



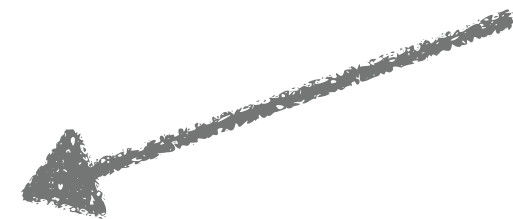
MACROECONOMIC IMPLICATIONS OF COVID-19: CAN NEGATIVE SUPPLY SHOCKS CAUSE DEMAND SHORTAGES?

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GOAL: STUDY MACRO EFFECTS OF COVID-19

➤ Our approach:

Covid-19 = **asymmetric shock** to **gains from trade**



only contact-intensive sectors



health risk inhibits trading among buyers & sellers

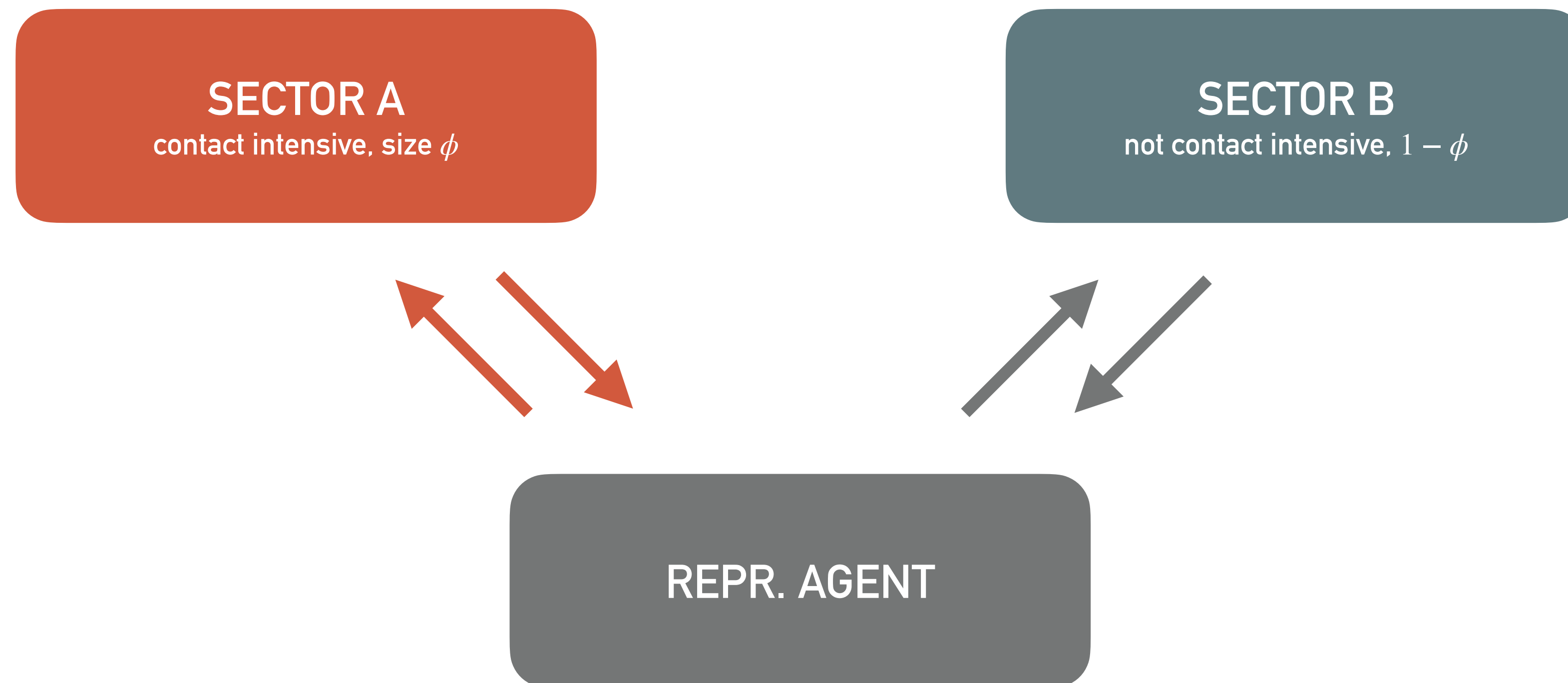
➤ Shock reduces **efficient level of economic activity** in affected sectors

➤ for most part, call it “**supply shock**” *(without loss for our analysis)*

- Today:
 1. Propagation?
 2. Policy implications?
 3. Role of business exits
 4. How to measure propagation?

