

Wealth and Taxes- Calculations

	(1)	(2)	(3)
(1) Initial Assets	0	120,600	0
(2) Interest Income	0	30,150	-19,132
(3) Financial Net Worth	0	150,750	95,625
(4) Wage Income	0	225,000	472,500
(5) PV of Wage Income	482,400	603,000	472,500
(6) Wealth	482,400	452,250	376,875
(7) Consumption	120,600	150,750	188,438
(8) Net Income	0	194,850	453,375
(9) Saving	361,800	44,100	288,938
(10) Assets, End of Period	361,800	188,438	0

Some Assumptions

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

$r = 50\%$

Some Assumptions

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

$\tau_w = 0.25$

$\tau_r = 0.50$

$r = 50\%$

Some Assumptions

Period	Wage Rate
1	0
2	300,000 <i>225,000</i>
3	630,000 <i>472,500</i>
4	0

$\tau_w = 0.25$

$\tau_r = 0.50$

$r = 50\%$

Some Assumptions

Period	Wage Rate
1	0
2	300,000 <i>225,000</i>
3	630,000

$\tau_w = 0.25$

$\tau_r = 0.50$

$r = 50\%$

$r_{after-tax} = (1 - \tau_r)r = 0.25$

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	482,400
(6) Wealth	482,400
(7) Consumption	120,600
(8) Net Income	0
(9) Saving	120,600
(10) Assets, End of Period	120,600

Period One Calculations

$$z = \frac{1}{1+0.25} 225,000 + \frac{1}{(1+0.25)^2} 472,500$$

(1) Initial Assets	0
(2) Interest Income	0
(3) Financial Net Worth	0
(4) Wage Income	0
(5) PV of Wage Income	482,400
(6) Wealth	482,400
(7) Consumption	120,600
(8) Net Income	0
(9) Saving	120,600
(10) Assets, End of Period	120,600

Period One Calculations

(1) Initial Assets	0	(1)
(2) Interest Income	0	
(3) Financial Net Worth	0	
(4) Wage Income	0	
(5) PV of Wage Income	482,400	
(6) Wealth	482,400	
(7) Consumption	120,600	
(8) Net Income	0	
(9) Saving	120,600	
(10) Assets, End of Period	120,600	

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

Period One Calculations

(1) Initial Assets	0	(1)
(2) Interest Income	0	
(3) Financial Net Worth	0	
(4) Wage Income	0	
(5) PV of Wage Income	482,400	
(6) Wealth	482,400	
(7) Consumption	120,600	
(8) Net Income	0	
(9) Saving	120,600	
(10) Assets, End of Period	120,600	

Period One Calculations

(1) Initial Assets	0	(1)
(2) Interest Income	0	
(3) Financial Net Worth	0	
(4) Wage Income	0	
(5) PV of Wage Income	482,400	
(6) Wealth	482,400	
(7) Consumption	120,600	
(8) Net Income	0	
(9) Saving	120,600	
(10) Assets, End of Period	120,600	

Period Two Calculations

(1) Initial Assets	0	(1)	(2)
(2) Interest Income	0		30,150
(3) Financial Net Worth	0		150,750
(4) Wage Income	0		225,000
(5) PV of Wage Income	482,400		603,000
(6) Wealth	482,400		452,250
(7) Consumption	120,600		150,750
(8) Net Income	0		194,850
(9) Saving	120,600		44,100
(10) Assets, End of Period	120,600		76,500

Period Two Calculations

(1) Initial Assets	0	(1)	(2)
(2) Interest Income	0		30,150
(3) Financial Net Worth	0		150,750
(4) Wage Income	0		225,000
(5) PV of Wage Income	482,400		603,000
(6) Wealth	482,400		452,250
(7) Consumption	120,600		150,750
(8) Net Income	0		194,850
(9) Saving	120,600		44,100
(10) Assets, End of Period	120,600		76,500

Period Two Calculations

	(1)	(2)
(1) Initial Assets	0	120,600
(2) Interest Income	0	30,150
(3) Financial Net Worth	0	150,750
(4) Wage Income	0	225,000
(5) PV of Wage Income	482,400	603,000
(6) Wealth	482,400	452,250
(7) Consumption	120,600	150,750
(8) Net Income	0	194,850
(9) Saving	120,600	44,100
(10) Assets, End of Period	120,600	76,500

$225,000 + \frac{1}{1+.25} = 472,500$

Period Two Calculations

	(1)	(2)
(1) Initial Assets	0	120,600
(2) Interest Income	0	30,150
(3) Financial Net Worth	0	150,750
(4) Wage Income	0	225,000
(5) PV of Wage Income	482,400	603,000
(6) Wealth	482,400	452,250
(7) Consumption	120,600	150,750
(8) Net Income	0	194,850
(9) Saving	120,600	44,100
(10) Assets, End of Period	120,600	76,500

