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Managing food price instability: Critical assessment of the dominant doctrine



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ABSTRACT

Ever since the late 1980s, the management of agricultural price instability has been dominated both in academic and political circles by a single doctrine. Its domination is so strong that almost all research on this topic has since been abandoned. Based on a very extensive review of the theoretical and empirical literature, this paper provides a critical assessment of this doctrine as applied to grains. An examination of the degree to which the underlying assumptions of the doctrine are confirmed in real grain markets, and the effects generated if they are not, showed that the doctrine substantially underestimates (i) the magnitude of price instability generated by grain markets, (ii) the degree to which farmers and consumers in developing countries are exposed to this instability, and (iii) the resulting effects on welfare (including macroeconomic and long-term consequences). Shifts from doctrine recommendations are therefore justified. In particular, some kind of stabilization of grain prices appears to be necessary, both within developing countries and on international markets.

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1. Introduction

Managing agricultural price instability has been a major concern for policymakers since time immemorial: public grain stocks were already in use in ancient Egypt. The last three centuries have been run through with lively controversies on the best way this could be achieved, as illustrated by the controversy between Galiani and Physiocrats (Galiani, 1770) and that surrounding the US Agricultural Adjustment Act promoted by Henry Wallace during the New Deal (Henningson, 1987; Leuchtenburg, 1963).

This longstanding debate ended in the 1980s when a doctrine (hereinafter the “Doctrine”) began to dominate both in academic and political circles (Newbery and Stiglitz, 1981; Williams and Wright, 1991). Since then, and despite a few discordant voices (Boussard and Delorme, 2007; Dawe, 2001; Poulton et al., 2006; Timmer, 1989) and resisting countries (mainly in Asia), its domination has been so strong that almost all research on this topic has been abandoned. The debate was nevertheless reopened in the 2000s (World Bank, 2005; Von Braun and Torero, 2008) due to the recurrence of food price crises both in the Sahel and the Horn of Africa, and on international markets, but the Doctrine is still extremely dominant and was the main source of inspiration both for the recent report issued by 10 international organizations (FAO et al., 2011) and for the G20 action plan (G20, 2011).

Based on a very extensive review of the theoretical and empirical literature (Galtier, 2013), this paper provides a critical assessment of the Doctrine as applied to grains. To a certain extent, our analysis and conclusions may also apply to other food products, especially if they account for a significant share of household expenditures and if they provide a significant part of the calories or nutrients essential for human health. We will begin by presenting the four pure strategies that can be combined to manage price instability (Section 2) before presenting the Doctrine as a subset of these strategies (Section 3). We will then discuss the degree to which the Doctrine’s underlying assumptions are confirmed on the ground, and the consequences if they are not (Section 4), and this will lead us to draw conclusions for national (Section 5) and international policies (Section 6). The main arguments presented will be illustrated with data from Mali (West Africa).

2. Panorama of the strategies available to manage price instability: the ABCD framework

Price instability can be managed by two non-exclusive approaches: it can either be reduced, or its effects can be buffered. Each of these approaches can be implemented either through market-based strategies or public interventions. Four “pure” strategies are therefore available (see Table 1).

The rationale of strategy A is that improving agricultural markets reduces price instability by (i) facilitating the compensation of surpluses and deficits between regions or countries

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Table 1

The ABCD framework identifies four “pure” strategies to manage price instability. Source: Galtier (2013)

		Goal	
		Stabilize prices	Reduce the effects of price instability
Modality of action	Market-based	Strategy A	Strategy B
	Based on public interventions	Strategy C	Strategy D

(through trade) and between different points in time (through storage) and (ii) rendering production less sensitive to natural hazards (such as climatic shocks, diseases and attacks by pests) and more responsive to price movements.

Strategy B relies on the risk-hedging tools provided by futures markets (mainly futures, call options and put options). These tools allow the covered economic agents to receive financial compensation in the event of a price surge or drop.

Strategy C is based on public interventions to hold the price above a floor and/or below a ceiling by regulating the quantity available on the market. This can be achieved mainly by regulating imports or exports (through taxes, subsidies or quantitative restrictions) or by using public buffer stocks.

Strategy D (also based on public interventions) consists in transferring resources (food, cash, vouchers or assets) to vulnerable households or persons to help them maintain their food consumption level when faced with shocks. D-instruments can be split into two categories: emergency aid (restricted to crisis periods) and structural safety nets (providing regular transfers to recapitalize vulnerable households and thereby increase their resilience).

