

# MAJORITY OF PRODUCTION SHOCKS FOR U.S. CORN EXPLAINED BY FLUCTUATIONS IN PLANTED AND HARVESTED AREA

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**AGU** FALL  
MEETING

SCIENCE  
*is* SOCIETY



**Food Security**

**Food Stability**

$$\text{planted area (acre)} \times \text{harvestable fraction} \times \text{yield (bushel/acre)} = \text{production (bushel)}$$



Loss in Planted Area



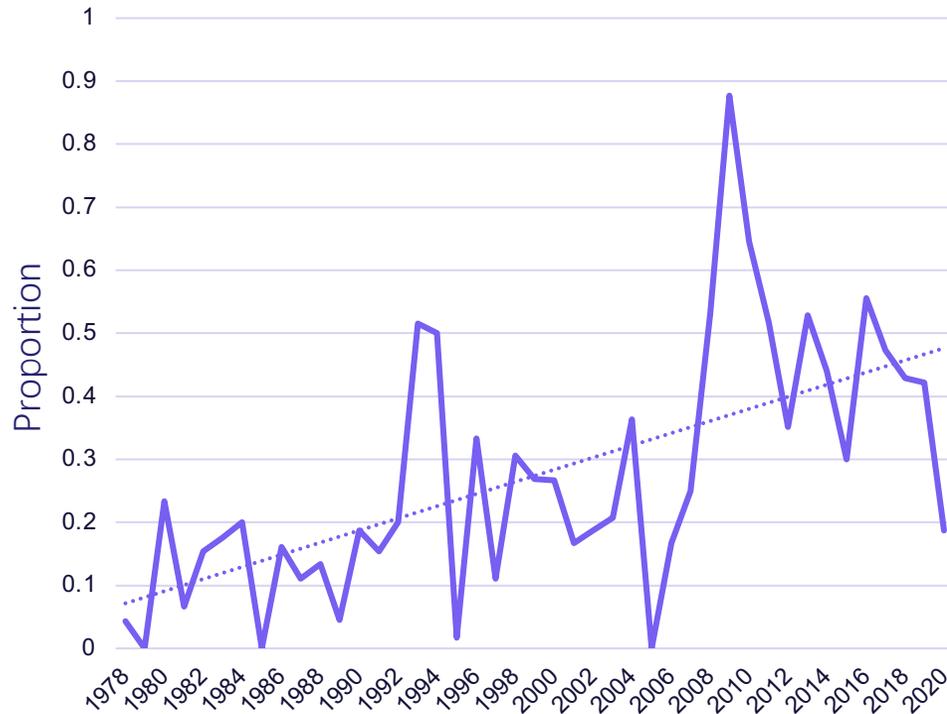
Loss in Yield



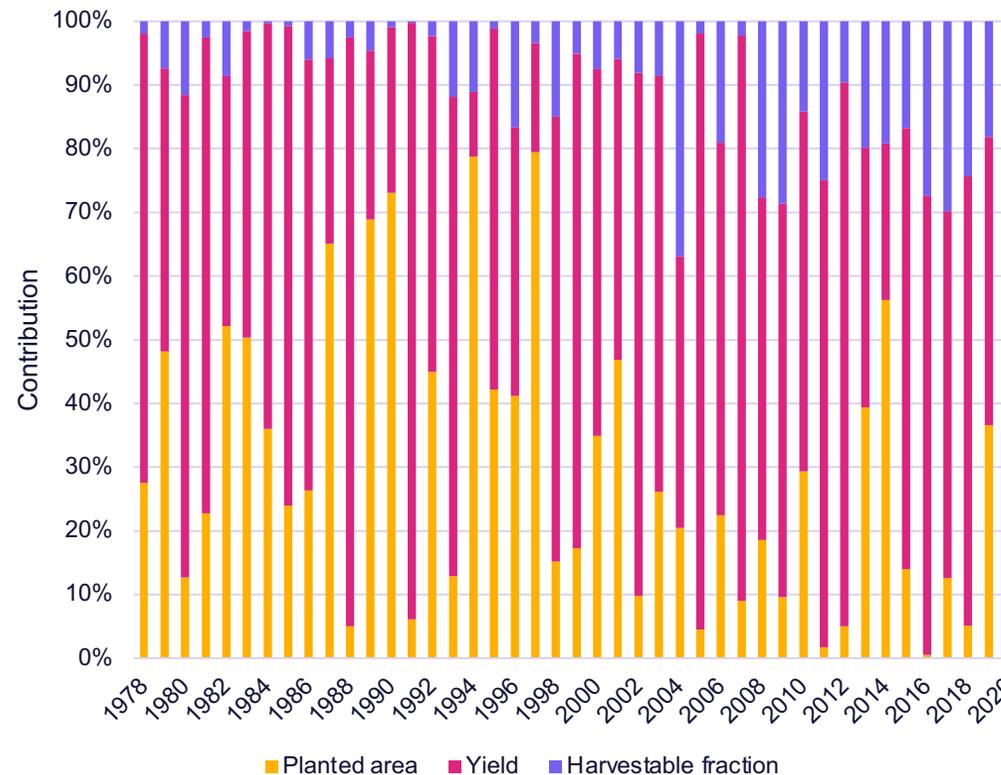
# RESULT

Fluctuations in harvestable fraction are important to determine production instability, and the impact is growing throughout the time.

Proportion of production shocks that coincide with harvestable fraction shocks



Contributions of each factor in US annual production shocks.



# THANK YOU

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Wei, D., & Davis, K. F., (2021)  
*Environ. Res. Lett.*