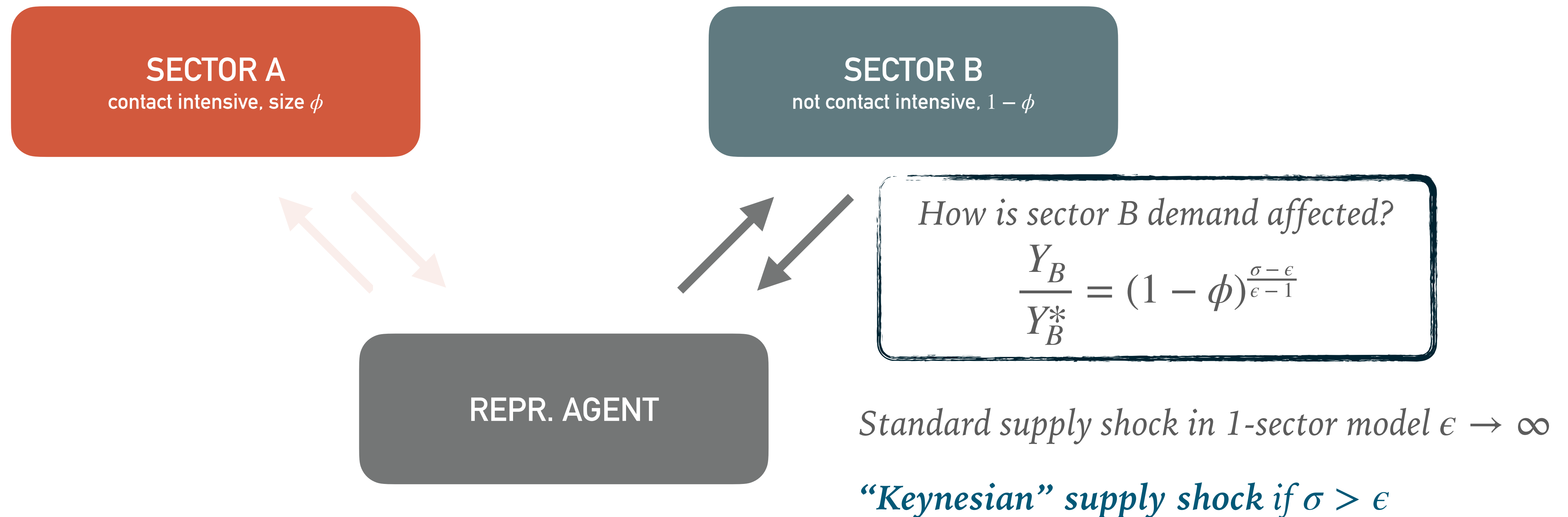
PROPAGATION

- 2-sector economy, intratemporal substitution: ϵ , intertemporal substitution: σ
- Assume shock shuts down sector A for 1 period. Q: How is B affected? Demand? Supply?
- Today, analysis with wage rigidity.



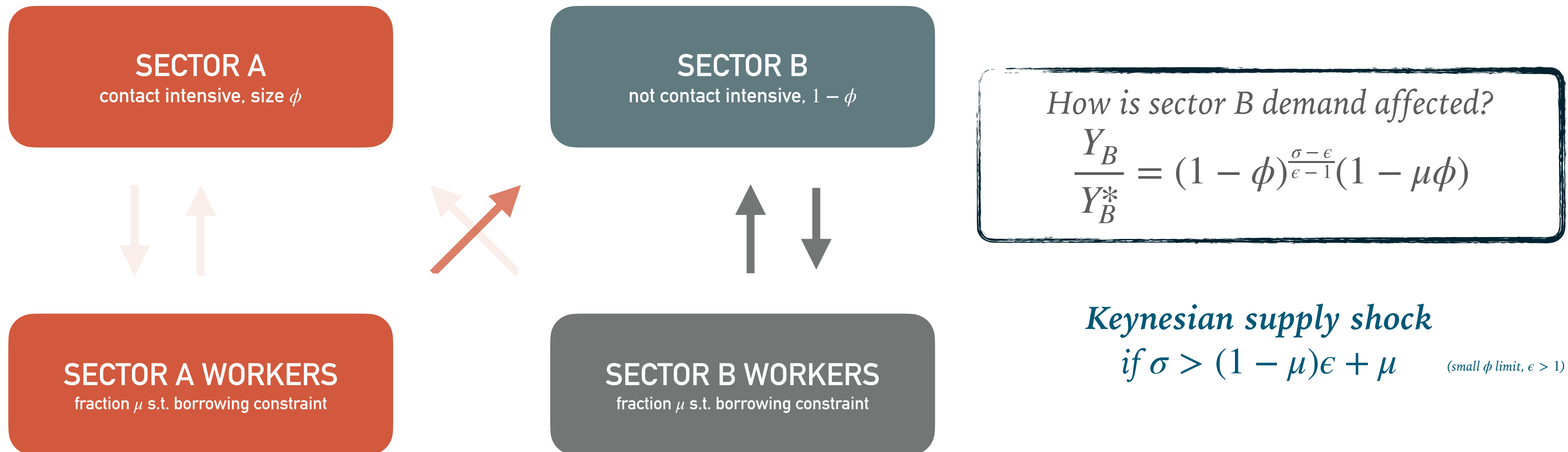
PROPAGATION 1: CROSS-SECTORAL SUBSTITUTION

