POLITICAL ECONOMY RESEARCH INSTITUTE
PERI
University of Massachusetts Amherst

Towards a Post-neoliberal Stabilization Paradigm:
Revisiting International Buffer Stocks in an Age of Overlapping Emergencies Based on the Case of Food

Isabella Weber and Merle Schulken

June 2024

POLITICAL ECONOMY RESEARCH INSTITUTE

WORKINGPAPER SERIES

Number 602

Towards a Post-neoliberal Stabilization Paradigm: Revisiting International Buffer Stocks in an Age of Overlapping Emergencies Based on the Case of Food

Isabella M. Weber*

Merle Schulken

Abstract

The neoliberal stabilization paradigm of interest rate hikes and austerity left economies around the world unprepared for the shocks to essentials experienced in the overlapping emergencies of war, conflict, climate change, and pandemic. This presents a window of opportunity for a paradigm shift. Neoliberalism became hegemonic through stabilization policy. Post-neoliberalism will require an alternative stabilization paradigm. In this paper we revisit the classic reasoning for buffer stocks by Keynes, Kaldor, Graham, and others as a starting point for this paradigmatic shift. At the core of the neoliberal stabilization paradigm are the assumptions that competitive markets are efficient and that relative price changes ought to be separated from macro-outcomes. In contrast, buffer stock reasoning starts from the inherent instability and inefficiency of commodity markets. Price volatility in essential commodities can lead to sellers' inflation because of the interaction with administered prices in the industrial sector and can hamper growth and development prospects. We illustrate that the buffer stock reasoning can help understand the 2020-2023 world food price crisis and propose a multi-layered buffer stock system for food staples as a steppingstone in a gradualist transition to post-neoliberalism and a tool for a green transformation of agriculture.

Keywords: Inflation, post-neoliberalism, food, stabilization policy, climate change, development

Acknowledgements: We are grateful for funding of this research by the Heinrich-Böll-Stiftung, TMG Think Tank for Sustainability, and Rosa-Luxemburg-Stiftung. We are indebted to our interview partners who have kindly shared their insights with us in long and detailed conversations. We would like to thank Cornel Ban, Lena Bassermann, Alexandros Kentikelenis, Lena Luig, Gregor Semieniuk, Quinn Slobodian, Jan Urhahn, and the participants of a workshop on post-neoliberal global governance of the History and Political Economy Project for helpful comments on an earlier version of this paper.

Introduction

The world has entered an age of overlapping emergencies. Climate change is a reality in the here and now. Extreme weather events are occurring with greater frequency and intensity and are more likely to affect multiple world regions at once (Kornhuber *et al.*, 2023). This has potentially far-reaching

consequences for economic activity, for example reducing agricultural yields and disrupting transportation and energy systems (Markolf *et al.*, 2019; Mehrabi, 2020). At the same time, the geopolitical order is becoming increasingly unstable. In 2023 the Global Peace Index deteriorated for the 9th consecutive year (Institute for Economics & Peace, 2023). In this global constellation supply shocks become frequent.

The experience since the COVID-19 pandemic demonstrates that if shocks hit systemically important sectors like energy, food, transportation, or housing they can trigger sellers' inflation (Weber *et al.,* 2022; Weber and Wasner, 2023). Price and profit spikes in upstream sectors like commodities, energy, and shipping are cost shocks to downstream firms. These cost shocks coordinate price hikes as firms seek to protect their profit margins. It is this pricing behavior of sellers' that translates local shocks into a generalized inflation that is for the larger part accounted for by profits.

For now, the neoliberal policy of interest rate hikes has been the predominant if not exclusive policy response to inflation. But even believers of the neoliberal stabilization paradigm will have to eventually concede that frequent shocks to systemically important sectors cannot be addressed with a proverbial "cold turkey" every time. In fact, rich countries have already complemented the neoliberal playbook with fiscal expansion (US) and various forms of energy price controls (Europe) (Dao *et al.*, 2023). For the worlds' poorest countries rate hikes are devastating and they lack the fiscal and policy space for such complementary measures.

Neoliberalism became hegemonic first as a new stabilization regime. Post-neoliberalism will require an alternative approach to stabilization. We argue that in an age of overlapping emergencies such a new paradigm requires a refocusing on stabilization policies for essential sectors that have the potential to unleash systemic instabilities when hit by shocks. We revisit the classic case for public buffer stock systems of Keynes (1938, 1971c [1926], 1971b [1923], 1971a [1930], 1974 [1942]), Kaldor (Hart *et al.*, 1980 [1963]; Kaldor 1934, 1976, 1980b [1962], 1980a [1952], 1987), Graham (1937, 1944) and others. The buffer stock question in their analysis is not just a tool but provides an alternative theoretical perspective. The classic case holds that commodity markets are inherently unstable and hence inefficient even when perfectly competitive. They see public storage to dampen price and quantity fluctuations at the sectoral level as key to global macro stabilization. We show that at the critical 1970s juncture such buffer stocks were part of the New International Economic Order

(NIEO) agenda and presented a real alternative to the neoliberal road but were ultimately questioned by neoclassical welfare analysis and crushed by the Federal Reserve's sharp interest rate hike in 1979 (the so-called "Volcker Shock"), and the market fundamentalist liberalization and privatization conditionalities of the Washington Consensus.

We argue that the neoliberal policy paradigm centered on free prices left people and economies unprepared for the mega shocks of overlapping emergencies in recent years, while benefitting gigantic corporations. To illustrate this point, we present the case of food. Using the reasoning of the classic case for buffer stocks and drawing on 25 interviews with businesses and unions in the food sector, agricultural policy experts, food bank representatives, and academic food system experts from Global South and Global North countries, we argue that food price spikes are inefficient and lead to devastating humanitarian and macroeconomic outcomes. We present a case for a multi-layered and internationally coordinated public buffer stock system for food staples as a first important step towards a post-neoliberal stabilization paradigm.

The Classic Case for Global Buffer Stocks: Sectoral Stabilization for Growth and Development

The economic case for buffer stocks has its origins in Chinese statecraft with the ancient so-called *ever normal granary*. The basic operating principle of such a public stockholding facility was for the state to participate in the market in order to stabilize the price of grain. The public granaries were meant to buy in times of good harvests when prices are low and re-sell on the open market when grain supplies decline with the seasons and prices increase or to address poor harvests and disasters that trigger price spikes (Weber, 2021b, 2021a). The *ever normal granary* became a model for buffer stocks envisioned as part of the stabilization policy toolbox when modern macroeconomics emerged in the interwar period (Fantacci, 2012; Woods, 2022). Roosevelt's New Deal administration implemented what was called an American ever normal granary (Bodde, 1946).[1] In a rare agreement, both Keynes and Hayek endorsed aspects of a plan for a global buffer stocks system laid out by Benjamin Graham that was envisioned as a cornerstone of the postwar global governance system

[1] The New Deal Ever Normal Granary did not primarily rely on public storage but provided loans to farmers for storage unlike its Chinese antecessor that combined participation in the grain market through public granaries with loan policies. The US government still controlled the amount of product in storage by setting the terms of these loans, incentivizing stockholding, and limiting lands for agricultural cultivation, but the products were for the most part stored by private market participants.

(Graham, 1944; Hayek, 1948; Keynes, 1974 [1942]).[2] Although ultimately not implemented under the Bretton Woods system, proposals for global buffer stocks remained an important pillar of macroeconomic stabilization in the work of leading economists of the postwar era like Nicholas Kaldor and Jan Tinbergen (Hart *et al.,* 1980 [1963]; Kaldor, 1976).

In this section we introduce three key elements of the case for global buffer stocks drawing on classic contributions.

1. Threat of shortages of essentials

The classic case for buffer stocks starts from the recognition that some goods are more essential than others for human livelihoods or for the production system taken as a whole (FAO, 1946; Graham, 1937; Woods, 2022). The concept of essential is akin to Sraffa's basic commodity or the more recent discussions around critical inputs and systemic importance (Weber *et al.,* 2022). The idea is that there are things that people or producers cannot do without. The threat of a shortage or the lack of access to these goods has systemic implications.[3]

For example, as the recent energy crisis has illustrated for the German economy, oil, gas, and coke products make up one group of commodity inputs that are essential for price stability and export competitiveness until renewable energies are sufficiently built out and thus affect the production system as a whole (Krebs and Weber, 2024; Weber, *et al.*, 2024). Providing adequate access to energy at the level of the individual is also essential for securing human livelihoods. Food commodities represent another group of commodities that are essential both for price stability and for human livelihoods (ibid.; Weber *et al.,* 2022).

Goods can also be rendered essential if a country's economy depends on its export revenues to ensure the livelihoods of its citizens, as is the case for commodity export dependent Global South countries (Kaldor, 1980b [1962]). Out of 134 low- and middle-income countries, 97 are net food importers, out of which 60 are highly commodity export dependent (FAO *et al.,* 2019, p. 64). Movements in commodity prices affect the relative prices of these countries' exports and imports, potentially draining foreign exchange reserves, causing a devaluation of the currency, or resulting in

[2] See Telles (2023) for a review of the debate between Keynes and Hayek on plans for a world commodity reserve currency.

[3] See Weber *et al.* (2022) for a formal analysis of pathways to systemic significance using input-output modeling.

economic disruptions that affect people's incomes (ibid.). A fall in export commodity prices can thus reduce these countries' ability to purchase essential commodities like staple foods on international markets and disrupt their domestic economies making it harder for vulnerable groups to access essentials.

Buffer stocks can help ameliorate the threat of a shortage of durable essentials by ensuring the availability of physical supplies across time and space. They also aim to ensure accessibility of essentials by preventing prices from spiking up too high or a collapse of incomes from prices dropping too low. By contrast, emergency reserves for example of food or medical supplies only aim to prevent physical shortages. As Amartya Sen (1982) reminds us in his canonical work on famine prevention, deprivation can be caused not only by physical shortages but also by a lack of economic access to essentials by groups that see a collapse or lack of income or are priced out. Buffer stocks address the price part of this problem for all consumers and the income part for agricultural producers. They are a complementary tool to measures that ensure sufficient incomes for all groups. Buffer stocks are also not suited for all essentials but can be used for sufficiently homogenous, storable commodities that allow for countercyclical purchase and sale on the part of a stockholding system.

