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**Food Price Stabilization Policies
Lessons from Economic Theory**

By

**Christophe Gouel
INRA – CEPII**

The views expressed are those of the author and do not necessarily reflect
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Food Price Stabilization Policies Lessons from Economic Theory

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Best practices

For the past 30 years, standard international recommendations about price stabilization policies:

- Avoid direct market interventions:
 - Rely on the world market.
 - Rely on a private marketing system.
- Help people to cope with shocks through safety nets.
- Promote market-based risk management instruments.

But market interventions still widespread

- In 2007/08, 68 out of 81 developing countries used trade policy measures (FAO, 2009).
- Countries that weathered the food crisis best have been highly interventionist countries (e.g., India and China).
- Even countries with large Conditional Cash Transfer programs adjusted trade policies before scaling up these programs (e.g., Jamaica, Mexico).

Policy situation

Why this situation?

- Safety nets may not be in place, may be imperfect, or may be difficult to adjust within the time-frame of a food crisis.
- Safety nets are targeted, so part of the population will face higher food prices \Rightarrow relying only on safety nets may be politically difficult.
- It may be less fiscally costly to use export restrictions than to scale up safety nets.



It seems likely that price stabilization policies will be here for a long time.

Questions

How to help in the design of price-stabilization policies?

What are the optimal price stabilization policies?

- What role might trade policy play?
- Are stockholding policies a good answer to food price instability?
- Is there an optimal combination of trade & storage policy?

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Delicate situation for an economist:

- trade policies are known to be non-cooperative and to hurt trade partners;
- storage policies have a mixed record.

I do not advocate the use of price stabilization policies, but if policy makers want to use them I provide tools that allow them to be well designed.

The approach

Inspiration from modern macroeconomics synthesis, and the optimal design of countercyclical monetary and fiscal policies

- **Benchmark**: a small model with microfoundations and rational expectations able to replicate commodity price dynamics: **the competitive storage model** or storage-trade model.
- Introduce a **motivation for price stabilization** (market imperfection, political economy, reduced-form loss function, ...).
- Find optimal policy rules by **maximizing the social welfare function** subject to the constraints implied by private agents' behavior in this market.
 - Different types of policy rules: commitment/discretion/simple rules.

Policy objective

Welfare maximizing government with objective function:

$$\max E_{t_0} \sum_{t=t_0}^{\infty} \beta^{t-t_0} \left[W_t - \lambda (P_t - P^*)^2 \right],$$

where

- W_t is a standard utilitarian social welfare function (sum of surpluses, including the costs of the policies).
- P^* is a target price level (the steady-state price is a natural choice).
- $\lambda \geq 0$ measures the importance assigned to price stabilization in total welfare.

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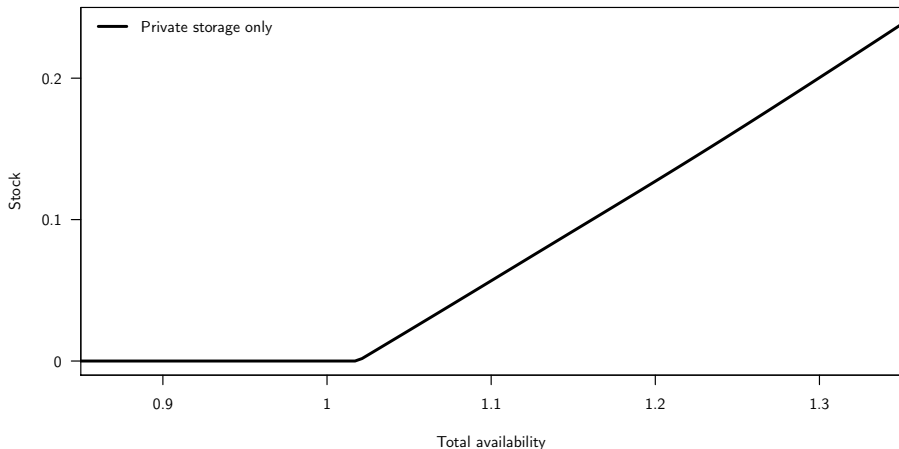
Motivated by the evidence that **countries routinely use trade policies to offset world price deviations from trend** (Anderson & Nelgen, 2012).

Competitive storage in closed economy

If $\lambda = 0$, the optimal storage is the competitive storage outcome.

