

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

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AGU FALL
MEETING

SCIENCE
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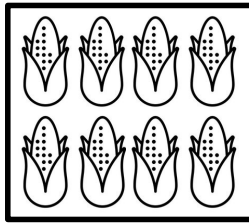


Food Security

Food Stability

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

Loss in
Harvestable
Fraction



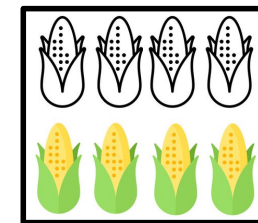
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Loss in
Planted Area



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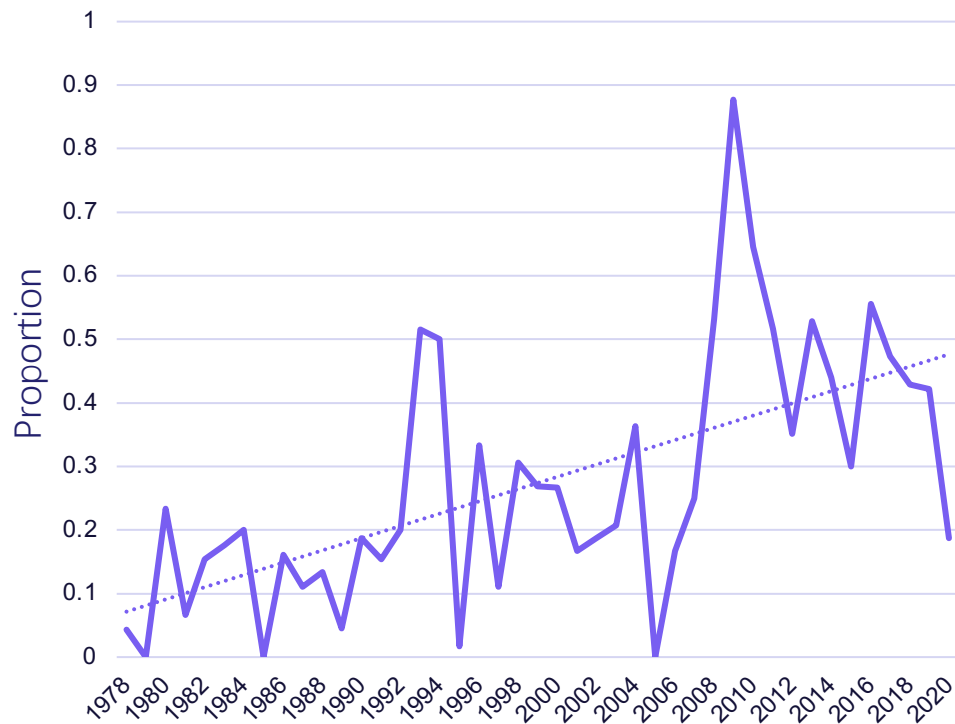
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Loss in
Yield

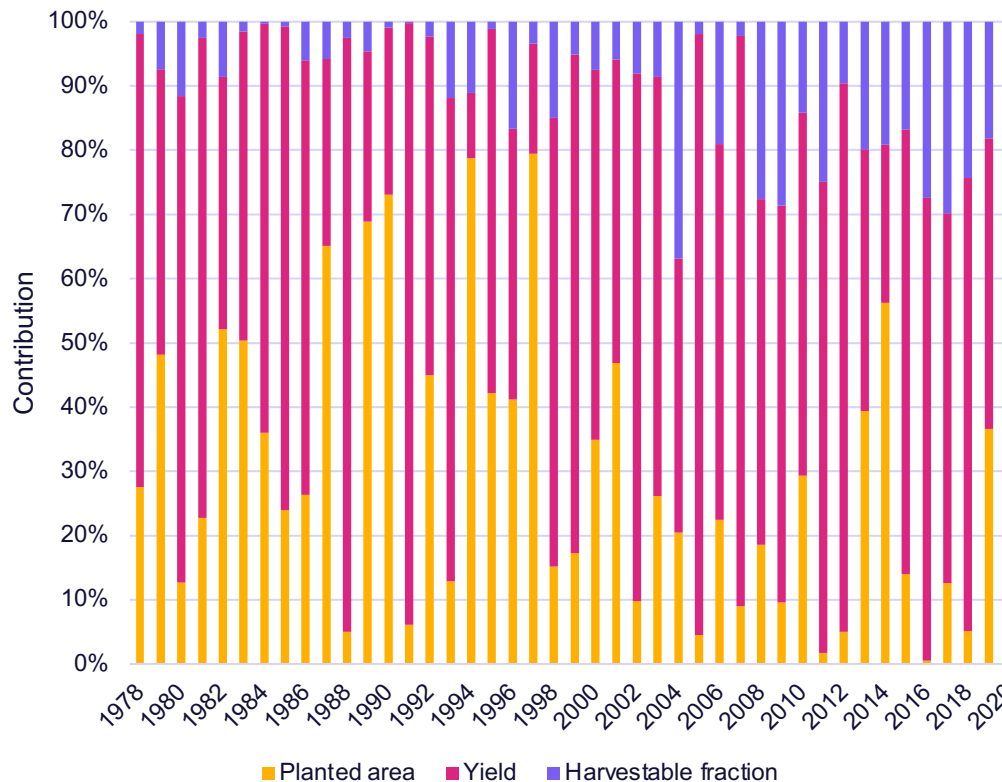
RESULT

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.



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