2. Inherent instability of commodity markets

The classic microeconomic case for buffer stocks rests on the observation of an inherent instability in commodity markets. As Kaldor reminds us, the "economic function of a rise in price is to encourage producers and to discourage consumers; that of a fall in price is the opposite." (Kaldor, 1980a [1952], p. 65). This is what should lead to equilibrium in standard theory. But if the supply adjustments to the price signal are slow, there may never be an equilibrium. Reasons for slow supply adjustments include high capital intensity of production and a time lag between production decisions and sale (Keynes, 1971c [1926]). The result can be an over- and undershooting of prices and quantities in a cobweb dynamic (Kaldor, 1934; Tinbergen as in Ezekiel, 1938). Depending on the elasticities of supply and demand, this dynamic can result in a continuous oscillation around an equilibrium; an explosive spiraling out of equilibrium; or a convergence to equilibrium (Figure 1a-d; Ezekiel, 1938; Tinbergen, 1930).

As Ezekiel points out, the cobweb theory implies a crucial departure from standard neoclassical theory which "rests upon the assumption that price and production, if disturbed from their

equilibrium, tend to gravitate back toward that normal" (1938, pp. 278-279). In contrast, "the cobweb theory demonstrates that, even under static conditions, this result will not necessarily follow" (ibid., p. 279). Even in commodities that follow the convergent dynamic (Figure 1c), if for example due to weather shocks, "abnormally large or small crops… cause a marked departure from normal" and start again and again "a series of convergent cycles", stability might never be reached (ibid., p. 273). Simply put, the invisible hand can fail to bring about efficient resource allocation. This is not the result of market imperfections but is the likely outcome under perfect competition if there is a time lag (ibid., p. 280).

Storage can in principle overcome the slowness of adjustment. But as Keynes argues: "It is an outstanding fault of the competitive system that there is no sufficient incentive to the individual enterprise to store surplus stocks of materials, so as to maintain continuity of output and to average…periods of high and of low demand" (Keynes, 1938, p. 449). The reasons for a socially suboptimal level of private storage are (Keynes, 1938): First, the cost of holding stocks. Second, a lack of incentive for firms that use the commodity as an input to hold large stocks in excess of current production needs since their output prices tend to move *with* their key (commodity) input prices on their way up. Third, the co-movement between macroeconomic fluctuations and commodity prices amplify the risk of holding large inventories.

Private speculators can increase storage, but they do not fix the problem of endogenous instability in Keynes' view. The speculators' liquidity fluctuates with the macroeconomy and they tend to be reluctant to buy stocks in a downturn (Keynes, 1938, 1971b [1923]). Speculation can hence exacerbate fluctuations due to procyclical expectations and herd behavior (Keynes, 1938, 1971c [1926]). Keynes held that the trading of commodity futures can help stabilize the prices that producers receive but does not stabilize fluctuations in spot prices as it does not resolve the time-lag and elasticity issues that make commodity markets inherently unstable (Keynes, 1971a [1930]). Hence, public stockholding is necessary to overcome the slowness of supply and demand adjustments and stabilize commodity markets.

3. Macroeconomic instabilities from microeconomic fluctuations

The possibility of cobweb dynamics in commodity markets implies at the level of the economy as a whole that there is "no 'automatic self-regulating mechanism' which can provide full utilization of resources" and "unemployment, excess capacity, and the wasteful use of resources may occur even

when all the competitive assumptions are fulfilled" (Ezekiel, 1938, pp. 279-80). In addition to inefficient use of resources, the classic macroeconomic case for buffer stocks rests on the observation that large price swings in essential commodities can destabilize the whole economy while depressing the terms of trade of commodity exporting countries and introducing a long-term trend toward global economic stagnation (Graham, 1937, 1944; Hart *et al.,* 1980 [1963]; Kaldor, 1976, 1980b [1962]). This argument is derived from a two-sector model.

The two sectors may refer to the urban-industrial and the agricultural-rural sectors within one country or to commodity exporting countries and industrialized countries. The dynamic between the two sectors hinges on their different pricing regimes (Kaldor, 1976).[4] In the primary sector, sellers are price takers. In contrast, sellers of industrial products are price makers with administered prices, i.e. cost plus mark-up pricing when costs move up and holding the line pricing when costs fall. In the primary sector, shifts in demand or supply result in price fluctuations. In the industrial sector, shifts in demand or supply are met with quantity rather than price adjustments – either by accumulating/depleting inventories or by hiring/laying off additional workers.

The implication of the difference in the price mechanisms is that "*any* large change in commodity prices – irrespective of whether it is in favor or against the primary producers – tends to have a dampening effect on industrial activity" (Kaldor, 1976, p. 706). A fall in commodity prices does not lead to a fall in industrial prices as firms resist lowering prices and workers resist falling real wages. The resulting decline in the purchasing power of the primary sector and the lower rate of investment in that sector reduces the demand for the industrial sector which slows down growth pushing commodity prices down further (Hart *et al.,* 1980 [1963]). Instead of stimulating demand, a collapse of commodity prices caused by a recession in the industrial sector may induce a depression and deflation, as in the case of the Great Depression in the United States (Kaldor, 1976).

An increase in the prices of primary goods does not benefit the primary sector or global growth in a sustained way either as the example of the commodity price boom and ensuing stagflation of the 1970s illustrates (Kaldor, 1976). Due to the price-setting power of industrial firms, a primary sector cost shock unleashes in industrial countries a process recently reintroduced as "sellers' inflation" (Weber and Wasner, 2023): the cost increase is "passed through the various stages of production

[4] For a more formal treatment of Kaldor's model, see Kanbur and Vines (1986) and Spraos (1989).

into the final price with an exaggerated effect – it gets 'blown up' on the way by a succession of percentage additions to prime costs which mean, in effect, an increase in cash margins at each stage." (Kaldor, 1976, p. 706). Higher industrial goods prices diminish the improvement in the terms of trade that the primary sector experienced as the prices for its goods went up. If governments in industrialized countries respond to sellers' inflation with macroeconomic tightening aimed at dampening demand, this slows growth in industry and thus brings down commodity prices again (Kaldor, 1976).

The income from high commodity prices on the part of primary producers could in principle offset some of the decline in demand from industrial countries' austerity. But commodity incomes often take the form of profits that do not necessarily flow into domestic consumption or investment (ibid.). With unpredictable commodity prices, producers are less able to make long-term investments (Kaldor, 1987 [1983], p. 554). Similarly, fluctuating export revenues inhibit long-term economic policy-making in exporting countries, stifling investment (Kanbur, 1984, p. 351) This can be detrimental for long-run prosperity (ibid.).

Stabilizing commodity prices thus creates a win-win for industrial and commodity-dependent countries by improving global macroeconomic stability and growth. The primary sector receives more predictable revenue streams and better terms of trade vis a vis the industrial sector. And the industrial sector gains a source of counter-cyclical demand from the primary sector and avoids taking costly measures against cost-push inflation. From this macroeconomic perspective buffer stocks are a key ingredient for "the harmonious development of the world economy" (Kaldor, 1976, p. 707).

Since commodity markets are global, the preferred level of operation of buffer stock proponents has tended to be international. The accumulation of stocks should start off when the relevant commodities are in excess supply and was meant to be financed by issuing an international currency against these stocks (Graham, 1944; Hart *et al.,* 1980 [1963] pp. 146-151; Hayek, 1948 [1943]; Keynes, 1974 [1942], p. 304).

In some proposals a buffer stock agency would issue an international currency to purchase commodities and "destroy" the currency as it sold commodities back into the market (e.g. in Graham, 1944; Hart *et al,*. 1980; Hayek, 1948). In other proposals money creation was left to a

separate international institution or to national governments and central banks (Keynes, 1974 [1942]). Independent of the institutional arrangement liquidity on international markets would increase countercyclically providing an automatic macroeconomic stabilizer: when commodity prices fall during a global downturn the agency buys commodities to prop up prices and this requires the issuing of currency, and during a commodity boom in the economic upswing it sells which absorbs liquidity. Such an international commodity reserve currency has also been seen as a potential solution to global monetary management (Ussher, 2009). Financing for the buffer stock authority was extended through an overdraft facility or by governments or central banks cooperating in holding shares in the buffer stock as reserves.

Opinions diverged on whether a global buffer stock system would need to be holistic from the start stabilizing an index of commodity prices as Graham, Hayek, and originally Hart, Kaldor and Tinbergen proposed, or whether a more gradualist approach could be pursued in the building up of such a system where an international agency would stabilize individual commodity prices – which is what Keynes and later also Kaldor tended towards. Another dividing line among buffer stock proponents has been the question of rules versus discretion akin to the old debate around central banks' monetary policy. Hayek (1948 [1943]), for example, as is characteristic for the neoliberal policy nihilism advocated for a rule that would mimic the gold standard. Keynes (1974 [1942]) leaned towards policy activism and discretion not only in monetary policy but also in the management of buffer stocks.

