Price Insurance for Agricultural Commodities: *Development, Challenges, and Potential Role*

Presented by

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about ARMC

- CAAS is a national, integrative research organization in China.
- CAAS, established in 1957, belongs to MOA China , has 42 institutes across the country.

- ARMC is a research team in CAAS
- focus on agricultural risk and insurance over ten years
- has 18 faculty and ~8 gradute students
- 3 research priority
    - ag risk assessment
    - price risk mgt and ag policy
    - contract design issues for CAIP

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Term Definitions

Price insurance for agricultural commodities in this paper refers to the insurance that against price risk.

It includes,

- **Price index insurance** that provide price protection, using a price floor. If the current price goes down below the insured level, the farmer receives a payment. ***This is similar to a put option***, where the insured price is called the exercise price or strike price**.**
- **Margin insurance** that against the margin becoming smaller. It is based on output price (or revenue), and input prices (or input costs). Example: If the current margin goes below the insured margin level, the farmer receives a payment.

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Introduction

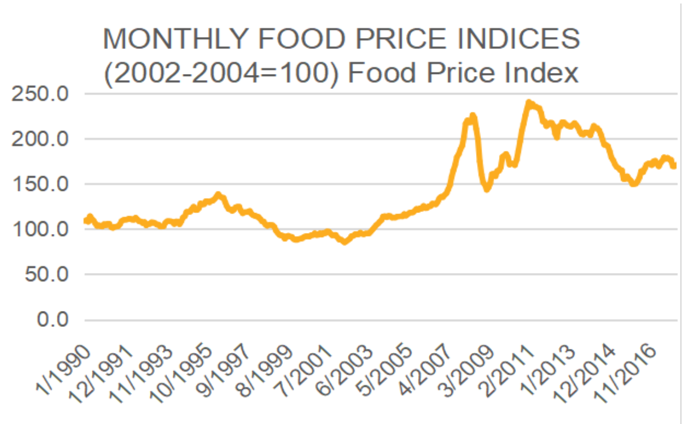
MPP & TSP
are in trobule

Decouple is
the trend

Price Insurance

No Future
and/or Options
Market

Demand on Ag price risk management



Source: FAO

Intoduction(Cont')

- **Price Insurance had drawn lots of attention**

  - Crop Insurance Experiences

  - Price Insurance is similar to Put Option but easier to use and may be more flexible (Babcock, 2004; K. H. Burdine et.al, 2014).

However, A better understanding of price insurance is needed

- there are opposite opinions on the role of PIAC
  - **Advocator:** e.g. Significant Innovation (Sarris, 2002; Zhuo & Wang, 2016)
  - **Opponent:** e.g. a) Systemic risk maybe a challenge b) Revenue insurance may be preferred over price insurance (Tuo & Zhu, 2016)
- Previous literature,
  - Introduction & Implications (Babcock, 2004); Comparision of Price Insurance and Options (eg, Feuz, 2009); Farmer demand (Guan et al, 2017; Ranganathan et al, 2016); Contract design and reference price selection (Bozic et al, 2012; Cabrera et al, 2009; Merritt et al, 2017); Impact of price insurance on risk and production (Burdine et al, 2014)
  - ***failed to clarifying the controversy***

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Objective

- To improve the understanding of price insurance, from the perspective of government, by examining price insurance development, challenges, and the potential role / goals.

- It is necessary to understand price insurance from government's perspective because:
  - 1) Gov. often provides a subsidy for price insurance.
  - 2) Gov. may see price insurance as an agricultural support policy, or intervention tool, rather than only a farm price risk management tool.

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Results -*Development*

➢ Some History

- 1998, Risk Protection for Livestock (Hart, 2001)
- 2000, extending crop insurance approaches to livestock insurance (Babcock, 2004).
- 2002, LRP (livestock price insurance) and LGM (livestock margin insurance) are approved for sale in US (Babcock, 2004); Later, a few other commodities added.
- 2009, CPIP (cattle price insurance) and HPIP (hog price insurance) is offered in Alberta, Canada. [This was later expanded to other provinces and called the WLPIP (western livestock price insurance program, WCPIP and WHPIP)].
- 2012, Price Insurance was initiated for vegetables in Shanghai, China, and later other commodities added; Later, hog and other margin insurance commodities were added for China.
- 2016, Proposal for Price Insurance in India
- 2016, Margin Protection(MP) for cron, rice, soybean and wheat in selected countries of the U.S

