Homework Question on the Keynesian Labor Market Equilibrium Model:

Solutions to 3 Questions

When A falls, MPN declines and thus reduces labor demand from NDO to ND1.

In equilibrium, W falls, N falls, and U rises. Since less workers are hired, U increases and that allows firms to offer a lower real wage to get the right amount of effort from their workers.
When the labor force participation rate falls, the labor supply curve shifts left. This shift in labor supply causes the WS to also shift left by the same amount.

\[ U_1 = L_1 - N_1 \]
\[ U_0 = L_0 - N_0 \]

In equilibrium, the real wage rises, \( N \) falls, and unemployment declines.

A decline in labor supply reduces employment, but employment falls by less than \( L \) (because the demand curve is not completely flat — in other words, it is upward-sloping). Thus, \( N \) declines and lower \( U \) forces firms to raise real wages to get more effort from workers.
When the government reduces unemployment benefits, unemployment is more painful to endure and so workers will work harder. Consequently, firms do not need to pay as high a real wage to get the best effort from workers. This means the WS shifts down.

\[ W_0 - W_1 \]

\[ L_0 - N_0 \]

\[ L_1 - N_1 \]

In equilibrium, firms lower real wage, raise N and since L stays the same, U declines. The decline in W allows firms to raise their demand for workers and so U declines for a given amount of labor supply.
What happens in SR + LR when G increased? Consider \( \Delta G \) for \( G, Y, T, N, \frac{w}{p} \) and \( \Delta G \) for \( G = \left[ \begin{array}{c} \text{GE} \\ \text{SE} \end{array} \right], S = \Delta SR, \ L = \Delta LR \)

1. \( G \) shifts IS and AD-\( T \) right. In the SR:
   - \( Y \) rises with \( \Delta G \) and \( \Delta Y \) causes \( S \) to fall to \( T \)
   - \( T \) stays fixed initially
   - \( \frac{w}{p} \) raises effective labor demand, relative to \( N_{\text{ME}} \)

2. \( N_{\text{ME}} \) forces firms to \( \frac{w}{p} \) because
   - \( U \) has fallen due to \( \Delta N \) and no change in \( L \)

3. \( \frac{w}{p} \) raises effective labor demand, relative to \( N_{\text{ME}} \)

4. \( \Delta N_{\text{ME}} \) forces firms to hire \( \frac{w}{p} \) because
   - \( Y > YFE \) causes \( T \) to shift up, which raises \( T \), causing
   - \( \Delta N \) to rise, which reduces \( \frac{w}{p} \) and \( \Delta Y \) causes
   - \( \Delta T \) to fall, \( \frac{w}{p} \) to fall and \( U \) to rise.

This continues until \( \frac{w}{p} = YFE \). So in LR, \( T \) and \( \frac{w}{p} \) are higher, but \( Y, N, \frac{w}{p} \) and \( U \) are unaffected.
Suppose YFE falls and
Suppose that TIA shifts up by a large enough amount that Y falls below YFE, following a decline in TFE.

GE = initial General Equilibrium
SR = short-run position
LR = long-run position

Ti and Y rise until Y falls. Now Y < YFE so Ti starts falling and Y rises.

Start to allow Y to fall which allows MP to rise until Y gets to the new lower YFE = YFE1. This looks more like the way Ti reacts to supply shocks.
What does a **Downward Shift in TA**
do to \( y \), \( T \) and \( r \) in SR and LR?

\[ GE = \text{initial general equilibrium} \]

\[ SR = \text{short-run position} \]

\[ LR = \text{long-run position} \]

When 
\[ \text{TTA Shifts DOWN, } T \text{ falls and this allows central bank to lower } r \]
which induces more spending or \( Y \) rises.
Now \( Y > YFE \) and this will eventually cause \( T \) to rise because producing at a higher level than \( YFE \) increases the costs of production and firms will eventually start passing these cost increases into rising inflation.
As \( r \) rises, \$ed raise \( r \) and \( Y \) starts to fall.
This continues until we get back to the original GE.
The \( + T \), \( r > r^* \) and \( Y > YFE (U < U^*) \) sets and with the SR effects of a drop in the TTA Curve.