The New International Economic Order and the Rise of the Neoliberal stabilization paradigm

Global buffer stocks as a path-not-taken in the 1970s

The question of the management of essential commodities returned to the international agenda in the wake of the collapse of the Bretton Woods system and the commodity price shocks (Gilman, 2015; Toye, 2014, pp. 44-47). A mix of declining agricultural productivity growth and droughts had drawn down the surplus stocks of food commodities in the United States and the European Economic Community (Shaw, 2007, pp. 115-121). When crops failed in multiple parts of the world at once in 1972, grain prices shot up, coinciding with a rise in oil prices due to OPEC's pricing decision and a more general price increase for commodities (Cooper *et al.*, 1975; Garavini, 2019). The price shocks set off a cost-push inflation in the Global North and contributed to famine and

balance of payment problems in many Global South countries while creating large revenue streams to oil exporters (Labys and Maizels, 1993; World Bank, 1982). In this context, the macroeconomic case for buffer stocks gained new relevance. In terms of politics, newly independent Global South countries gained the majority of votes in UN institutions. Encouraged by OPEC's success in unilaterally instituting higher oil prices, Global South countries organized through the Group of 77 started to coordinate more forcefully on economic issues (Corea, 1992, 27; Toye, 2014, pp. 43-56). Faced with domestic inflation and the threat of commodity cartels, rich country governments opened up to negotiations (Cline, 1979).

Global South countries struck a first victory with the adoption of the declaration on the establishment of a New International Economic Order (NIEO) by the UN General Assembly in 1974. An International Program for Commodities (IPC) introduced by UNCTAD and to be financed through the creation of a Common Fund (Cline, 1979; UNCTAD, 1977) became a cornerstone of the NIEO agenda. Buffer stocks for two groups of essentials were envisioned: commodities in which Global South countries were import-dependent, importantly grain, or export-dependent, for example cocoa, coffee, jute, sugar, and minerals (UNCTAD, 1977). At the World Food Conference in Rome in 1974, countries agreed on the International Undertaking on World Food Security. This resolution declared intentions to negotiate a reserve system of nationally held but internationally coordinated stocks of staple foods (UN World Food Conference, 1974). A United States proposal for an international grain reserve system covering wheat and rice was negotiated throughout the 1970s (Cline, 1979; Gulick, 1975; Sarris *et al.*, 1979).

In the end, the initiatives of the NIEO were short-lived and discussions about commodity price stabilization were no exception. The negotiations about the grain reserve showed promise of being concluded towards the end of the 1970s but ultimately failed to identify a target price for stabilization that was acceptable to all parties (Cline, 1979; Friedmann, 1993). Negotiations on the Common Fund of the IPC dragged on far longer than expected (the Fund was not fully ratified until 1988) and in absence of this financing vehicle only few International Commodity Agreements were concluded, none of which featured price stabilization (Corea, 1992, pp. 140-145). Had the political and structural conditions that catalyzed the creation of the NIEO lasted another decade, perhaps agreements could have been reached (Corea, 1992, pp. 153-162).

The plans for commodity price stabilization had been careful to highlight the win-win case for importers and exporters, Global North and Global South countries alike. The classic case for buffer stocks with its focus on the inherent instability of commodity markets and global macroeconomic benefits from stabilization dominated the policy imaginary and measures for price stabilization were understood to operate within a broader policy framework of North-South cooperation and growth. But negotiations about who should contribute to financing stocks, within which bands prices should be stabilized, the size of the required stocks and hence the cost led to a paradigmatic shift from the classic framework to neoclassical welfare analysis (Brown, 1980, pp. 100-137; Cline, 1979; Corea, 1992, pp. 136-163), which ultimately paved the way for neoliberalism.

Neoclassical welfare analysis as a slippery slope towards neoliberalism

The application of neoclassical welfare analysis to assess commodity price stabilization schemes was nothing new in the 1970s (Kaldor, 1980a [1952]; Massell, 1969; Oi, 1961; Waugh, 1944), but in the 1970s welfare analysis became a crucial political battleground in the negotiations over the IPC and Common Fund. Where the classic case for buffer stocks stressed that the behavior of rational agents in competitive markets can lead to socially sub-optimal dynamics at the macroeconomic level, the neoclassical analysis represented the aggregate through a representative agent (Turnovsky, 1978). This eliminated the socially suboptimal outcomes of commodity price volatility of the classic case by assumption. Cobweb dynamics were replaced altogether by returning to standard theory assuming instantaneous adjustments to equilibrium (e.g. Brook and Grilli, 1977). Oscillation and divergence dynamics, i.e. the movement of market prices around an equilibrium price or away from an equilibrium price as explained in section 2 (see Figures 1a, b), were ruled out with assumptions about rational expectations paving the way for the efficient market hypothesis (Muth, 1961; Smith, 1978).

On the back of the neoclassical assumption that markets converge to equilibrium, the problem of insufficient storage and price volatilities was reframed as one of market imperfections. Incomplete futures and insurance markets, price rigidities, asymmetric information, trade restrictions, excessive speculation, or the threat of government intervention were seen as the causes why commodity markets did not settle in equilibrium (Labys, 1978; Newbery and Stiglitz, 1981; Sarris and Taylor, 1978; Wright and Williams, 1982; Smith, 1978). The focus in the assessments of the size of buffer stocks was now on crowding out private storage as rational market participants would account for the public stockholding which implied that buffer stocks would need to be prohibitively large to

effectively operate (Hallwood, 1977; Helmberger and Weaver, 1977; Miranda and Helmberger, 1988; Newbery and Stiglitz, 1981, pp. 37-38).

The Kaldorian two sector model of the world where commodity price shocks could translate into cost-push inflation along the supply chain was replaced with a general equilibrium model where the incidence of price instability in one goods market is (partly) offset by shifts in other markets (Kanbur 1984, p. 347; Newbery & Stiglitz, 1981, p. 19; Smith, 1978). This largely insulated the macro-outcome of a change in the general price level from volatilities in relative prices and inflation became a matter of macro policy alone (Weber *et al.,* 2024). The abandonment of assumptions about different sectoral pricing regimes also eliminated the theoretical possibility of systematically depressed terms of trade for commodity exporters. Overall, the lack of a dynamic analysis of development over time in the static world of the microeconomic models meant that global win-win dynamics became inconceivable.

The early cost-benefit analyses still found that when consumers and producers are considered together, more stable prices are always welfare enhancing (Massell, 1969; Turnovsky, 1978). However, the gains from stabilization are distributed unequally in neoclassical welfare analysis with either consumers or producers losing income to the other group in the long run. Unless one group compensates the other, price stabilization thus turns into a tale of winners and losers. Empirical studies soon suggested that, contrary to policymakers' expectations, for many of the commodities suggested for UNCTAD's IPC, Global South countries stood to lose in the long run while Global North countries were the net winners of stabilization (Brook and Grilli, 1977; Labys 1978; Newbery and Stiglitz, 1981, pp. 43-47). However, results were extremely sensitive to model specifications, which implied that the findings of different studies were inconclusive (Behrman, 1979; Sarris *et al.*, 1979).

Despite this conceptual shift that proved consequential in the long run, the assessment of economists at the time was by no means an outright dismissal of the IPC. Even the ordoliberal Donges (1977), for example, identified by Cline (1979, p. 5) as one of the most hostile voices on the NIEO saw some benefits in commodity price stabilization. Many authors of microeconomic studies at the time were transparent about the limitations of their approach and thus refrained from making definitive statements about the desirability of buffer stock schemes (Brown, 1980; Newbery and

Stiglitz, 1981; Brook and Grilli, 1977). It is only under neoliberalism that the dismissal of buffer stocks became a default position.

But neoclassical welfare analysis came to pave the way for the neoliberal dictum of the primacy of free prices plus cash compensation (Jäger and Zamora Vargas, 2023; Krebs and Weber, 2024; Weber, 2018) by overruling the classic perspective of inefficient price fluctuations. Instead of seeing price stabilization as a goal due to its benefits for growth and development, welfare analysis shifted the focus to alternative policies meant to address negative consequences of commodity price instability while preserving the full fluctuation of market prices that were now seen as efficient signals as long as imperfections were removed (Brook and Grilli, 1977; Newbery and Stiglitz, 1981, pp. 12-16). From this neoclassical stance, recommended policies at the domestic level included removing market imperfections with better and more long-term futures markets, improved access to credit markets and crop insurance, while relying on cash transfers to low-income consumers and producers where necessary (Newbery & Stiglitz, 1981, pp. 41-43). At the international level, better information and trade liberalization should improve competition while compensatory financing provides foreign exchange resources to Global South countries when they experience a shortfall of export revenues (ibid. p. 14, pp. 41-43; Brook and Grilli, 1977).[5] Goals like improving the ability of producers to plan investments thanks to more stable prices; ameliorating inflationary pressures or contributing to stable aggregate demand were downgraded to positive externalities of a buffer stock scheme to be considered in addition to the main, welfare economics analysis (Smith, 1978; Sarris *et al.*, 1979; Behrman, 1979) – just to be dropped before too long.

The failure of the NIEO and the rise of neoliberalism

The Volcker Shock in 1979 put an end to the rich country rationale for commodity price stabilization as a tool to fight inflation and restore growth. The Fed's decision to sharply increase primary interest rates engineered a deep recession in the United States (Panitch and Gindin, 2021, pp. 163-195). Together with fiscal austerity policies this broke the power of labor unions in the Global North (ibid.). Hopes for win-win solutions were replaced with a policy that reasserted dollar hegemony and brought a debt crisis to the global South. With rising interest rates and falling export

[5] To be sure, demands for better compensatory measures were also part of the NIEO proposals but were seen as necessary complements to price stabilization, not as alternatives (Corea 1992, p. 16; UNCTAD, 1977).

revenues and exchange rates, a crisis ensued as both public and private actors in the Global South became unable to service their debt (Toye, 2014, pp. 64-66). The contraction of domestic demand in the Global North, limitations imposed on official aid, and a drop in private capital flows created recessions around the world (Corea, 1992, pp. 136-162).