- 2-sector economy, intratemporal substitution: ϵ , intertemporal substitution: σ
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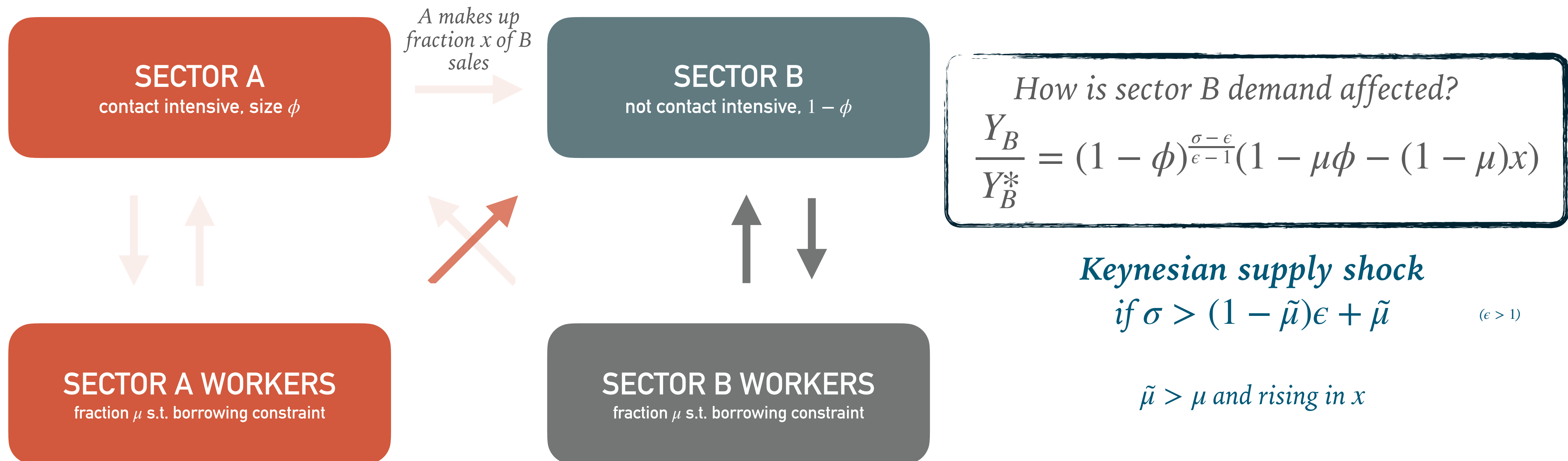
PROPAGATION 2: INCOMPLETE MARKETS

- 2-sector economy, intratemporal substitution: ϵ , intertemporal substitution: σ
- Assume shock shuts down sector A for 1 period. Q: How is B affected? Demand? Supply?
- Today, analysis with wage rigidity.