These different strategies should be considered as “pure” strategies that can be combined.

3. The dominant Doctrine (ABD^-)

3.1. What is the Doctrine?

The Doctrine takes the form of a set of recommendations regarding how to manage price instability. It can be presented easily by using the ABCD framework: its main messages are that strategy C should not be used and that use of strategy D should be restricted (thus the minus sign at the end of ABD^-) by (i) activating transfers only in periods of crisis and (ii) targeting them to food insecure households and persons. Ever since the late 1980s, the Doctrine has dominated both in academic and political circles: the mixed ABD^- strategy it recommends has been widely implemented both inside countries and internationally. In many developing countries (DCs), trade has been liberalized, buffer stocks have been dismantled and rules have been set up to restrict the use of emergency reserves, for instance by conditioning it to alerts by Early Warning Systems and dual signature by government and donors (for Africa, see Coulter and Poulton, 2001). EU CAP and US farm bills have shifted from guaranteed floor prices toward reduced and decoupled aid, and the use of futures markets by farmers has been promoted. On the international scale, the WTO Agricultural Agreement was set up to reduce obstacles to trade, and International Commodity Agreements (ICAs) were almost all dismantled in the 1980s. Although the Doctrine was called into question following the 2008 price

crisis, it is still extremely dominant in both the recommendations of international organizations (FAO et al., 2011; World Bank, 2012a) and the initiatives developed by the international community (G20, 2011).

3.2. The theoretical foundations of the Doctrine

The Doctrine is supported by a body of theoretical works: the model proposed by Newbery and Stiglitz (1981) showed that public interventions to stabilize commodity prices are unlikely to improve social welfare, and the same result was found 10 years later by Williams and Wright using a model that better represents storage. This model became the theoretical basis of the Doctrine. It shows that agricultural markets generate the optimum level of price stability: given trade costs, storage costs, price-elasticity of production and production sensitivity to natural hazards, the magnitude of price instability generated by the market (ΔP^*) coincides with the optimum level of price instability (ΔP_{opt}^*). Therefore, the A-strategy is sufficient to reach the first best. This (strong) result rests on several assumptions:

A1: price instability stems exclusively from exogenous shocks (not from the endogenous dynamics of the market).

A2: storers are risk-neutral (storers means all private stakeholders who hold stocks, and may refer to farmers, farmer organizations, traders, processors, importers or exporters).

A3: farmers are risk-neutral.

A4: consumers are little affected because the product considered accounts for a negligible proportion of their expenditures.

Other assumptions – not discussed here – are that the market is competitive (when this is not the case, there is room for stabilization policies as shown by Newbery, 1984) and that price instability does not affect balances of payments (this can occur when the considered product accounts for a significant share of some countries' export earnings or import expenditures and is likely to have major consequences on welfare, see Kanbur, 1984; Dawe, 1996).

Does the Williams and Wright model demonstrate that agricultural markets are enough to manage agricultural price instability? The answer is no, because assumptions A2, A3, and A4 are obviously not satisfied: storers and farmers are risk-averse, and some agricultural commodities account for a significant share of some households' expenditures (the case of A1 is more ambiguous as we will see later on). When these assumptions are relaxed, agricultural markets alone no longer provide an optimum solution to price instability, as shown by Gouel (2011) for A4 (the same result was obtained for the Newbery and Stiglitz model, see Newbery, 1989). It is for this reason that the Doctrine proposes to (i) buffer the effect of price instability on farmers and traders through recourse to risk-hedging tools (CRMG, 2008; Larson et al., 2005; Varangis et al., 2002) and (ii) protect food insecure consumers through food or cash transfers (strictly targeted and activated only in periods of crisis, in order to save costs and reduce market distortions).¹ Whereas the A-strategy is optimum if assumptions A1–A4 are satisfied (Williams and Wright, 1991), the broader, mixed ABD^- strategy promoted by the Doctrine is optimal if the following (less restrictive) set of

¹ Consumers do not benefit from the same buffering mechanisms as farmers: they do not benefit from “natural insurance”, it is unrealistic for them to use futures markets (because the quantities they buy are too small) and food markets are far less efficient at smoothing spikes than collapses (see Williams and Wright, 1991). Which is why some kind of public intervention is necessary to protect them.

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