During the slow recovery in the Global North countries and a 'lost decade' for large parts of Africa and Latin America, commodity prices did not rebound (Corea, 1992, pp. 136-163; Maizels, 1992, pp. 9-20). Matters were made worse when Global South countries scrambled to make up for falling foreign exchange revenues by increasing their production of commodities, thus further depressing prices (ibid.). In the absence of alternative economic mechanisms as envisioned under the NIEO, many Global South countries became dependent on IMF and World Bank loans which subjected them to conditionalities and structural adjustment programs spreading the neoliberal stabilization paradigm internationally under the Washington Consensus (Babb and Kentikelenis, 2018). Global South countries saw their Cereal Boards and domestic price stabilization systems dismantled (e.g. Uganda, Zimbabwe) or considerably weakened (e.g. Kenya) as part of structural adjustment programs (Interviews 12, 13, 14, 20). Repeated devaluations of domestic currencies and a focus on producing more commodities for export to pay back debts and to align production with what was seen as the revealed comparative advantage pushed commodity prices further down (Gilbert 1989). The few commodity agreements that were in place, such as the international cocoa, coffee, rubber, sugar, and tin agreements, helped to cushion the blow of falling commodity prices initially but could not be sustained against persistently depressed prices and without domestic counterparts (Gilbert 1996).

In contrast, some of the most successful cases of development in recent decades, the Asian Tigers and China, relied heavily on domestic buffer stocks as part of their development strategy (Dawe, 2001; Dawe and Timmer, 2012; Weber, 2021a). The European Union and the US reduced but never abolished their price support interventions in agriculture (European Commission, 2024; USDA, 2024; Interview 1). But as the logic of the classic case for buffer stocks vanished under neoliberalism, essential commodities have not been considered as an integral part of macroeconomic stability and in the EU and US these stabilization operations occur in the shadows of official economic policies. All that is allegedly needed for economy-wide stability is monetary policy and fiscal discipline, while efficient price signals ensure socially optimal outcomes.

Towards a Post-Neoliberal Stabilization Paradigm: The Case of Food Staples

Food staples are the most essential of the essentials. Most people depend on maize, wheat, and rice to achieve minimum levels of dietary energy requirements (IMF, 2023). Price increases in these staples can destabilize whole societies and economies (Fischer, 1999, Interviews 12, 13). This has become once more salient in the world food crisis 2020-2023. We have hence picked this sector to illustrate the case for a post-neoliberal stabilization paradigm following the classic buffer stock reasoning. In the food sector, the neoliberal playbook has been implemented since the 1980s. This is reflected in recommendations for agricultural trade liberalization and a scaling back of market interventions (OECD, 2023; World Bank, 2012, pp.117-136); a reliance on lump-sum payments (Díaz-Bonilla, 2021; Galtier and Vindel, 2013, pp. 35-37); and an expansion of future markets and crop insurances (ibid.; Beaujeu, 2016; FAO *et al.,* 2011) to handle price volatility. But this approach relies on the assumption of efficient price signals and a separation of relative price changes and macro-outcomes. We show that both are not warranted.

Food price spikes are not efficient

After low and stable food prices in the 1980s and 1990s, food prices and volatility have increased since the beginning of the century (Ahmed *et al.,* 2014; Figure 2a). This culminated in the 2007-2008, 2010-2012 and the 2020-2023 food price crises (see Figure 2). Most food experts acknowledge a general tendency of food prices to be volatile (Kalkuhl *et al.*, 2016; Kharas, 2011). Small changes in quantities lead to large price swings due to low supply and demand elasticities while natural shocks such as weather and pests frequently affect agricultural output (FAO *et al.*, 2011). Yet, the origins of food price volatility continue to be interpreted from competing theoretical vantage points (Gouel, 2012). There are two basic models: endogenous instability in a cobweb dynamic driven by lagged adjustments and forecasting errors which justifies government intervention (classic case); and rational expectations where instability results from exogenous shocks and government intervention disturbs price signals (neoliberal) (ibid.). The rational expectations model holds that "in recurrent situations the way the future unfolds from the past tends to be stable, and people adjust their forecasts to conform to this stable pattern" (Sargent, 2022). We argue that if patterns ever were stable, situations are certainly not recurrent and there are no such stable patterns in times of overlapping emergencies. We are in Keynes' world of fundamental uncertainty, herd behavior, and

animal spirits. In this world, price explosions are not efficient signals that result in socially optimal outcomes.

Empirically, it is challenging to pin down the precise combination of drivers of the recent food crisis when prices reached historic highs (see Figure 2). Several national and international short-run factors overlapped and structural features of the system helped fuel the price explosion (Algieri *et al.*, 2023). In 2020-2022, global production and stock levels were in principle adequate in contrast to the 2008 crisis, but food prices spiked in response to the uncertainty (Ghosh, 2023; IPES-Food, 2022; van Huellen and Ferrando, 2023). Food prices were on the rise in 2021 following pandemic-related supply chain disruptions. In 2022, in response to *anticipated* supply shortages resulting from the Russian invasion of Ukraine, one of the world's most important producer of grain and seed oils, prices jumped (Kornher and von Braun, 2023).

While the Russia-Ukraine war led to temporary local threats of physical shortage in countries that primarily rely on grain imports from these regions, the global supply of grain, was still more than high enough to cover global demand in the medium-run (IPES-Food 2022, p. 10). What ultimately threatened people's access to grain was not necessarily the pace of adjusting shipping routes to import grain from new destinations but also the spike in grain and shipping prices on the international market that resulted from uncertainty about supply conditions and speculation (ibid.). It used to be considered a rule of thumb that the price goes up when storage in key countries goes down. But this has been questioned since the financialization of the 2000s. Even believers in the rule, like a trader we interviewed, concede that in 2022 "prices were decoupled from the market mechanism as we know it in our business [referring to this rule of thumb] and were driven by the uncertainty of Ukrainian and Russian exports" (Interview 10). There was a similar discussion about how uncertainty about supply conditions exacerbated food price spikes in the 2008 food crisis (FAO *et al.*, 2011).

Several input costs for grain also shot up in 2022, triggered by the same uncertainties. Food and oil prices are highly correlated and fossil fuels are an important input for the food sector (IMF 2023, Interview 3). Nitrogen fertilizers require gas and the sanctioned allies Belarus and Russia are important exporters in a globally highly concentrated market (Algieri *et al.*, 2023; van Huellen and Ferrando, 2023). Among other factors like medium term impacts of supply chain disruptions during the Covid pandemic, the gas price spikes resulted in fertilizer prices shooting up by almost 200

percent year-over-year in April 2022 (YCharts, 2024). Several indices of ocean freight rates also multiplied (FAO, 2021a; FAO, 2022).

It is likely that the grain price spike was exacerbated by procyclical speculation. To be sure not all financial transactions on grain markets are speculative. Future markets were born in agriculture as a way for producers to hedge against uncertain prices at the time of harvest (Morgan, 1980; UNCTAD, 2023a, pp. 72-99). Millers also rely on future markets to hedge price uncertainty (Interview 6). Yet, farmers with storage capacity and firms along the supply chain can engage in commercial speculation by increasing holdings of raw materials in anticipation of higher prices. This can involve herd behavior (Interview 3). One result is the so-called bullwhip effect that amplifies shortages and price increases in situations of input supply uncertainty (Rees and Rungcharoenkitkul, 2021, Interview 6). In addition, export controls and panic-buying by overreacting governments can drive-up prices (IMF, 2023; Pinstrup-Andersen, 2014).

Pure financial speculators benefit from grain and fuel price volatility in commodity markets. The flipside of the dismantling of government price stabilization in the neoliberal era has been a rapid expansion of derivative markets and an influx of banks, private equity, and hedge funds (Staritz *et al.*, 2018; Tröster, 2018; Ederer *et al.*, 2016). During both recent food price crises investments of financial speculators increased, betting on rising future prices (Algieri *et al.*, 2023; Kornher *et al.*, 2022; UNCTAD, 2023a, pp. 76-84; Interview 3). Financial investments fell with prices in the second half of 2022 (ibid.). One mechanism for how financial speculators amplify price fluctuations is "trend-following", which involves high frequency trading with "algorithms that spot rising or falling prices and automatically buy or sell derivatives in response" (Gibbs and Ross, 2023).

Commercial and financial speculation also merge in grain markets. Five companies, the so-called ABCCDs - ADM, Bunge, COFCO, Cargill, and Louis Dreyfuss, control 70 to 90 percent of the global grain trade (IPES-Food, 2022; Hietland, 2024). They reaped record profits in 2022 (UNCTAD, 2023a) and are known to benefit from crises and volatility (Salerno, 2017). These gigantic conglomerates with hundreds of subsidiaries spanning the whole supply chain include sizable financial arms not regulated as banks (ibid.). They have built up inhouse intelligence on global agriculture that exceeds that of states (Morgan, 1980, Interviews 17, 19, 21). The combined storage capacity of the giant grain traders is unknown but must be enormous, dwarfing that of most countries and incomparably larger than those of other participants in the supply chain. Just three

companies (ADM, Bunge, and COFCO) can store as much wheat as the total annual consumption of the US, UK, and Turkey combined (Hietland, 2024). The International Panel of Experts on Sustainable Food Systems (IPES-Food) warns that the agricultural grain traders have incentives to "hold stocks back until prices are perceived to have peaked" (IPES Food, 2022, p. 14). Especially given that small changes in supply can trigger large price swings, the ABCD may well have a hand in exacerbating price volatilities (Hietland, 2024), even though a lack of data about storage levels and financial positions makes it difficult to prove (UNCTAD, 2023a).

In contrast to farmers, financial speculators including grain traders also gain when prices fall. Since they bet on both upward and downward movements, they benefit from amplified price volatility (UNCTAD 2023). Commodity traders and hedge funds have now put the largest bet in 20 years on a slump in grain prices (Savage and Steer, 2024). Planted acreage is coming down in many countries as farmers respond to plummeting prices. Market observers see the beginning of a new price cycle (ibid.). It resembles the over- and undershooting of prices in the cobweb model.

It is contested since the 1970s debate to what extent speculation drives price volatility (Smith, 1978). The debate also flared up in the 2007-8 crisis (Torero, 2016). It is hard to see how in situations of enormous uncertainty speculative storing and bets would not amplify price swings, even if the precise magnitude of price movements due to inflation is difficult to pin down empirically.