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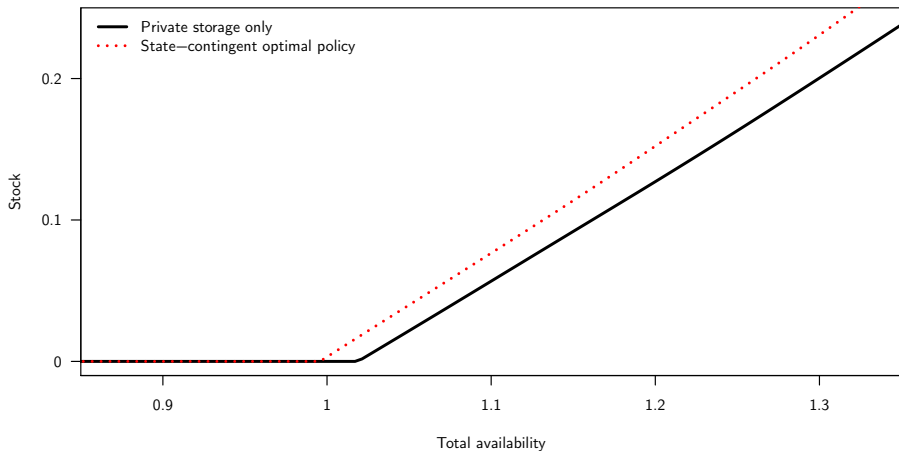


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Consequences of optimal storage in closed economy

- Prices are skewed by the additional storage:
 - Additional stock accumulation reduces the occurrence of low prices;
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- Prices are skewed by the additional storage:
 - Additional stock accumulation reduces the occurrence of low prices;
 - Disposal of stocks cannot prevent all price spikes.
- **Optimal storage is everywhere higher than competitive storage**
 - If the optimal storage level is achieved by public storage \Rightarrow **Complete crowding out** of private storage.
 - The role of public storage is more important than just increasing stock levels beyond competitive levels.
 - Can be achieved by subsidizing private storage \Rightarrow **Make easier the transition to a private marketing system and may ensure more efficient operations.**

Small open economy with permanent trade

In the absence of trade costs or with a country consistently importing or exporting

- Domestic price is determined by world price;
- Stabilization can be achieved using trade policy alone;
- Using a storage policy would be redundant and inefficient for the domestic economy.

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Optimal trade policy

- Trade policies countercyclical to changes in world price;
 - Increase tariff when world price increases
 - Decrease tariff (subsidize imports) when world price decreases.
- Possible bias depending on the difference between the stabilization target and mean world price.

Small open economy sometimes self-sufficient

Gouel & Jean, WBER

In free trade, domestic price sometimes between, but not at, border prices

- Complementarity of the policy instruments:
 - Trade policies are ineffective between border prices;
 - Only storage policies are effective between fob and cif prices;

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 - Storage can help prevent price spikes in open economy, but only if flanked by trade policies.
- The larger the trade costs, the more important storage policy
 - With trade costs twice as high as storage costs in each direction, the trade policy achieves 2/3 of the gains from both policies.

Large open economy

Gouel, Gautam & Martin, case study on India

- The larger the country
 - The more important storage policy;
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- Case study on India:
 - India: large country, self-sufficient in wheat.
 - India uses a lot storage and trade policies to stabilize its domestic markets.
 - Using our framework, we propose optimal policies that should achieve more efficiently the objective of price stabilization. If a high weight is put on price stability:
 - Optimal trade insulation can be very significant, insulation of up to 60% of world price variations, but it never entails export bans.
 - An optimal subsidy to storage could cover all physical storage costs.

Optimal simple rules

- The policy debate is not about complex state-contingent policies, but about simple rules (e.g., price band, constant subsidy to storage, variable levy)
- Optimal state-contingent policies: useful for characterizing what can be best achieved by stabilization policies, but complex and model-dependent.
- Simple rules = rules of public behavior providing a simple feedback between observable variables and policy instruments.

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Advantages of simple rules

- naturally entail commitment;
- allows the delegation of stock management to an independent organization to avoid discretionary public interventions;
- simpler to explain to private agents than state-contingent rules;
- should be more robust to uncertainties.

The performance of optimal simple rules

Optimal simple rules can achieve most of the welfare gains achieved by an optimal policy under commitment:

- In closed economy:
 - A constant subsidy to storage achieves 93% of the gains achieved under optimal policy.
- In open economy (calibrated on the India situation):
 - A constant subsidy to storage combined with countercyclical trade policy (border protection reacts isoelastically to world price)
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⇒ Competitive storers do a good job at stabilizing prices, they just need incentives to do more.

Key policy messages I

- If policy makers insist on using price stabilization policies, numeric storage models are analytic tools that allow comparisons among competing policies.
- Complete insulation from world price and export bans should be avoided
 - But it can make sense to vary trade policies countercyclically to world price to partially insulate from world price movements.
- Storage and trade policies are not easy to coordinate together
 - India used export bans and stockpiled in the middle of the global food crisis, lost large export revenues by pressing on brake and gas at the same time, and further increased the price on world markets. A Beggar-thy-neighbor and thyself policy.

A subsidy to private storage works well with a trade policy as it relies on the ability of private storers to arbitrate prices intertemporally.
- Private storage is key for price stabilization policies

Key policy messages II

- Optimal storage behaves similarly to competitive storage, but with higher stock levels
 - So can be mimicked by a storage subsidy

Thank you for your attention.