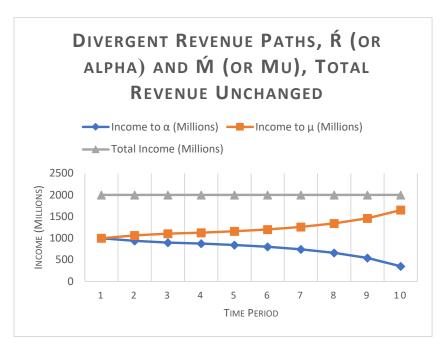
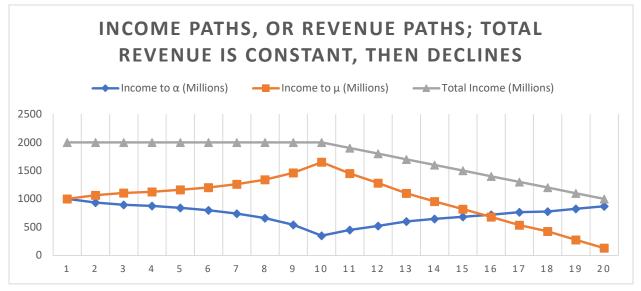
## Annie's Model - Third Numerical Example

The first chart below represents an unchanging quantity of money in circulation. (It's a repeat - drawn from Annie's first numerical example). The second chart shows the quantity of money declining after the tenth time period. The quantity of money (circulating) is total income, or total revenue; gray triangles; this total income (revenue), is shared by both sectors.



The two sectors,  $\hat{K}$  or alpha ( $\alpha$ ) and  $\hat{M}$  or mu ( $\mu$ ), are the same as before, with the same revenue properties as before – when the price decreases for alpha (farm, or necessity  $\hat{K}$  sector, blue diamonds), the income or revenue to the sector decreases; price increase means revenue increase.

When the price decreases for mu (everything else, or luxuries M, orange squares), the income or revenue to the sector increases; price increase means revenue decrease. Table P, next page, shows the numbers, but you don't have to understand the table to see what happens.



As technological progress produces more of all goods, income (= revenue) to the sector  $\mu$  (mu, or luxuries  $\dot{M}$ ) increases while income (= revenue) to the sector  $\alpha$  (alpha, or necessities  $\dot{R}$ ) decreases. After time period 10, when we reduce the money in circulation (a.k.a. total revenue, shared by both sectors; gray triangles), the relative fortunes of the two sectors reverse. As economic activity slows,  $\alpha$  (farm sector, or  $\dot{R}$ , necessities, blue

diamonds) gets a larger share of the total revenue, with the cross-over occurring at around time-period 16. People prefer spending on necessity goods rather than on everything else (luxury goods). Thus, as output declines with a contracting economy as the money in circulation decreases, so consumers' demand bids prices up for both goods, but demand is more robust in  $\alpha$ , or  $\hat{K}$ . (Quantities of  $\mu$ , manufactures or M, luxuries, decline more than of  $\alpha$ , farm sector, or  $\hat{K}$ , necessities.)

|                    |                 | Total Income       |            |       |            |       |        |
|--------------------|-----------------|--------------------|------------|-------|------------|-------|--------|
|                    |                 | or Revenue         |            |       |            |       |        |
|                    | Income to $\mu$ | (Millions) =       | Quantity   | Price | Quantity   | Price |        |
| Income to $\alpha$ | (Ń)             | <mark>money</mark> | ofα(Ŕ)     | ofα   | of µ (Ń)   | of µ  | Time   |
| (Ŕ)(Millions)      | (Millions)      | circulating        | (Millions) | (Ŕ)   | (Millions) | (Ń)   | Period |
| 1000               | 1000            | <mark>2000</mark>  | 100        | 10    | 100        | 10    | 1      |
| 936                | 1064            | <mark>2000</mark>  | 104        | 9     | 118        | 9     | 2      |
| 896                | 1104            | <mark>2000</mark>  | 112        | 8     | 138        | 8     | 3      |
| 875                | 1125            | <mark>2000</mark>  | 125        | 7     | 161        | 7     | 4      |
| 840                | 1160            | <mark>2000</mark>  | 140        | 6     | 193        | 6     | 5      |
| 800                | 1200            | <mark>2000</mark>  | 160        | 5     | 240        | 5     | 6      |
| 740                | 1260            | <mark>2000</mark>  | 185        | 4     | 315        | 4     | 7      |
| 660                | 1340            | <mark>2000</mark>  | 220        | 3     | 447        | 3     | 8      |
| 540                | 1460            | <mark>2000</mark>  | 270        | 2     | 730        | 2     | 9      |
| 350                | 1650            | <mark>2000</mark>  | 350        | 1     | 1650       | 1     | 10     |
| 450                | 1450            | <mark>1900</mark>  | 300        | 1.5   | 967        | 1.5   | 11     |
| 520                | 1280            | <mark>1800</mark>  | 260        | 2     | 640        | 2     | 12     |
| 600                | 1100            | <mark>1700</mark>  | 240        | 2.5   | 440        | 2.5   | 13     |
| 645                | 955             | <mark>1600</mark>  | 215        | 3     | 318        | 3     | 14     |
| 682.5              | 817.5           | <mark>1500</mark>  | 195        | 3.5   | 234        | 3.5   | 15     |
| 720                | 680             | <mark>1400</mark>  | 180        | 4     | 170        | 4     | 16     |
| 765                | 535             | <mark>1300</mark>  | 170        | 4.5   | 119        | 4.5   | 17     |
| 775                | 425             | <mark>1200</mark>  | 155        | 5     | 85         | 5     | 18     |
| 825                | 275             | <mark>1100</mark>  | 150        | 5.5   | 50         | 5.5   | 19     |
| 870                | 130             | <mark>1000</mark>  | 145        | 6     | 22         | 6     | 20     |

Table P – Revenue to  $\alpha$  (Ŕ),  $\mu$  (M), and both; money circulating declines after Time Period 10