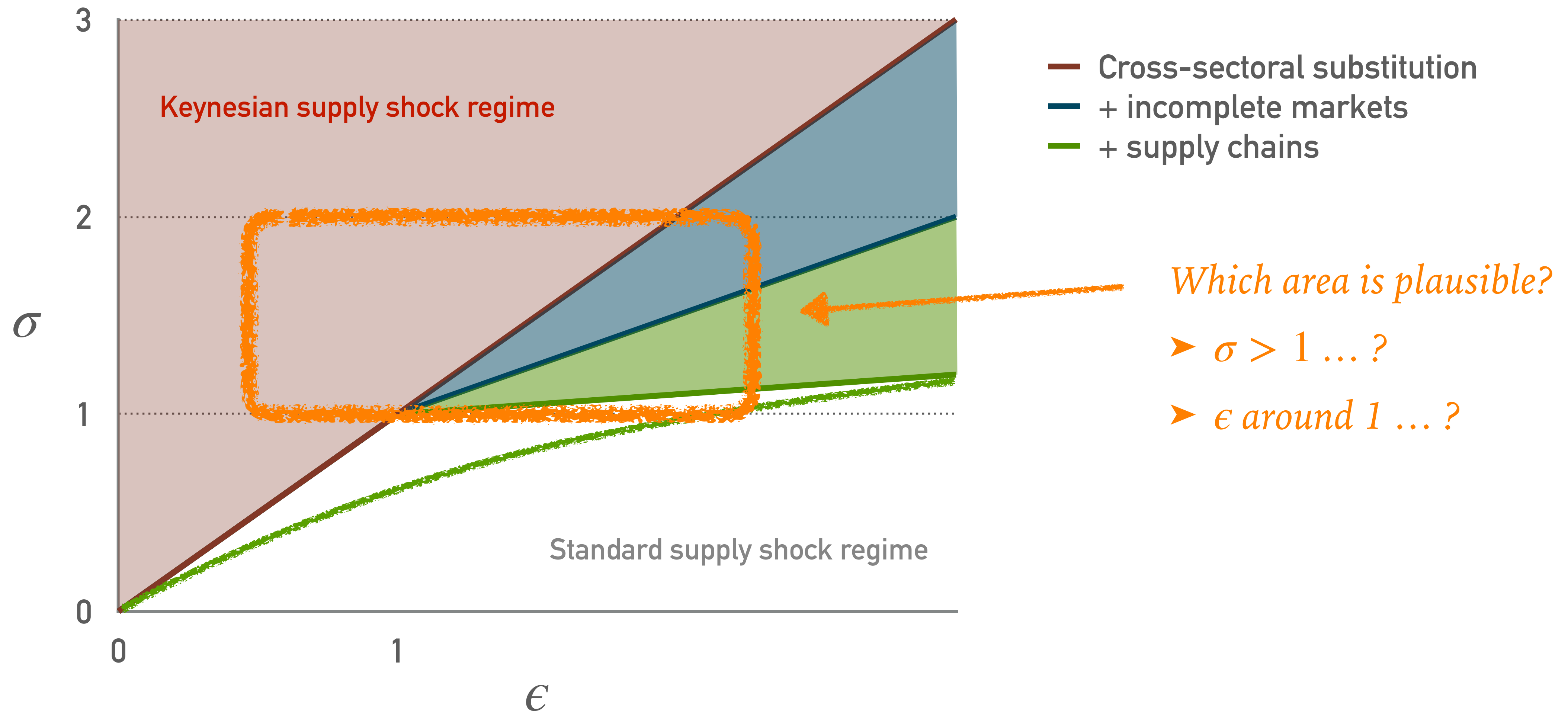


PROPAGATION 3: SUPPLY CHAINS

- 2-sector economy, intratemporal substitution: ϵ , intertemporal substitution: σ
- Assume shock shuts down sector A for 1 period. Q: How is B affected? Demand? Supply?
- Today, analysis with wage rigidity.