As a result of trade liberalization, domestic prices are coupled with international prices (Ahmed *et al.*, 2014). In Germany, for example, there was at no time any threat of a domestic shortage in 2022-2023, but since domestic grain prices follow the Paris grain exchange, they shot up (Interviews 4, 5, 6, 9, 10). For Sub-Sahara Africa the passthrough from global to domestic food staple prices is estimated to be 100 percent (Okou *et al.*, 2022). But even when international prices are stable, poor countries often experience price spikes due to domestic supply disruptions (ibid., Ahmed *et al.,* 2014; Baltzer, 2014; Interviews 12, 14).

The consequences of the food price shock and the crisis of neoliberal stabilization

Fifteen years of progress in reducing global undernourishment has been reversed as a result of the world food price crisis (IMF, 2023). Global hunger has jumped up from affecting 7.9 percent of the world population in 2019 to 9.2 percent in 2022 (FAO *et al.*, 2023). Even in rich countries like the

U.S., food insecurity increased sharply from 10.5 percent of the population in 2019 to 12.8 percent in 2022 (Rabbitt *et al.*, 2023). Food banks in rich countries are overwhelmed (Feeding America, 2022; Tagesschau, 2023; The Greater Boston Foodbank, 2023, Interview 22). At the same time, the macroeconomic consequences of the food price shock are what we would expect from the perspective of the classic case for buffer stocks.

Global food price increases translate into rising domestic food inflation as high levels of concentration along the value chain enable a pass through of costs. The IMF (2023, p.5) estimates that the passthrough rate is 0.3 percent with higher rates for Global South countries and economies with greater trade openness. Food price inflation has been high in poor and rich countries, outpacing overall inflation (see Figures 3a, 3b; Rother *et al.,* 2023). Rising food prices have increased headline inflation (see Figure 4). In Global South countries like Egypt, Uganda, Kenya, Nigeria, and Pakistan, food price increases accounted for more than half of the overall price increase in 2023 (see Figure 5). Even in a rich country like Germany, food price increases accounted for almost a quarter of year-on-year inflation in January 2023 (ibid.).

The two-sector reasoning of the classic case for buffer stocks can help in understanding the transmission from commodities to final food prices. While food commodity prices are volatile, processed food shows smoother price movements (see Figure 6 for the example of the US food sector). We can trace this pattern in the supply chain from grain via flour to bread drawing on the German example (see Figure 7). In interviews with millers, we learned they set their profit margins as a monetary markup over a given quantity of outputs (Interviews 5, 6). In stable times, mills compete by squeezing operating costs. But in times of major shocks and uncertainty, they switch to increasing markups to protect themselves against input price increases. In the words of a miller: "competition becomes much less intense in times of shocks as everyone sets prices to save their business not to gain market shares." As a result, increased grain and energy prices are not just passed on fully but markups also increase (Interview 6). Large firms tend to be in a stronger position than smaller ones to take advantage of shocks, so that emergencies can further increase concentration. When input markets calm down and competition returns, markups fall again, and prices go down. Accordingly, wholesale flour prices went up with bread wheat prices and fell with them (Figure 7) – albeit at a somewhat slower pace displaying the well-known 'up like rockets, down like feathers' pattern (Bacon, 1991).

At the bakery stage, raw material costs become less important, and wages and energy costs have a higher weight (Destatis, 2024; Interviews 2, 8, 11). Output is no longer as homogenous as flour and there is scope for product distinction. Margins are set in relation to total costs, not weight (Interview 7). This implies that if costs go up, unit profits go up even if relative margins are stable (Hahn, 2023). But as the price shock can also lead to a reduction in price competition, margins might also rise (Interview 7). Widely broadcasted cost increases as in the case of the grain crisis present opportune moments for price increases (Weber and Wasner, 2023, Interview 1). Prices of bread, bread rolls, and other baked goods went up with wheat prices but did not fall when energy and raw material prices declined in 2023 (Figure 7). This has likely generated some windfall profits, especially for larger bakeries.

What we can see in the German bread sector are indications of sellers' inflation in the sense that the pricing decisions of firms with market power to protect margins translate the price shocks in inputs into generalized inflation (Weber and Wasner, 2023). The mechanism is the ratchet effect described by Kaldor (see section 2). First studies on profits and prices for the food sector more broadly also point to sellers' inflation (Jobst and Duthoit, 2023; Pancotti *et al.*, 2024; van Huellen and Ferrando, 2023). Allianz Research (Jobst and Duthoit, 2023) suggests that 10 percent of European food price inflation cannot be explained by their model and attributes this to profit-taking pricing, whereas packaged food companies have increased prices more than retailers. Oliver Wyman (2023) finds that across Europe food retailers have protected their margins despite rising costs, which has driven up profits.

Food price inflation reduces real incomes of households and exacerbates inequalities. The income share spent on food varies widely between poor and rich countries ranging from close to 60 percent in countries like Kenya, Burma, and Nigeria to less than 10 percent in Switzerland and the United States (USDA, 2023). Poorer households in rich countries also spend larger shares of their income on food. In the U.S., for example, the lowest quintile spent 31.2 percent and the highest a mere 8 percent of their income on food in 2022 (USDA, 2024b). At the height of inflation in Germany in October 2022, there was a wedge of 3.4% between the inflation rate experienced by low-income households with two kids (11.8%) and the inflation experienced by a high-income single household (8.4%) (Endres and Tober, 2022). The erosion of purchasing power due to higher food prices can exert downward pressure on growth.

The incomes of whole nations are affected by the food price spike (Moseley *et al.*, 2015). 70 percent of global wheat exports are produced in five countries and four countries produce 85 percent of global corn exports (Wiggerthale, 2022). Meanwhile most countries rely on grain imports while also being import dependent on farm inputs (Varghese and Suppan, 2023). Between 2021-2022, Low Income Countries experienced an increase in their import bill for farm inputs of 65% (FAO, 2022). And between 2020 and 2021 Global South countries saw their food import bill rise by 20%, where two thirds of the increase was due to higher prices (FAO, 2021a). In the two subsequent years import volumes fell by 10%, indicating that Global South countries paid even higher prices to get less food (FAO, 2022, 2023). This is extremely worrying from a food security perspective as it indicates that these countries had to reduce their import of food staples because they were unable to finance the necessary purchases on international markets.

Many Global South countries are specialized in agricultural exports and logged in at the bottom of the global diversification hierarchy dating to colonial times (Interviews 12, 14, 17; UNCTAD, 2023b; Weber *et al.*, 2022). When prices for both imported and exported commodities spike at the same time, increased export revenues may not compensate for alleviated import costs as Kaldor already warned. The earnings of a price spike on commodity exports can translate into temporarily higher profits that might not be re-invested domestically nor taxed but leave the country (Ndikumana and Boyce, 2022). Increases in agricultural export commodity prices can also divert land from food production, exacerbating import needs (Interview 21).

Food crop prices are essential for the incomes of hundreds of millions of farmers. In many Global South countries, farming is the main income source for large parts of the population, so that such price swings have major macroeconomic repercussions (Interviews 12, 14, 15, 16; Lowder *et al.,* 2019). But farmers in Europe, too, feel squeezed as agricultural commodity prices have been falling faster than fertilizer prices (Cokelaere and Brzezinski, 2024). This was among the grievances fueling the farmers' protests we saw across Europe in 2024.

The import price shocks occurred against the background of a decade of rising debt levels in many Global South countries and enormous fiscal pressures during the COVID-19 pandemic. It triggered a debt crisis (IPES-Food, 2023). The strengthening of the US dollar as safe haven currency in a moment of global turmoil and the weakening of domestic currencies as a result of increased import needs increased the debt burden (IMF, 2023; Interviews 12, 13, 14).

The debt crisis has been made worse by the neoliberal stabilization response. Rapid interest rate increases by the Fed and ECB pushed some Global South countries into sovereign default such as for example Ghana, Sri Lanka, Suriname, Zambia (IPES-Food, 2023; UNCTAD, 2023a, p.63). In an attempt to fend off capital outflows interest rates in many Global South countries were hiked even more aggressively than in the US or Europe (Adrian *et al.*, 2024). Many Global South countries are caught up in a vicious cycle of food insecurity, price volatility, debt, and austerity (Mohammed *et al.*, 2023; UNCTAD, 2023a, p.73). Despite having documented the devastating macroeconomic and development consequences of food price shocks in detail, the IMF (2023, p. 17) still recommends the standard neoliberal policy package: monetary and fiscal tightening; fiscal support measures where necessary to support vulnerable groups "should preserve the price signal" and "reducing taxes on food and fuel is not advisable". An interview partner in Kenya (Interview 13), for example, shared that the public buffer stock system and tax breaks helped to stabilize food and fertilizer prices. But IMF structural adjustment measures in response to the looming debt crisis will undermine this stabilization efforts. Procyclical interest rate hikes, austerity, and price volatilities in essentials damage long-term investments in Global South countries that would be needed for structural change, resilience, and climate adaptation (Mohammed *et al.*, 2023; UNCTAD, 2023a; Interview 14).

In contrast, to stabilize their domestic economies rich countries eventually diverged from a pure neoliberal playbook. The U.S. used its position on top of the monetary hierarchy to pursue aggressive fiscal policies despite inflation. It mobilized the Strategic Petroleum Reserve against the energy price shock and the USDA helped stabilize the farm sector with direct purchase programs during the pandemic (USDA, 2022; USDOT, 2022). European countries against the best advice of neoliberal economists implemented a range of energy price controls. The IMF estimates that such "unconventional fiscal policies" contributed significantly both to reduce inflation and stabilize output (Dao *et al.*, 2023). More than a third of advanced economies among the G20 announced energy and/or food price controls and subsidies (IMF, 2023). France, Germany, Greece, Hungary, Portugal, Romania, Slovenia, and Spain introduced various forms of price stabilization for energy (Amaglobeli *et al.*, 2023; Krebs and Weber, 2024). Japan, Austria, Slovenia, Albania, Croatia provided subsidies to farmers to compensate them for higher input prices (e.g. fertilizers, diesel) (ibid.). European countries also used public intervention purchases to stabilize agricultural markets during the pandemic (Interview 1). Nevertheless, the world economy has seen growth slow as a result of the monetary tightening in response to inflation (World Bank, 2024).