Table 1. The development of price insurance in various countries, as of 2016

County	Initiate year	Status*	Covered commodity	Implement regions	Government subsidy
United States	2002	FI	cattle, fed cattle, hogs, lamb, dairy	various states	• Premium subsidy(13% for LRP, 0 for LGM except LGM-Dairy) • Reinsurance support(LPRA)
	2016	PL?	corn, rice, soybean and Wheat	selected counties in selected states	
Canada	2009	FI	Calf-cow, fed cattle, feeder cattle and hog	four western Provinces (BC, AB, SK and MB)	• No premium subsidy; • 100% A&O cost subsidy
China	2012	PL	vegetable, sugar cane, cotton, corn, apple, hog, egg, and dairy	Selected counties in various provinces	• Premium subsidy(50%~80% from Prov. and Local gov.) • No Reinsurance support
Others	--	R/NA			

Note: *, FI=fully Implemented; PL=Pilot; R=Research; NA=not available; Source: author collected;

Note: In the U.S., margin insurance covers cattle, hogs, dairy and grains.
In China, margin insurance covers hogs, eggs, and dairy

➢ Limited Use of Price Insurance

10+ year histroy, few livestock products.

The Liability of LRP (price insurance) and LGM (margin insurance) was **$1.1 billion in 2011.** The liability of crop insurance was much larger at **$110 billion.** (Collins, 2011).

US

WLPIP is not widely used, esp the hog price insurance.

The premium for WLPIP in the Province of Manitoba was **$300 thousand in 2015.** The crop insurance premium was **$300 million** the same year for Manitoba (MASC,2015)

CA

a hot topic and increasing pilot across the country

4 million hogs insured annually in China in 2015. This is only about *0.57%* of the annual **700 million hogs slaughtered.**

CN

Results -*Challenges*

a) Farmer: Understanding the Farmer Demand

- Many claim price insurance has advantages; BUT farmers show limited interest.
- In US, beef producers, 7% buy LRP. 37% involved in futures markets and 23% with option markets (Hill, 2015);
- In China, 64% WTP but 93% have no idea about price insurance (Guan et al, 2017)

b) Market: Availability of Market Instruments

- If futures and options are available, may be less need for price insurance.
- If not, then insurers/reinsurers can't easily hedge risk.

c) Insurer: Managing the CAT Risk for Price Insurance

CAT risk is a challenge because of 1) the systemic risk, and 2) limited private reinsurance (some reinsurers may not wish to reinsure price insurance).

CAT risk is relatively high in China.

. In the U.S., CAT risk is likely lower. (LR is 88% for 2005-2010 in U.S.)

d) Insurer/Gov: Setting the insured price, for price insurance

- Critical factor
- if insured price is set too high, this could cause over production.
- if insured price is set too low, there will be less need

e) Gov.: Subsidy and the appropriate support level?

- Should the government subsidize price insurance, how much?
- Should government support insured price above market levels (above equilibrium price)?

f) Gov.: Support and price insurance production impact

- Decoupled policy is unlikely in practice (Hennessy, 1998).
- Price insurance could have a more significant impact on production than crop insurance. If too much support (e.g. subsidized insured price is above equilibrium price), this can cause over production, and a WTO issue.

Results -*the role/future*

- Price insurance is not suitable for every country and every commodity.
- **A Fundamental question is:What is the role that price insurance should play? (e.g. the objective)**

1

2

3

Goal 1: **Risk Management.** may be a good substitute for options? Easier to use. But usually can't exit a price insurance contract, and has admin cost.

Goal 2: **Supporting the Farmer.** Often providing a subsidy.

Goal 3: **Price Support** (e.g. but destabilizing?) Maybe a higher subsidy *with insured price above market price (equilibrium price), may cause overproduction*

<u>Lower</u> farmer support

<u>Higher</u> farmer support

<u>Highest</u> farmer support

- **Is goal 3 a feasible goal?**

  - Support above market price (equilibrium price) may instead destabilize the agriculture sector, cause over production, and raise WTO issues of a price support.
  - Higher support is backed by some proposals (Sarris, 2002; McCarthy, 2004; Zhuo, 2016)
  - Higher support is considered by some government officials

  - **=>The role of price insurance, especially goal 3, should be studied more in future**

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Summary

- There has been increased interest in price insurance in recent years. But confusions exist and there is a gap in previous literature. A better understanding in governement's perspective is needed.

- Price insurance has 10+ year history in North America, but **limited use**, maybe more interest in China and other developing countries. It **faces the challenges** of farmer's limited interest, catastrophic risk, insuranced price setting and government support.

- a **key question** is **“**what should be the **<u>role/goal</u>** of price insurance**?”**

- Goal 3 could be a contraversial issue, and we need more study on that.

THANK You !

Contact me at wangkeable@gmail.com for any questions or comments