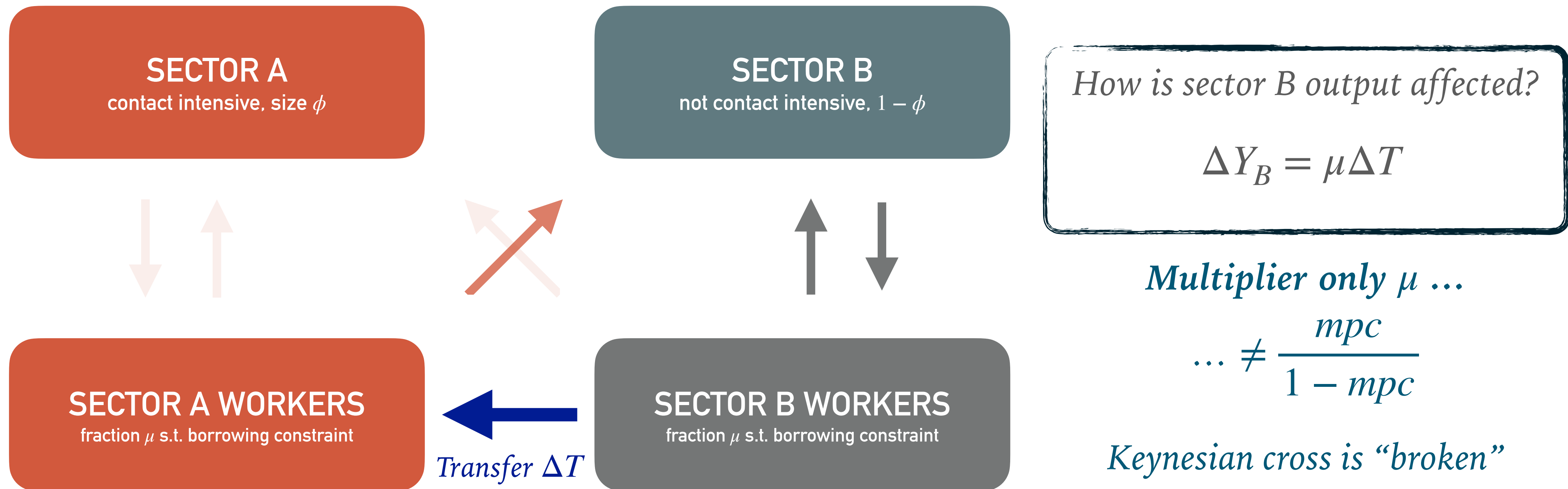


KEYNESIAN SUPPLY SHOCKS IN ϵ, σ SPACE



FISCAL STIMULUS

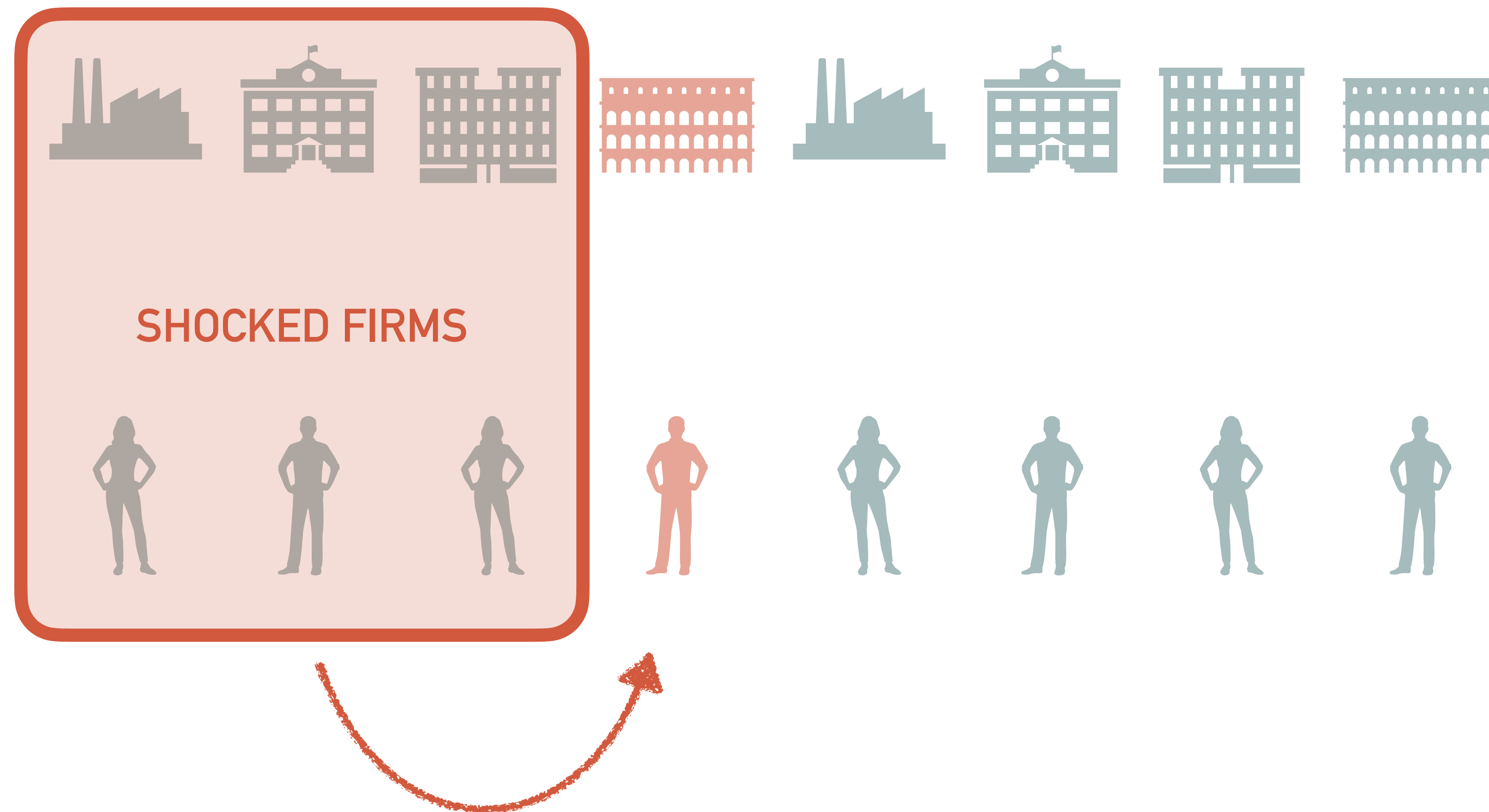
- Focus on situation with Keynesian supply shock. How does fiscal policy help?



But: Insurance value of transfer is enormous due to asymmetry of the shock!