Towards a post-neoliberal stabilization policy

To move towards a post-neoliberal stabilization paradigm and break free of the neoliberal imaginary that has captured the policy debate for decades (Interview 17), we need to leave behind the assumption that perfect competition leads to optimal social outcomes and recognize that perfectly free markets can lead to socially undesirable results. This is why the classic case for buffer stocks is a promising theoretical starting point and is much more than the recommendation for one tool. It does not amount to an anti-market stance but suggests that public participation in markets for essential commodities is necessary to avoid violent fluctuations with far-reaching consequences. It is a way to reconnect sectoral dynamics with macroeconomic stabilization, growth, and development.

Neoclassical economics does not necessarily lead to neoliberal policy conclusions. But those pointing to imperfections still share a normative outlook with the neoliberals – even if the neoclassical model fails to be an accurate description of reality it remains the normative benchmark (Gouel, 2012, p. 148). Nevertheless, many of the concerns of those seeing harmful price volatility as the result of imperfections in private markets are complementary to the classic case. Take the example of procyclical speculation. From both perspectives, the financial business of the ABCD should fall under banking regulation as UNCTAD (2023a, pp. 72-99) recommends and excessive financialization of markets for essential commodities should be limited to prevent the effects of procyclical herd behavior (Interview 21). Greater transparency to limit the power of ABCD speculators with informational advantages is also a helpful recommendation (AMIS, 2021; IPES Food, 2022; Interviews 17, 19), as would be windfall profit taxes (Hietland, 2024).

But the buffer stock perspective is about more than removing imperfections. It is about building new public institutions for stabilization. This requires building up fiscal, commercial, transportation, and storage capacity that can be mobilized to break price hikes by diverting herd behavior. In this way public supplies can be leverage d by encouraging private actors to bring inventories to the market. This has been achieved for example in Bangladesh's food reserve system (European Commission, 2018). It has also been a long-standing practice in Chinese statecraft (Weber, 2021b). When no domestic public stocks are available, this principle can be employed as an interview partner in Kenya pointed out: The government licensed edible oil imports from private merchants and set a fixed selling price which broke a domestic price hike that diverged from world market trends (Interview 13). But the Kenyan case also points to the challenge of corruption and the need for high

standards of transparency to avoid government insiders from taking advantage of price wedges (Omulo, 2024). Buffer stocks can also be "virtual", as proposed in response to the 2008 food crisis by Torero and von Braun (2009), further explained below, and designed to break price hikes on future markets analogous to open market operations of central banks.

Apart from curbing the inherent instability of commodity prices, physical buffer stocks can also ameliorate (local) threats of shortages. During the supply chain interruptions in the context of the COVID-19 pandemic and the Russian war on Ukraine, there were temporary regional shortages in grain importing countries dependent on the affected region as grain shipments from new trade partners were being awaited (IPES-Food, 2022). Having physical buffer stocks located at strategic locations around the globe would protect against such temporary disruptions at the local level in a way that buffer funds or virtual buffer stocks could not.

Public buffer stock systems are not a utopian idea. The two most populous nations on earth, China and India, both run public stockholding systems for food staples (FAO, 2021; Interviews 15, 16, 23, 24). Despite a bad reputation in anecdotal accounts of butter mountains and milk lakes (Interview 19), buffer stocks have continued to operate in the shadows even in the richest countries. The express goal of European intervention stocks is to prevent prices from dropping to unsustainable levels by curbing the danger of a downward price-spiral in years of over-supply (European Commission, 2024; Interview 1). The EU has provisions for intervention in grain, beef, butter, and milk markets (ibid.). Food out of stocks is gradually reintroduced to the EU market when the danger of a price depression has passed. But a buffer stock that is built up to keep a price floor could in principle also be mobilized to break a price hike.

In the United States, the USDA purchases agricultural goods for food distribution programs and international food aid. As the USDA explains "these purchases help to stabilize prices in agricultural commodity markets by balancing supply and demand" (USDA, 2024a). Just like the Strategic Petroleum Reserve that was long considered as an emergency reserve to compensate for supply shortfalls has been mobilized to stabilize oil prices, the USDA could expand its price stabilization interventions. In fact, calls for a Strategic Resilience Reserve stockholding essentials like critical minerals also for price and macro-stabilization purposes are already discussed in Washington (Singh and Datta, 2024). If more supply shocks occur and geopolitical tensions continue to mount, it seems

to be only a matter of time until rich countries will mobilize the remnants of pre-neoliberal institutions to systematically buffer essentials against violent price fluctuations.

For countries in the Global South, the WTO has been a major stumbling block in the buildup of public buffer stock systems (Díaz-Bonilla, 2021; Glauber and Sinha, 2021; Interview 16). In some countries (India being the most prominent case), commodities for public buffer stocks are purchased at a fixed price while the WTO only permits procurement at current market prices (Glauber and Sinha, 2021). Differences between market and purchase prices are counted towards countries' limits on trade-distorting support. Since the 2008 food price spikes, some countries in the Global South have seen their ability to conduct public stockholding programs constrained (ibid.). A struggle has been ongoing ever since over defining a "permanent solution" to this issue.

More regular supply shocks are likely for food. Extreme weather events are predicted to be frequent and have already affected regional agricultural yields (Beillouin *et al.*, 2020; Kornhuber *et al.*, 2023). Climate change is estimated to have non-linear impacts on food supplies and prices through channels such as effects on water availability, land use, pollinators, diseases, and shipping disruptions (Benzie and John, 2015; Haile *et al.*, 2017; IMF, 2023; Mbow and Rosenzweig, 2019). In addition, experts warn of the impacts of geopolitical tensions on food (IMF, 2023; Kornhuber *et al.*, 2023; Mehrabi, 2020).

The question is whether a win-win case for global cooperation can be created that aligns the interests of rich and poor countries and avoids the pitfalls of the 1970s. The return of cost-push inflation might be helpful in this regard, especially when renewed shocks overlap and repeated rate hikes become increasingly costly. One of the lessons of the 1970s is that breaking away from the neoclassical separation between micro and macro dynamics is critical to make the win-win case. There has been an uptick in calls for buffer stocks both as emergency reserves and for price stabilization in response to the 2008-9 food crisis (Murphy, 2009; Timmer, 2010; von Braun *et al.*, 2009). President Obama commented on the global food crisis in 2008: 'I think that we've got to stockpile food reserves at a global level more effectively than we have in the past' (Crola, 2011). In 2009, at the L'Aquila Summit, G8 leaders agreed to assess 'the feasibility, effectiveness and administrative modalities of a system of stockholding… as a means to limit price volatility'. But ultimately the proposal for such a system was dropped (ibid.).

The focus then was mainly on food security and the concerns of Global South countries. In this regard the 2020-2023 crisis is different and more similar to the 1970s than 2008-9. The crisis has shown to rich countries that price shocks to essentials like food and energy matter for inflation and macroeconomic stability – a reality many poor countries never had the privilege to ignore. Since commodity prices are globalized, global stabilization efforts would be most effective and less costly compared to straight-out protectionism or the type of measures implemented during the European energy crisis that reduced an international price shock with fiscal means.

As a first step towards a new stabilization paradigm, a globally managed or at least globally coordinated management of buffer stocks for staple foods could be inspired by the US grain proposal of the 1970s (Gulick, 1975). Buffer stocks of key traded staple food commodities (rice, maize, wheat, vegetable oils) could be established at strategically sensible geographic locations, managed by the FAO or a UN body specifically created for this purpose, or by national governments who agree to release stocks according to an agreement. Such a physical system could be backed up by virtual reserves (Von Braun and Torero, 2009). Participating governments would commit promissory ("virtual") financing to a common fund that is only drawn on in the event of a market intervention, thus incurring no immediate budgetary expense (ibid.). If a price spike is imminent, the commercial arm of the buffer stock entity would conduct successive short sales on the futures market to curb the role of excessive speculation in amplifying price spikes.

Instead of structural adjustment programs dismantling price stabilizing institutions and constraints imposed by the WTO, Global South countries should be supported by international financial institutions and the global governance system in efforts to extend or revive buffer stock initiative as launched for example in Kenya and Ecuador in recent years (Interviews 13, 25). Successful management of buffer stock systems involves high levels of technical and commercial expertise that require capacity building along with financial resources. The same applies to regional buffer stock initiatives such as currently discussed in East Africa and already in operation in West Africa, ASEAN and South Asia (ECOWAS, 2021; FAO, 2021b). These national and regional public food agencies could see their mandates expanded to include the promotion of diversified, agroecological production of culturally adapted, nutritious food. The implication is that international rules limiting agricultural support must be re-thought for these purposes. Buffer stocks at all three levels of operation should be coordinated by a UN agency to ensure synergies.

In an age of overlapping emergencies, it is crucial to make incomes and access to food more resilient, equitable, and sustainable. An over-specialization on export crops is not advisable when yields are unpredictable due to volatile weather conditions and prices fluctuate widely. Green Revolution policies aiming to raise the productivity of food production by using high yielding hybrid seeds, chemical pesticides, and mineral fertilizers carry the danger of increasing dependence on volatile input markets (Joala *et al.*, 2023). Buffer stocks can help to ameliorate volatilities in agricultural input and product prices but should be used to overcome existing dependencies in an ecologically sustainable way rather than to perpetuate them.

