

**1** : original equilibrium before shock (That's where you started with.)

**2**: Capture the effect of shock when “r” and “p” are fixed; the **DAE multiplier effect**

**2 → 3**: Effect of interest rate adjustment

- As the level of economic activities decline (due to falling C and I), interest rate tends to fall as a result of falling demand for loan (lower demand for money).
- Falling interest help partially incentivize private to expand spending.
- Private spending is slightly boost because of the **interest rate effect**; however, compare to the original level of spending, this will be lowered. (partially offset the original impact)

**4**: The equilibrium captured by AD-AS when price is fixed.

- IS-LM equilibrium (as shown in 3) is correspond to the price-fixed AD-AS equilibrium denoted by 4.

**4 → 5**: Falling AD leads to excess supply; this results in lower price. This is **price effect**. This partially increases quantity demanded (move along the new AD).

- Falling price generates a feedback to financial sector, pushing interest rate down further, and hence boosting private spending. This is correspond to the equilibrium given by “**6**” in the IS-LM figure.

**5 and 6**, represent the **Keynesian equilibrium** when both price and interest rate can be changing; the three effects combined (DAE multiplier + Interest rate effect + Price effect)

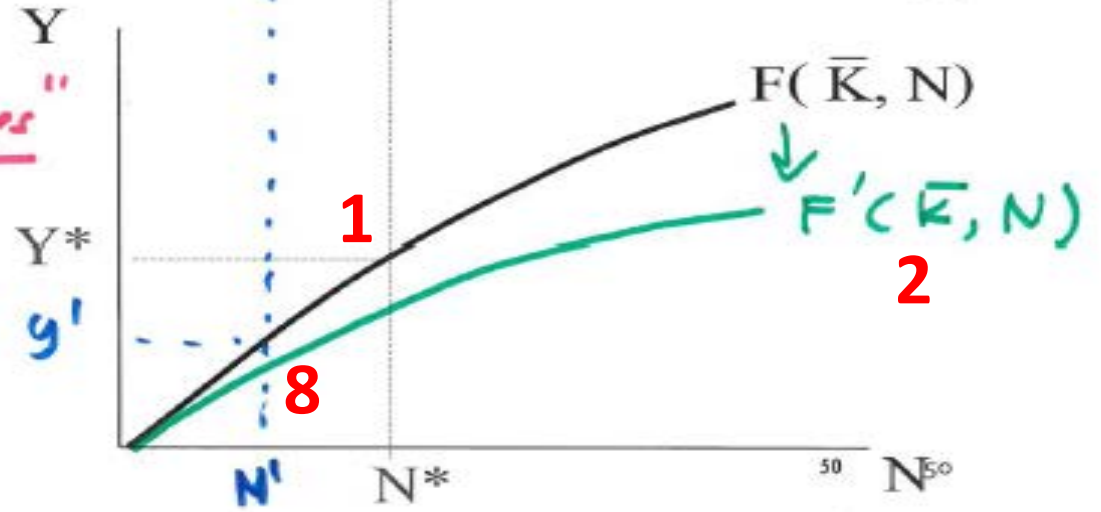
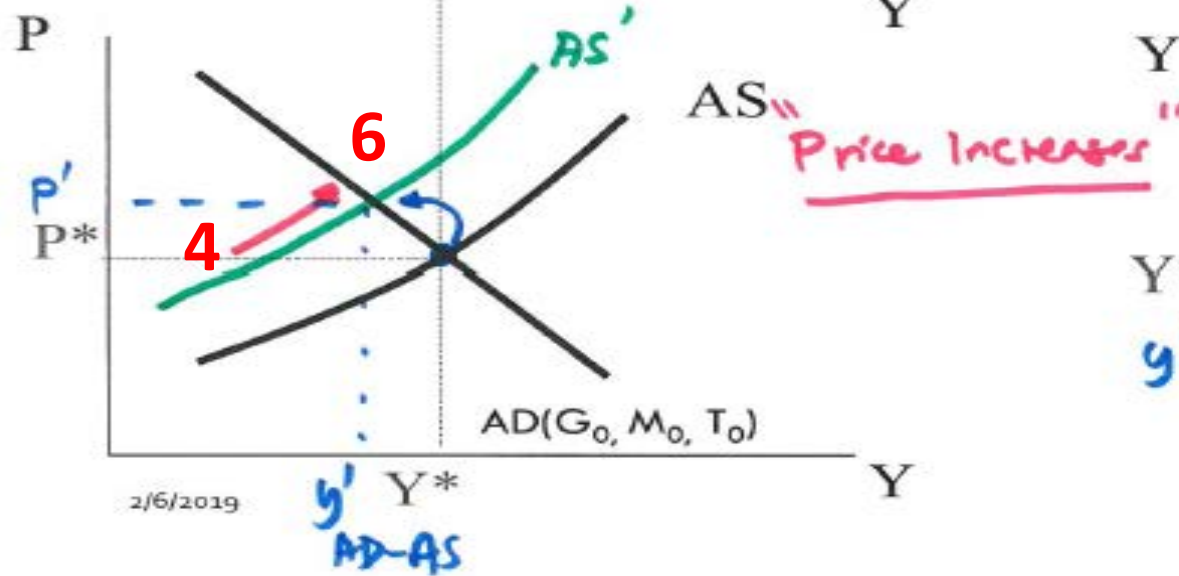
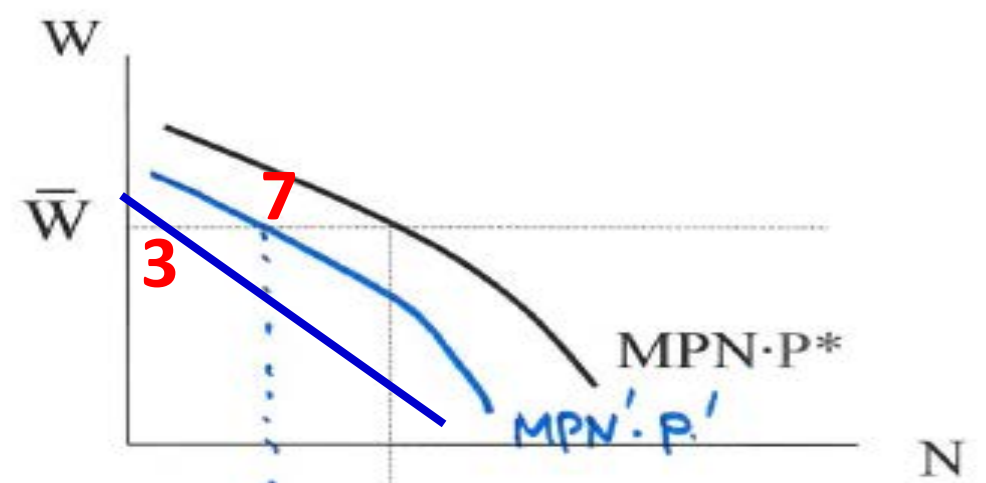
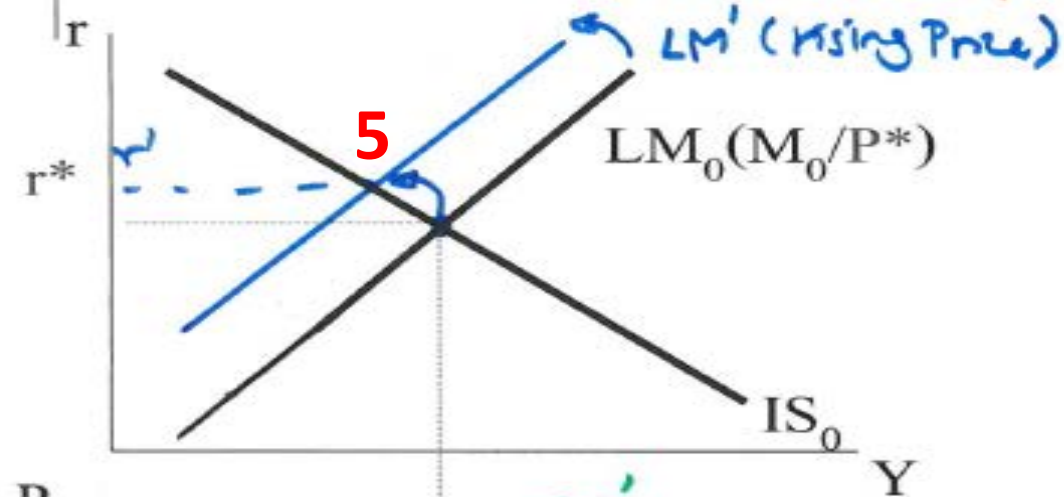