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

Period Two Calculations

	(1)	(2)
(1) Initial Assets	0	120,600
(2) Interest Income	0	30,150
(3) Financial Net Worth	0	150,750
(4) Wage Income	0	225,000
(5) PV of Wage Income	482,400	603,000
(6) Wealth	482,400	452,250
(7) Consumption	120,600	150,750
(8) Net Income	0	194,850
(9) Saving	120,600	44,100
(10) Assets, End of Period	120,600	76,500

Period Two Calculations

	(1)	(2)
(1) Initial Assets	0	120,600
(2) Interest Income	0	30,150
(3) Financial Net Worth	0	150,750
(4) Wage Income	0	225,000
(5) PV of Wage Income	482,400	603,000
(6) Wealth	482,400	452,250
(7) Consumption	120,600	150,750
(8) Net Income	0	194,850
(9) Saving	120,600	44,100
(10) Assets, End of Period	120,600	76,500

Period Three Calculations

	(1)	(2)	(3)
(1) Initial Assets	0	120,600	76,500
(2) Interest Income	0	30,150	19,125
(3) Financial Net Worth	0	150,750	95,625
(4) Wage Income	0	225,000	472,500
(5) PV of Wage Income	482,400	603,000	472,500
(6) Wealth	482,400	452,250	376,875
(7) Consumption	120,600	150,750	188,438
(8) Net Income	0	194,850	453,375
(9) Saving	120,600	44,100	264,938
(10) Assets, End of Period	120,600	76,500	188,438

Period Three Calculations

	(1)	(2)	(3)
(1) Initial Assets	0	120,600	76,500
(2) Interest Income	0	30,150	19,125
(3) Financial Net Worth	0	150,750	95,625
(4) Wage Income	0	225,000	472,500
(5) PV of Wage Income	482,400	603,000	472,500
(6) Wealth	482,400	452,250	376,875
(7) Consumption	120,600	150,750	188,438
(8) Net Income	0	194,850	453,375
(9) Saving	120,600	44,100	264,938
(10) Assets, End of Period	120,600	76,500	188,438

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

Period Three Calculations

	(1)	(2)	(3)
(1) Initial Assets	0	120,600	76,500
(2) Interest Income	0	30,150	19,125
(3) Financial Net Worth	0	150,750	95,625
(4) Wage Income	0	225,000	472,500
(5) PV of Wage Income	482,400	603,000	472,500
(6) Wealth	482,400	452,250	376,875
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Period Three Calculations

	(1)	(2)	(3)
(1) Initial Assets	0	120,600	76,500
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(4) Wage Income	0	225,000	472,500
(5) PV of Wage Income	482,400	603,000	472,500
(6) Wealth	482,400	452,250	376,875
(7) Consumption	120,600	150,750	188,438
(8) Net Income	0	194,850	453,375
(9) Saving	120,600	44,100	264,938
(10) Assets, End of Period	120,600	76,500	188,438

Period Four Calculations

	(1)	(2)	(3)	(4)
(1) Initial Assets	0	120,600	76,500	188,438
(2) Interest Income	0	30,150	19,125	47,108
(3) Financial Net Worth	0	150,750	95,625	235,547
(4) Wage Income	0	225,000	472,500	0
(5) PV of Wage Income	482,400	603,000	472,500	0
(6) Wealth	482,400	452,250	376,875	188,438
(7) Consumption	120,600	150,750	188,438	235,547
(8) Net Income	0	194,850	453,375	47,109
(9) Saving	120,600	44,100	264,938	188,438
(10) Assets, End of Period	120,600	76,500	188,438	0

Period Four Calculations

	(1)	(2)	(3)	(4)
(1) Initial Assets	0	120,600	76,500	188,438
(2) Interest Income	0	30,150	19,125	47,108
(3) Financial Net Worth	0	150,750	95,625	235,547
(4) Wage Income	0	225,000	472,500	0
(5) PV of Wage Income	482,400	603,000	472,500	0
(6) Wealth	482,400	452,250	376,875	188,438
(7) Consumption	120,600	150,750	188,438	235,547
(8) Net Income	0	194,850	453,375	47,109
(9) Saving	120,600	44,100	264,938	188,438
(10) Assets, End of Period	120,600	76,500	188,438	0

Period Four Calculations

	(1)	(2)	(3)	(4)
(1) Initial Assets	0	120,600	76,500	188,438
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(3) Financial Net Worth	0	150,750	95,625	235,547
(4) Wage Income	0	225,000	472,500	0
(5) PV of Wage Income	482,400	603,000	472,500	0
(6) Wealth	482,400	452,250	376,875	235,547
(7) Consumption	120,600	194,850	188,438	235,547
(8) Net Income	0	194,850	453,375	47,109
(9) Saving	120,600	44,100	264,938	188,438
(10) Assets, End of Period	120,600	76,500	188,438	0

The Moral

- The Basic Consumption Model Still Applies
- We now use after-tax cash flows and after-tax interest rates.

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- The Basic Consumption Model Still Applies
- We now use after-tax cash flows and after-tax interest rates.
- This gives us a powerful procedure for analyzing tax proposals and transfer payments.

End

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