BUSINESS EXITS

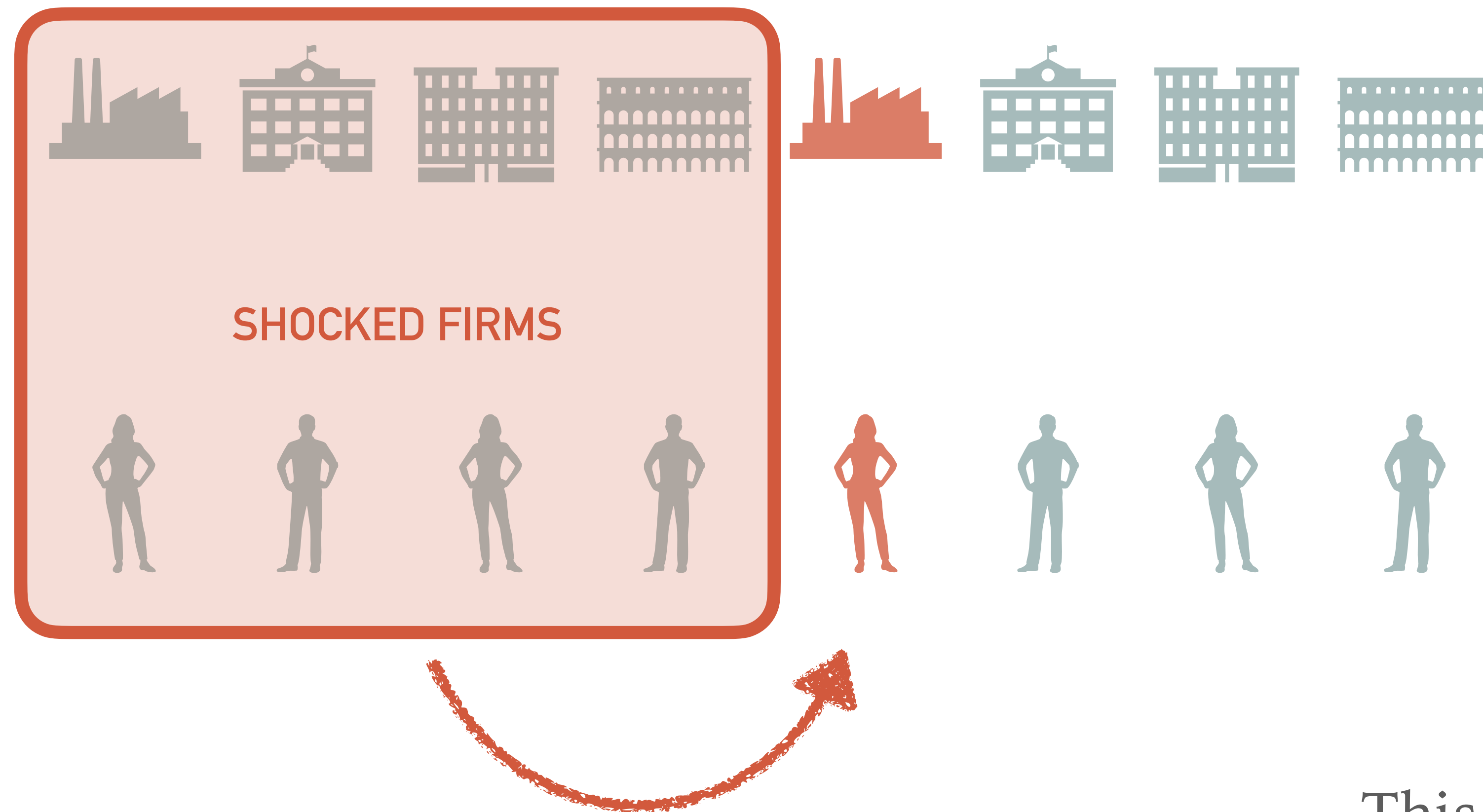
- Zoom into each sector: Monopolistically competitive firms facing random fixed costs



Keynesian supply shock leads to business exits ...

BUSINESS EXITS

- Zoom into each sector: Monopolistically competitive firms facing random fixed costs