Public purchasing for buffer stock systems can be used to incentivize the planting of more climate resilient and diverse crops and introduce the use of organic fertilizers that can be produced domestically. As such, buffer stocks can help to enhance ecological sustainability and to ensure continuous incomes and production on the part of domestic producers. This can help to protect the most vulnerable group of small farmers in particular, whose livelihoods in contrast to large producers are immediately under threat when faced with market volatilities. Buffer stocks when mobilized in this way as a directional public procurement tool can contribute to diversify production and reduce import dependence – two key concerns of food experts for Global South countries (Interviews 17, 18, 19). Public procurement has long been a powerful instrument for industrial policy and could in this way be adapted to agriculture. Two prominent examples of public buffer stock systems that double as a form of agricultural industrial policy include the Indian public distribution system and the Companhia Nacional de Abastecimento (CONAB) in Brazil.

Buffer stocks at multiple levels of governance present an alternative to the binary of free trade and protectionism. They provide a middle ground between the position that expanding international trade is the best way to ward off against instability and the position that expanding and diversifying local food production is the best mechanism to achieve this goal. Buffer stocks for a few essential food commodities could be held at the global level. This would stabilize trade in these commodities and ward against the incentive for national governments to pursue their own price stabilization strategies at the cost of others (von Braun *et al.*, 2009). At the same time, international rules should be adjusted to allow regional and national buffer stocks to be combined with public procurement programs and other measures to support and protect a diversification of local food systems. Negotiations about the creation of such a multi-layered buffer stock system should include

provisions to curb the use of national buffer stocks to promote agricultural exports to the detriment of other countries, for example by implementing rules against dumping.

Conclusion

The neoliberal stabilization paradigm left economies around the world unprepared for the shocks to essentials experienced in the overlapping emergencies of war, conflict, climate change, and pandemic. By the same token, the overlapping emergencies of this moment render the classic case for global buffer stocks relevant again. The neoliberal playbook relies on the assumption that market prices provide efficient signals if there are no imperfections such as government interventions. Simply put, free prices lead to socially optimal outcomes. Changes in relative prices are to be treated in clean separation from macro-outcomes and macroeconomic stabilization ought to rely on macro-policy alone.

In contrast, the perspective of the classic case for buffer stocks holds that in commodity markets uncertainty and procyclical herd behavior can lead to constant over- and undershooting in a cobweb dynamic rendering markets inefficient even under conditions of perfect competition. For essential commodities, this price volatility can lead to cost-push inflation and low growth in the interaction with the different pricing dynamic in the industrial sector, where firms set prices. This implies that buffer stock stabilization of commodities can help stabilize the macroeconomy while fostering development in commodity-dependent countries.

All three elements that are at the core of the classic case for buffer stocks are present in the food price crises: food staples are essential for human livelihoods and for systemwide economic outcomes; prices are inherently volatile in times of shock and uncertainty and involve inefficient price signals; and large price swings in food have major implications for macroeconomic stability and development. It is high time to reconsider buffer stocks as a tool in stabilization policy and as a first step in a gradual transition to post-neoliberalism. Of course, for a full-fledged post-neoliberal stabilization toolbox more than buffer stocks for food staples are needed. There need to be institutions for emergency price stabilization for all systemically important prices and they need to be tailored to the sectoral specifics. Where commodities like critical minerals, oil and gas, or raw materials are concerned, buffer stocks, if rightly designed, can be the right tool. But the buffer stock reasoning is more than a tool. It can open a door out of the world of perfect competition as the benchmark for all policy thinking and towards an institutionalist analysis of sectoral dynamics that is

linked to macro-outcomes. As such, stabilization is not macroeconomic policy in isolation but is connected to concerns such as climate change mitigation and development.

References

Adrian, T., Natalucci, F. and Wu, J. (2024) 'Emerging Markets Navigate Global Interest Rate Volatility', *IMF Blog*.

Ahmed, S., Siwar, C., Talib, B. A., Chamhuri, N. and Islam, R. (2014) 'Tackling Food Price Volatility: The Challenge Of The Days To Come', *UMK Procedia*.

Algieri, B., Kornher, L. and Von Braun, J. (2023) 'Food Price Inflation, Its Causes and Speculation Risks', *Rural 21*, 10–12.

Amaglobeli, D., Gu, M., Hanedar, E., Hong, G. H. and Thévenot, C. (2023) *Policy Responses to High Energy and Food Prices*, IMF.

AMIS (2021) *Grains Storage and Global Food Security*, Agricultural Markets Information System.

Babb, S. and Kentikelenis, A. (2018) 'International Financial Institutions as Agents of Neoliberalism'. In Cahill, D., Cooper, M., Konings, M., and Primrose, D. (eds) *The SAGE Handbook of Neoliberalism*, SAGE Publications, pp. 16–27.

Bacon, R. W. (1991) 'Rockets and Feathers: The Asymmetric Speed of Adjustment of UK Retail Gasoline Prices to Cost Changes', *Energy Economics*, **13**, 211–218.

Baltzer, K. (2014) 'International to Domestic Price Transmission in Fourteen Developing Countries during the 2007–8 Food Crisis'. In Pinstrup-Andersen, P. (ed) *Food Price Policy in an Era of Market Instability*, Oxford University Press.

Beaujeu, R. (2016) 'Alternative Policies to Buffer Stocks for Food Security', *OECD Publishing*.

Behrman, J., B. (1979) 'International Commodity Agreements: An Evaluation of the UNCTAD Integrated Commodity Programme'. In Cline, W. R. (ed) *Policy Alternatives for a New International Economic Order. An Economic Analysis*, Praeger Publishers for the Overseas Development Council, pp. 63–149.

Beillouin, D., Schauberger, B., Bastos, A., Ciais, P. and Makowski, D. (2020) 'Impact of Extreme Weather Conditions on European Crop Production in 2018', *Phil. Trans. R. Soc. B*.

Benzie, M. and John, A. (2015) *Reducing Vulnerability to Food Price Shocks in a Changing Climate*, Stockholm Environment Institute.

Bodde, D. (1946) 'Henry A. Wallace and the Ever-Normal Granary', *The Far Eastern Quarterly*, **5**, 411–426.

von Braun, J., Lin, J. and Torero, M. (2009) 'Eliminating Drastic Food Price Spikes. A Three Pronged Approach for Reserves'.

Brook, E. M. and Grilli, E. R. (1977) 'Commodity Price Stabilization and the Developing World', *Finance and Development*, **14**, 8.

Brown, C. P. (1980) *Political and Social Economy of Commodity Control*, Springer.

Cline, W. R. (1979) 'A Quantitative Assessment of the Policy Alternatives in the NIEO Negotiations'. In Cline, W. R. (ed) *Policy Alternatives for a New International Economic Order. An Economic Analysis*, Praeger Publishers for the Overseas Development Council, pp. 3–59.

Cokelaere, H. and Brzezinski, B. (2024) 'Europe's Farmer Protests Are Spreading. Here's Where and Why', *POLITICO* (2024).

Cooper, R. N., Lawrence, R. Z., Bosworth, B. and Houthakker, H. S. (1975) 'The 1972-75 Commodity Boom', *Brookings Papers on Economic Activity*, **1975**, 671–723.

Corea, G. (1992) *Taming Commodity Markets : The Integrated Programme and the Common Fund in UNCTAD.*, Manchester University Press.

Crola, J. D. (2011) *Preparing for Thin Cows. Why the G20 Should Keep Buffer Stocks on the Agenda*, Oxfam International.

Dao, M., Dizioli, A., Jackson, C., Gourinchas, P.-O. and Leigh, D. (2023) 'Unconventional Fiscal Policy in Times of High Inflation', *IMF Working Paper*, **23/178**.

Dawe, D. (2001) 'How Far down the Path to Free Trade? The Importance of Rice Price Stabilization in Developing Asia.', *Food Policy*, **26(2)**, 163–175.

Dawe, D. and Timmer, C. P. (2012) 'Why Stable Food Prices Are a Good Thing: Lessons from Stabilizing Rice Prices in Asia.', *Global Food Security*, **1(2)**, 127–133.

Destatis (2024) 'Cost Structure Survey in Manufacturing, Mining'.

Díaz-Bonilla, E. (2021) 'Public Stockholdings, Special Safeguard Mechanism and State Trading Enterprises: What's Food Security Got to Do with Them?' In *The Road to the WTO Twelfth Ministerial Conference: A Latin American and Carribean Perspective*, Instituto Interamericano de Cooperación para la Agricultura, International Food Policy Research Institute.

Donges, J. B. (1977) 'The Third World Demand for a New International Economic Order: Governmental Surveillance Versus Market Decision-Taking in Trade and Investment', *Kyklos*, **30**, 235–258.

ECOWAS (2021) *The West African Food Security Storage System - in Brief*, ECOWAS Commission.

Ederer, S., Heumesser, C. and Staritz, C. (2016) 'Financialization and Commodity Prices – an Empirical Analysis for Coffee, Cotton, Wheat and Oil', *International Review of Applied Economics*, **30**, 462–487.

Endres, L. and Tober, S. (2022) *Inflationsmonitor. November 2022*, Institut für Makroökonomie und Konjunkturforschung.

European Commission (2018) *Using Food Reserves to Enhance Food and Nutrition Security in Developing Countries. Case Studies*, Brussels, Directorate-General for International Cooperation and Development.

European Commission (2024) 'Market Measures Explained', accessed at https://agriculture.ec.europa.eu/common-agricultural-policy/market-measures/market-measures-explained_en on February 28, 2024.

Ezekiel, M. (1938) 'The Cobweb Theorem', *The Quarterly Journal of Economics*, **52**, 255–280.

Fantacci, L. (2012) 'Keynes's Commodity and Currency Plans for the Post-War World'. In Marcuzzo, M. (ed) *Speculation and regulation in commodity markets: The Keynesian approach in theory and practice*, pp. 177–207.

FAO (1946) 'Proposals for a World Food Board and World Food Survey, Prepared by Director-General Boyd Orr'.

FAO (2021a) *Food Outlook – Biannual Report on Global Food Markets*, FAO.

FAO (2021b) *Public Food Stockholding A Review of Policies and Practices*, Rome, FAO.

FAO (2022) *Food Outlook – Biannual Report on Global Food Markets*, FAO.

FAO (2023) *Food Outlook – Biannual Report on Global Food Markets*, FAO.