**7**: As price decreases in the equilibrium, value of marginal product will drop. Firms choose to lower the labor employment.

**8**: Correspond to lower employment, firms choose the lower the production. The level of production consistently matches with the level of demand implied by 5 and 6.

Supply shock

# SUPPLY SHOCK: NATURAL DISASTER

$\Rightarrow$  "K ↓ drop" Plants / Capitals get destroyed / damaged



$Y'$   $Y^*$   
AD-AS

- 1 :** original equilibrium before shock (That's where you started with.)
- 2:** Natural disaster damages capital stock; labor productivity decreases. Production capacity shrinks; the production function shift down
- 3:** For the fixed price, value of marginal product decreases. Firm chooses to hire less labor and downsize the production
- 4:** Corresponding the fixed price AD-As figure, AS shifts left.
- 5:** With price adjustment, price will increase due to the excess demand given in "4"(shortage of production). Total private spending decreases as rising price would tend to push up the interest rate.
- 6:** Flexible price AD-AS equilibrium is reached because of the rising interest rate, which is captured in "5"
- 7:** While lower productivity tends to generate negative impact of VMP, rising price can partially offset the adverse impact of original shock. Firms choose to hire labor at 7 rather than 3.
- 8:** Overall, level of economic activities decline, along with rising price. However, the effect is less severe when comparing with fixed price situation.