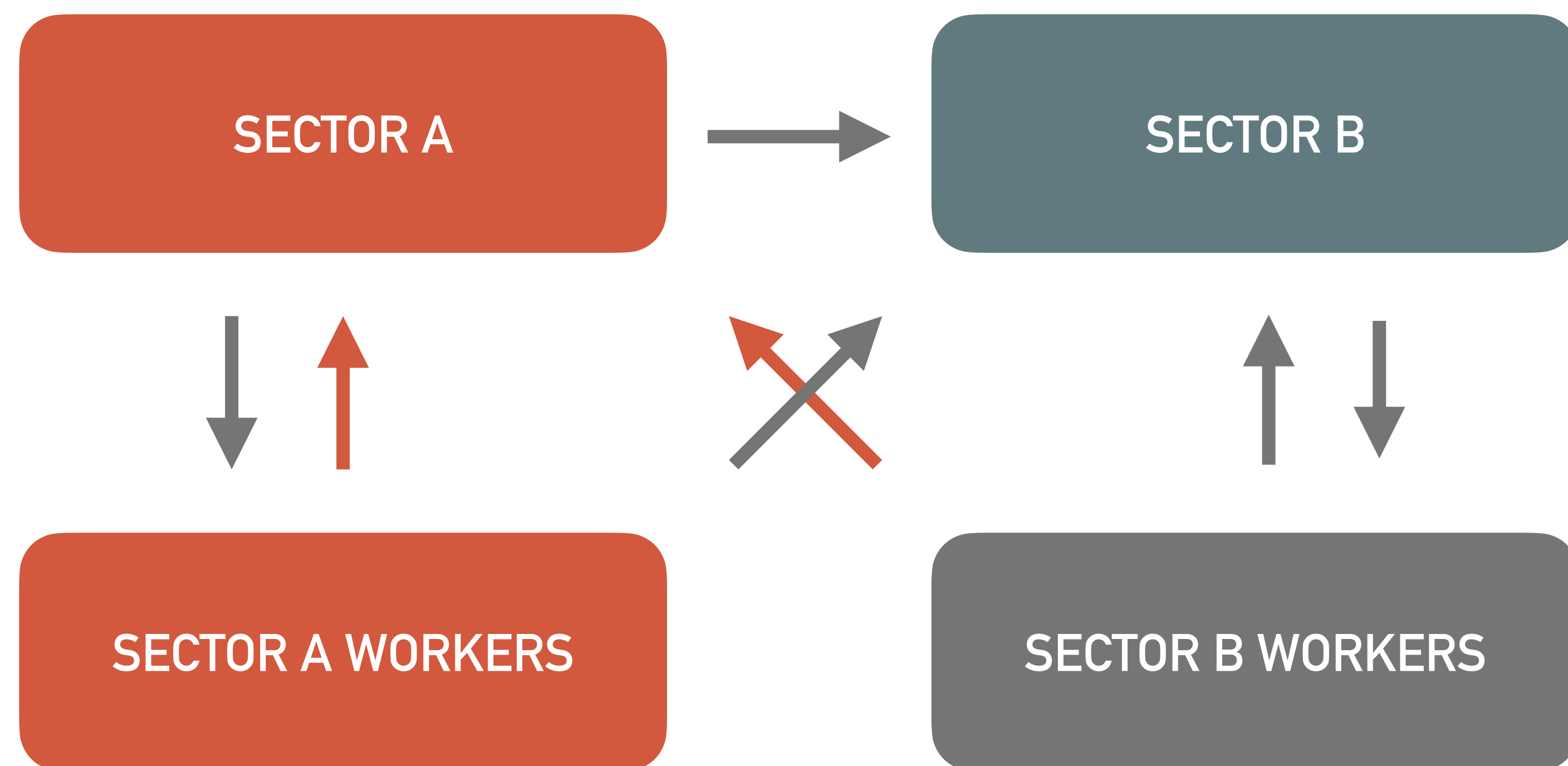


... snowballing into an even stronger Keynesian supply shock

This suggests role for
business support

MEASURING DEMAND SPILLOVERS ...

- Three channels of transmission: **substitution**, **incomplete markets**, **supply chains**
- When do these channels produce Keynesian supply shocks, absent policy ?
 - ... what should we measure in the data?
- Our strategy: Follow the money!
- Step 1: Where does each \$ go that used to be spent on A?
- Some fraction $\Delta C_B / \Delta C_A$ is spent on sector B



MEASURING DEMAND SPILLOVERS ...

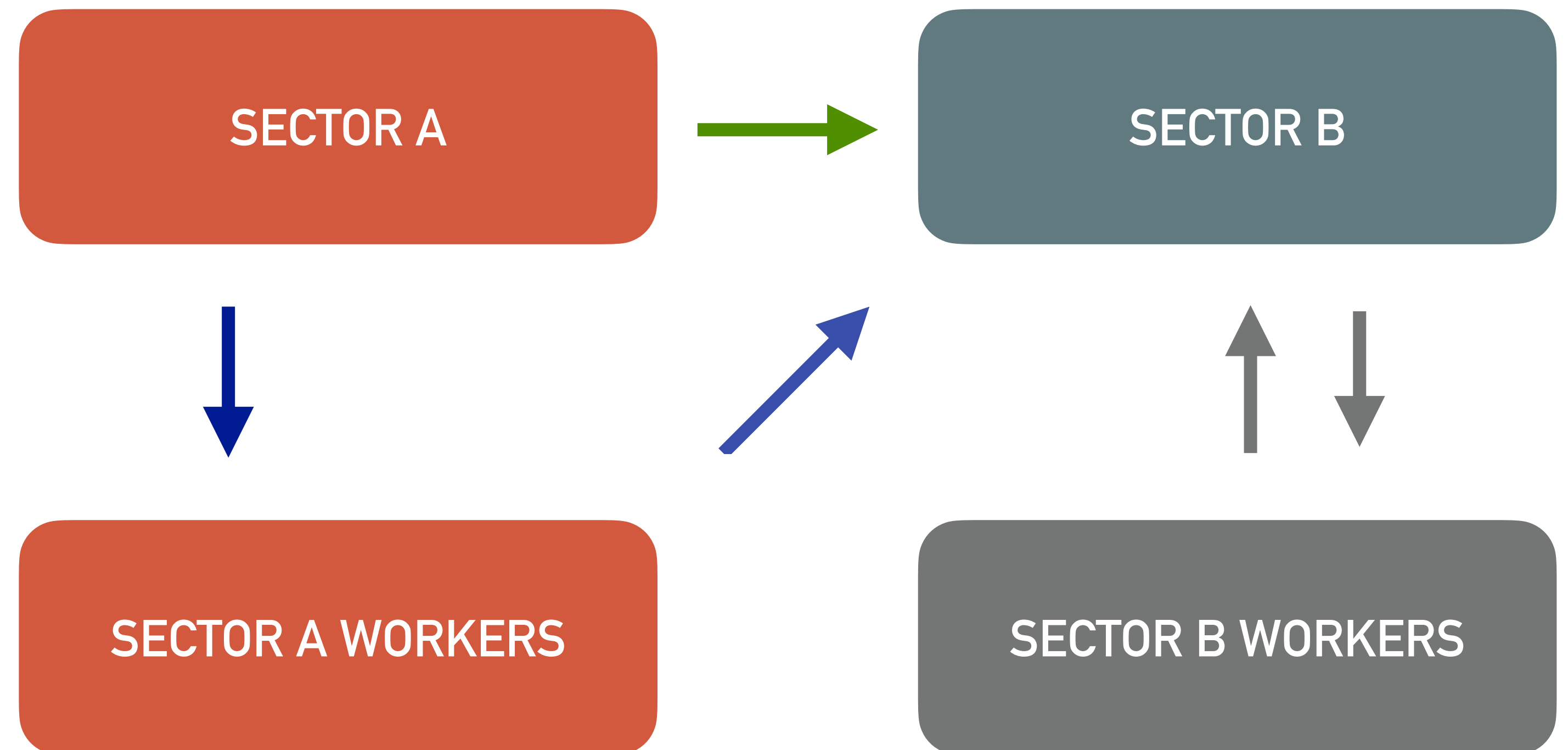
- Three channels of transmission: **substitution**, **incomplete markets**, **supply chains**
- When do these channels produce Keynesian supply shocks, absent policy ?
 - ... what should we measure in the data?

