2) Interest Income	0
(3) Financial Net Worth	0
(4) Wage Income	0
(5) PV of Wage Income	480,000
(6) Wealth	480,000
(7) Consumption	120,000
(8) Net Income	0
(9) Saving	120,000
(10) Assets, End of Period	120,000

$$z = \frac{1}{1+0.5} 300,000 + \frac{1}{(1+0.5)^2} 630,000$$

## Period One Calculations

	(1)
(1) Initial Assets	0
(2) Interest Income	0
(3) Financial Net Worth	0
(4) Wage Income	0
(5) PV of Wage Income	480,000
(6) Wealth	480,000
(7) Consumption	120,000
(8) Net Income	0
(9) Saving	120,000
(10) Assets, End of Period	120,000

$$c = \frac{1}{4} z$$

## Period One Calculations

	(1)
(1) Initial Assets	0
(2) Interest Income	0
(3) Financial Net Worth	0
(4) Wage Income	0
(5) PV of Wage Income	480,000
(6) Wealth	480,000
(7) Consumption	120,000
(8) Net Income	0
(9) Saving	120,000
(10) Assets, End of Period	120,000

## Period One Calculations

	(1)
(1) Initial Assets	0
(2) Interest Income	0
(3) Financial Net Worth	0
(4) Wage Income	0
(5) PV of Wage Income	480,000
(6) Wealth	480,000
(7) Consumption	120,000
(8) Net Income	0
(9) Saving	120,000
(10) Assets, End of Period	120,000

## Period Two Calculations

	(1)	(2)
(1) Initial Assets	0	120,000
(2) Interest Income	0	60,000
(3) Financial Net Worth	0	180,000
(4) Wage Income	0	300,000
(5) PV of Wage Income	480,000	630,000
(6) Wealth	480,000	480,000
(7) Consumption	120,000	180,000
(8) Net Income	0	240,000
(9) Saving	120,000	60,000
(10) Assets, End of Period	120,000	60,000

## Period Two Calculations

	(1)	(2)
(1) Initial Assets	0	120,000
(2) Interest Income	0	60,000
(3) Financial Net Worth	0	180,000
(4) Wage Income	0	300,000
(5) PV of Wage Income	480,000	630,000
(6) Wealth	480,000	480,000
(7) Consumption	120,000	180,000
(8) Net Income	0	240,000
(9) Saving	120,000	60,000
(10) Assets, End of Period	120,000	60,000

## Period Two Calculations

	(1)	(2)
(1) Initial Assets	0	120,000
(2) Interest Income	0	60,000
(3) Financial Net Worth	0	180,000
(4) Wage Income	0	300,000
(5) PV of Wage Income	480,000	720,000
(6) Wealth	480,000	540,000
(7) Consumption	120,000	180,000
(8) Net Income	0	240,000
(9) Saving	120,000	60,000
(10) Assets, End of Period	120,000	60,000

$300,000 + \frac{1}{1+.5} 630,000$

## Period Two Calculations

	(1)	(2)
(1) Initial Assets	0	120,000
(2) Interest Income	0	60,000
(3) Financial Net Worth	0	180,000
(4) Wage Income	0	300,000
(5) PV of Wage Income	480,000	720,000
(6) Wealth	480,000	540,000
(7) Consumption	120,000	180,000
(8) Net Income	0	240,000
(9) Saving	120,000	60,000
(10) Assets, End of Period	120,000	60,000

$c = \frac{1}{3} z$

## Period Two Calculations

	(1)	(2)
(1) Initial Assets	0	120,000
(2) Interest Income	0	60,000
(3) Financial Net Worth	0	180,000
(4) Wage Income	0	300,000
(5) PV of Wage Income	480,000	720,000
(6) Wealth	480,000	540,000
(7) Consumption	120,000	180,000
(8) Net Income	0	240,000
(9) Saving	120,000	60,000
(10) Assets, End of Period	120,000	60,000

## Period Two Calculations

	(1)	(2)
(1) Initial Assets	0	120,000
(2) Interest Income	0	60,000
(3) Financial Net Worth	0	180,000
(4) Wage Income	0	300,000
(5) PV of Wage Income	480,000	720,000
(6) Wealth	480,000	540,000
(7) Consumption	120,000	180,000
(8) Net Income	0	240,000
(9) Saving	120,000	60,000
(10) Assets, End of Period	120,000	60,000

