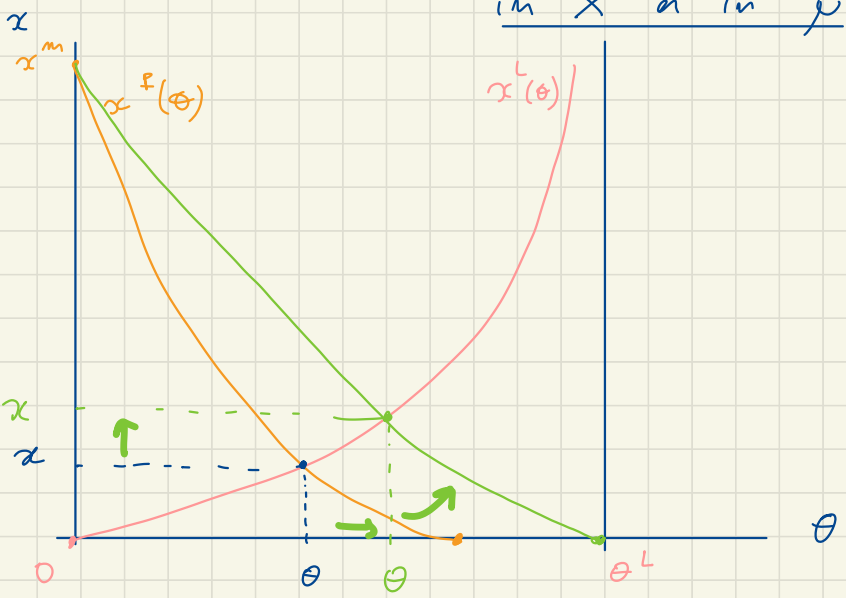
Aggregate Demand Shocks with Fixed Prices

Pascal Michaillat
https://pascalmichaillat.org/c2/

Aggregate demand shock:

Positive shock: increase in X or in ν



$$x^f(\theta) = \tau^{-1}\left(\left[\frac{X^{\xi} \nu^{\alpha}}{w \cdot h} \cdot \frac{1}{f(\theta)} \right]^{\frac{1}{\xi - 1}} - 1 \right)$$

increasing

$$x^L(\theta) = f^{-1}\left(\frac{w/p}{a\,\alpha} \, h^{1-\alpha} f(\theta)^{1-\alpha} \left[1 + \tau(\theta) \right]^{\alpha} \right)$$

After an ↑ in AD (↑ in X or ↑ in ν):

- θ ↗ [$f(\theta)$ ↗, $q(\theta)$ ↘, $\tau(\theta)$ ↗]
- x ↗ [$f(x)$ ↗, $q(x)$ ↘, $\tau(x)$ ↗]
- $\ell = f(\theta) \cdot h$ so ℓ ↗
- what happens to y? unclear from AD curve → need a Σ approach ↗↗.

$$\left[\; y = \frac{\uparrow X^{\xi}}{[1+\tau(x)]^{\xi-1}} \quad \frac{N}{P}\uparrow \; \right]$$

$$(L) \quad f(x) = \frac{w/p}{\alpha} \; h^{1-\alpha} \; f(\theta)^{1-\alpha} \; [1+\tau(\theta)]^{\alpha}$$

$$\Rightarrow \alpha \; f(x) \cdot \alpha \cdot \left[\frac{f(\theta)\cdot h}{1+\tau(\theta)} \right]^{\alpha} = (w/p) \; \frac{f(\theta)\cdot h}{l}$$

$$f(x) \; k = y$$

$$\Rightarrow \boxed{\alpha \cdot y = (w/p) \cdot l}$$

labor share $= \alpha$

$$\frac{\text{labor income}}{\text{total income}}$$

From this we see: $y \uparrow \quad = \frac{w \cdot l}{p \; y}$

$= \alpha$

- unemployment rate $1 - f(\theta)$ ↓
- idleness rate $1 - f(x)$ ↓

$\Rightarrow$ less slack.