- Our strategy: Follow the money!

- Step 2: Where does each \$ no longer go that used to be spent by A?

- Fraction z used to go straight to B via supply chains

- Fraction $(1 - z)\overline{MPC}^A$ used to be spent on B by sector A workers



MEASURING DEMAND SPILLOVERS ...

- Putting all three channels together ...

Keynesian supply shock if and only if

*intermediate input
share in sector A*

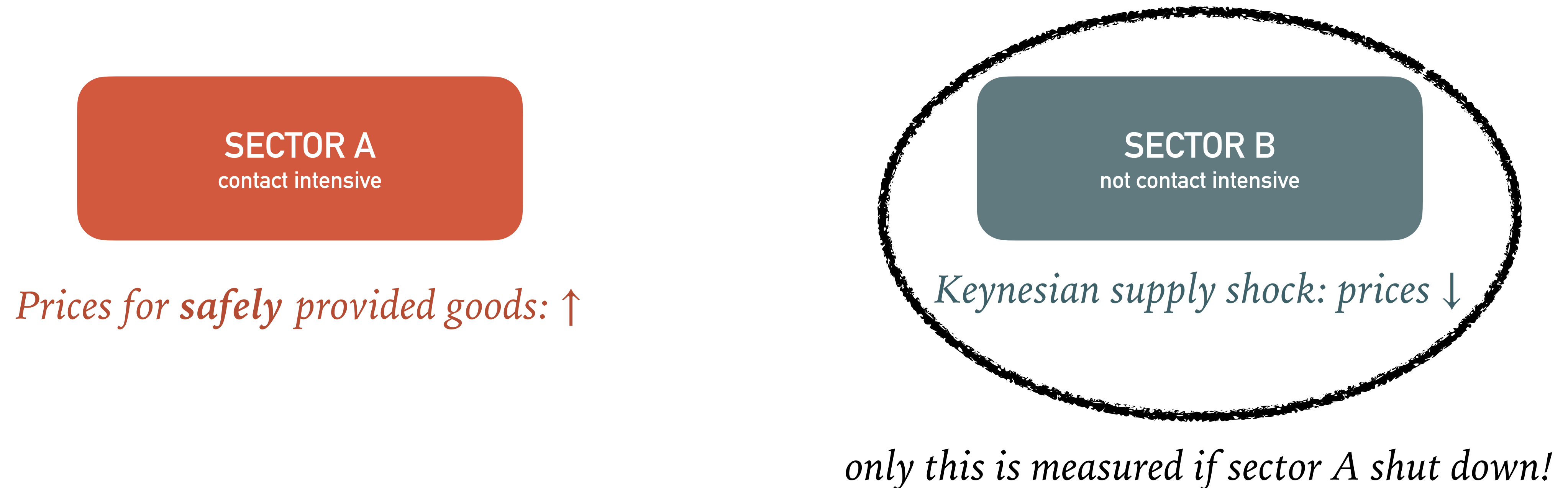
$$(1 - z) \cdot \overline{MPC}^A + z \cdot \frac{\Delta C_B}{\Delta C_A}$$

*MPC of sector A workers
during shock period*

*% of previous sector A spending
that ends up in sector B*

INFLATION

- What happens to prices with Keynesian supply shock:



Overall: **measured** price inflation falls, **ideal** price inflation goes up

SUMMARY: ASYMMETRIC SHOCK TO GAINS FROM TRADE

