1. Credit exchange

a. -b. See FIGURE. Notice the person’s average transaction balances fall from $250 to $200 when he uses a credit card.

c. Now his average transaction balances go to zero: he takes $500 out of his savings account and puts it into his checking account immediately before writing the $500 check at the end of each month. So effectively he “holds” $500 in his checking account for only a micro second. For the remainder of the month he holds no money at all since he pays for everything using his card. So his average money holdings through the month are zero (the $500 held for a micro second doesn’t lift the average above zero by any significant amount). See FIGURE.

2. Credit exchange and velocity $M = 2,000m$, hence $V = X/M = 2,000m/2,000m = 1$ per month. $V$ increases from .8 to 1 when there is credit exchange. The island is getting more transactions done per dollar (that is, $V\uparrow$) because 25% of the final transactions $X$ are actually being financed via credit rather than monetary exchange. See FIGURE below for saw-tooth pictures.
3. Fast money and velocity

- I won’t bother drawing the picture. See FAST MONEY handout for how it should look. There’s a spike at the beginning of month $t$, at which point his money holdings go up to $500 + \$1,500 = \$2,000$ momentarily. Because it’s just a momentary spike, his average monthly balances won’t change; they remain at $\$250$.

- $M = \$1,900m$, hence $V \equiv X/M = 2,000m/1,900m \approx 1.05$ per month. Notice $V \uparrow$ from $.8$, which was its monthly value when there were no fast money transactions. See FIGURE below for saw-tooth pictures; I have drawn them assuming all big-ticket transactions happen at the beginning of each period.

4. Classical monetary theory $Y = 1,000m$, hence real money demand $= \frac{1}{k} \times 1,000m = 200m$. If the money market is in equilibrium, $M^\frac{d}{P} = \frac{M^d}{P} = 200m$. So, since $P = 2$, $M^* \equiv M^* = 2,000m/400m = \boxed{\frac{5}{2}}$. Notice $V$ equals the inverse of the Cambridge $k$. The LM is vertical with intercept at $V = M \times \frac{1}{Y} = 1,000m$. I won’t bother drawing it.