## Period Three Calculations

	(1)	(2)	(3)
(1) Initial Assets	0	120,000	60,000
(2) Interest Income	0	60,000	30,000
(3) Financial Net Worth	0	180,000	90,000
(4) Wage Income	0	300,000	630,000
(5) PV of Wage Income	480,000	720,000	630,000
(6) Wealth	480,000	540,000	540,000
(7) Consumption	120,000	180,000	270,000
(8) Net Income	0	240,000	600,000
(9) Saving	120,000	60,000	330,000
(10) Assets, End of Period	120,000	60,000	270,000

## Period Three Calculations

	(1)	(2)	(3)
(1) Initial Assets	0	120,000	60,000
(2) Interest Income	0	60,000	30,000
(3) Financial Net Worth	0	180,000	90,000
(4) Wage Income	0	300,000	630,000
(5) PV of Wage Income	480,000	720,000	630,000
(6) Wealth	480,000	540,000	540,000
(7) Consumption	120,000	180,000	270,000
(8) Net Income	0	240,000	600,000
(9) Saving	120,000	60,000	330,000
(10) Assets, End of Period	120,000	60,000	270,000

## Period Three Calculations

	(1)	(2)	(3)
(1) Initial Assets	0	120,000	60,000
(2) Interest Income	0	60,000	30,000
(3) Financial Net Worth	0	180,000	90,000
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(6) Wealth	480,000	540,000	540,000
(7) Consumption	120,000	180,000	270,000
(8) Net Income	0	240,000	600,000
(9) Saving	120,000	60,000	330,000
(10) Assets, End of Period	120,000	60,000	270,000

$$C_3 = \frac{1}{2} Z_3$$

## Period Three Calculations

	(1)	(2)	(3)
(1) Initial Assets	0	120,000	60,000
(2) Interest Income	0	60,000	30,000
(3) Financial Net Worth	0	180,000	90,000
(4) Wage Income	0	300,000	630,000
(5) PV of Wage Income	480,000	720,000	630,000
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(8) Net Income	0	240,000	600,000
(9) Saving	120,000	60,000	330,000
(10) Assets, End of Period	120,000	60,000	270,000

## Period Four Calculations

	(1)	(2)	(3)	(4)
(1) Initial Assets	0	120,000	60,000	270,000
(2) Interest Income	0	60,000	30,000	135,000
(3) Financial Net Worth	0	180,000	90,000	405,000
(4) Wage Income	0	300,000	630,000	0
(5) PV of Wage Income	480,000	720,000	630,000	0
(6) Wealth	480,000	540,000	540,000	405,000
(7) Consumption	120,000	180,000	270,000	405,000
(8) Net Income	0	240,000	600,000	135,000
(9) Saving	120,000	60,000	330,000	270,000
(10) Assets, End of Period	120,000	60,000	270,000	0

## Period Four Calculations

	(1)	(2)	(3)	(4)
(1) Initial Assets	0	120,000	60,000	270,000
(2) Interest Income	0	60,000	30,000	135,000
(3) Financial Net Worth	0	180,000	90,000	405,000
(4) Wage Income	0	300,000	630,000	0
(5) PV of Wage Income	480,000	720,000	630,000	0
(6) Wealth	480,000	540,000	540,000	405,000
(7) Consumption	120,000	180,000	270,000	405,000
(8) Net Income	0	240,000	600,000	135,000
(9) Saving	120,000	60,000	330,000	270,000
(10) Assets, End of Period	120,000	60,000	270,000	0

## Period Four Calculations

	(1)	(2)	(3)	(4)
(1) Initial Assets	0	120,000	60,000	270,000
(2) Interest Income	0	60,000	30,000	135,000
(3) Financial Net Worth	0	180,000	90,000	405,000
(4) Wage Income	0	300,000	630,000	0
(5) PV of Wage Income	480,000	720,000	630,000	0
(6) Wealth	480,000	540,000	540,000	405,000
(7) Consumption	120,000	180,000	270,000	405,000
(8) Net Income	0	240,000	600,000	135,000
(9) Saving	120,000	60,000	330,000	270,000
(10) Assets, End of Period	120,000	60,000	270,000	0

## And in Conclusion...

- This lecture focuses on mechanics.
- Later lectures focus on ideas.

End

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