FAO, IFAD, IMF, OECD, UNCTAD, WFP, World Bank, WTO, IFPRI and UN HLTF (2011) *Price Volatility in Food and Agricultural Markets: Policy Responses*.

FAO, IFAD, UNICEF, WFP and WHO (2019) *The State of Food Security and Nutrition in the World 2019. Safeguarding against Economic Slowdowns and Downturns*, Rome.

FAO, IFAD, UNICEF, WFP and WHO (2023) *The State of Food Security and Nutrition in the World 2023, In Brief*, FAO, IFAD, UNICEF, WFP, WHO.

Feeding America (2022) '53 Million People Visited Food Banks', accessed at https://www.feedingamerica.org/about-us/press-room/53-million-received-help-2021 on February 24, 2024.

Fischer, D. H. (1999) *The Great Wave: Price Revolutions and the Rhythm of History*, Oxford University Press.

Friedmann, H. (1993) 'The Political Economy of Food: A Global Crisis', *New Left Review*, 29–57.

Galtier, F. and Vindel, B. (2013) 'Managing Food Price Instability in Developing Countries', *A critical analysis of strategies and instruments. Paris, Agence Française de Développement (AFD)*.

Garavini, G. (2019) *The Rise and Fall of OPEC in the Twentieth Century*, Oxford University Press.

Ghosh, J. (2023) 'The Myth of Global Grain Shortages', *Project Syndicate*.

Gibbs, A. and Ross, M. (2023) 'Top Hedge Funds Made $1.9bn on Grains before Ukraine War Food Price Spike', *Unearthed* (2023).

Gilbert, C. L. (1989) 'The Impact of Exchange Rates and Developing Country Debt on Commodity Prices', *The Economic Journal*, **99**, 773–784.

Gilbert, C. L. (1996) 'International Commodity Agreements: An Obituary Notice', *World development*, **24**, 1–19.

Gilman, N. (2015) 'The New International Economic Order: A Reintroduction', *Humanity: An International Journal of Human Rights, Humanitarianism, and Development*, **6**, 1–16.

Glauber, J. and Sinha, T. (2021) *Procuring Food Stocks Under World Trade Organization Farm Subsidy Rules. Finding a Permanent Solution*, International Institute for Sustainable Development.

Gouel, C. (2012) 'Agricultural Price Instability: A Survey of Competing Explanations and Remedies', *Journal of Economic Surveys*, **26**, 129–156.

Graham, B. (1937) *Storage and Stability*, McGraw-Hill.

Graham, B. (1944) *World Commodities and World Currency*, McGraw-Hill.

Gulick, L. (1975) *The U.S. Proposal for an International Grain Reserves System: Report of a Staff Study Mission to the September 29-30, 1975, Meeting of the International Wheat Council Preparatory Group.*, U.S. Govt. Printing Off.

Hahn, E. (2023) *Economic Bulletin Issue 4, 2023. Box 3: How Have Unit Profits Contributed to the Recent Strengthening of Euro Area Domestic Price Pressures?*

Haile, M. G., Wossen, T., Tesfaye, K. and von Braun, J. (2017) 'Impact of Climate Change, Weather Extremes, and Price Risk on Global Food Supply', *Economics of Disasters and Climate Change*, **1**, 55–75.

Hallwood, P. (1977) 'Interactions between Private Speculation and Buffer Stock Agencies in Commodity Stabilization', *World Development*, **5**, 349–353.

Hart, A. G., Kaldor, N. and Tinbergen, J. (1980) 'The Case for an International Commodity Reserve Currency (1963)'. In Kaldor, N. (ed) *Essays on Economic Policy II: Vol. IV of Collected Economic Essays of Nicholas Kaldor*, New York, Holmes and Meier.

Hayek, F. (1948) 'A Commodity Reserve Currency (1943)'. In *Individualism and Economic Order*, University of Chicago Press.

Helmberger, P. and Weaver, R. (1977) 'Welfare Implications of Commodity Storage under Uncertainty', *American Journal of Agricultural Economics*, **59**, 639–651.

Hietland, M. (2024) *Hungry for Profits*, Centre for Research on Multinational Corporations (SOMO).

van Huellen, S. and Ferrando, T. (2023) *Who Is Profiting from the Food Crisis?*, The Left.

IMF (2023) *G-20 Background Note on the Macroeconomic Impact of Food and Energy Insecurity*, IMF.

Institute for Economics & Peace (2023) 'Global Peace Index 2023: Measuring Peace in a Complex World', accessed at http://visionofhumanity.org/resources.

IPES-Food (2022) *Another Perfect Storm? How the Failure to Reform Food Systems Has Allowed the War in Ukraine to Spark a Third Global Food Price Crisis in 15 Years, and What Can Be Done to Prevent the next One*, International Panel of Experts on Sustainable Food Systems.

IPES-Food (2023) *Breaking the Cycle of Unsustainable Food Systems, Hunger, and Debt*, International Panel of Experts on Sustainable Food Systems.

Jäger, A. and Zamora Vargas, D. (2023) 'Welfare for Markets: A Global History of Basic Income'. In *Welfare for Markets*, University of Chicago Press.

Joala, R., Senzia, D. and Wamunyima, M. (2023) *The State Matters. Government Spending on Agriculture in Tanzania and Zambia*, Rosa Luxemburg Foundation, PELUM Tanzania, PELUM Zambia.

Jobst, A. and Duthoit, A. (2023) *European Food Inflation – Hungry for Profits?*, Munich, Allianz SE.

Kaldor, N. (1934) 'A Classificatory Note on the Determinateness of Equilibrium', *The Review of Economic Studies*, **1**, 122–136.

Kaldor, N. (1976) 'Inflation and Recession in the World Economy', *The Economic Journal*, **86**, 703–714.

Kaldor, N. (1980a) 'Stabilizing the Terms of Trade of Underdeveloped Countries (1962)'. In Kaldor, N. (ed) *Essays on Economic Policy II: Vol. IV of Collected Economic Essays of Nicholas Kaldor*, New York, Holmes and Meier.

Kaldor, N. (1980b) 'On the Economics of the International Wheat Agreement'. In Kaldor, N. (ed) *Essays on Economic Policy II: Vol. IV of Collected Economic Essays of Nicholas Kaldor*, New York, Holmes and Meier.

Kaldor, N. (1987) 'The Role of Commodity Prices in Economic Recovery', *World Development*, **15**, 551–558.

Kalkuhl, M., von Braun, J. and Torero, M. (2016) 'Volatile and Extreme Food Prices, Food Security, and Policy: An Overview'. In Kalkuhl, M., von Braun, J., and Torero, M. (eds) *Food Price Volatility and Its Implications for Food Security and Policy*, Springer.

Kanbur, R. (1984) 'How to Analyze Commodity Price Stabilisation? A Review Article.', *Oxford Economic Papers*, **36**, 336–358.

Kanbur, S. R. and Vines, D. (1986) 'North-South Interaction and Commod Control', *Journal of Development Economics*, **23**, 371–387.

Keynes, J. M. (1938) 'The Policy of Government Storage of Food-Stuffs and Raw Materials', *The Economic Journal*, **48**, 449–460.

Keynes, J. M. (1971a) 'The Control of Raw Materials by Governments (1926)'. In *The Collected Writings of John Maynard Keynes*, pp. 546–52.

Keynes, J. M. (1971b) 'Some Aspects of Commodity Markets (1923)'. In *The Collected Writings of John Maynard Keynes*, pp. 255–66.

Keynes, J. M. (1971c) 'A Treatise on Money (1930)'. In *The Collected Writings of John Maynard Keynes*.

Keynes, J. M. (1974) 'The International Control of Raw Materials [1942]', *Journal of International Economics*, **4**, 299–315.

Kharas, H. (2011) 'Making Sense of Food Price Volatility', *Brookings Institute*.

Kornher, L. and von Braun, J. (2023) 'The Global Food Crisis Will Not Be over When International Prices Are Back to Normal', *ZEF Policy Brief*, **42**.

Kornher, L., von Braun, J. and Algieri, B. (2022) 'Speculation Risks in Food Commodity Markets in the Context of the 2022 Price Spikes - Implications for Policy', *ZEF Policy Brief*, **40**.

Kornhuber, K., Lesk, C., Schleussner, C. F., Jägermeyr, J., Pfleiderer, P. and Horton, R. M. (2023) 'Risks of Synchronized Low Yields Are Underestimated in Climate and Crop Model Projections', *Nature Communications*, **14**, 3528.

Krebs, T. and Weber, I. (2024) 'Can Price Controls Be Optimal? The Economics of the Energy Shock in Germany', *Forum for a New Economy Workng Papers*.

Labys, W. (1978) 'Commodity Markets and Models: The Range of Experience'. In Adams, F. G. and Klein, S. A. (eds) *Stabilizing World Commodity Markets*, Lexington, Massachusetts, Lexington Books, pp. 3–34.

Labys, W. C. and Maizels, A. (1993) 'Commodity Price Fluctuations and Macroeconomic Adjustments in the Developed Economies', *Journal of Policy Modeling*, **15**, 335–352.

Lowder, S. K., Sánchez, M. V. and Bertini, R. (2019) 'Farms, Family Farms, Farmland Distribution and Farm Labour: What Do We Know Today?', *FAO Agricultural Development Economics Working Papers*.

Markolf, S. A., Hoehne, C., Fraser, A., Chester, M. V. and Underwood, B. S. (2019) 'Transportation Resilience to Climate Change and Extreme Weather Events–Beyond Risk and Robustness', *Transport policy*, **74**, 174–186.

Massell, B. F. (1969) 'Price Stabilization and Welfare', *The Quarterly Journal of Economics*, **83**, 284–298.

Mbow, C. and Rosenzweig, C. (2019) 'Food Security'. In *Special Report on Climate Change and Land*, IPCC.

Mehrabi, Z. (2020) 'Food System Collapse', *Nature Climate Change*, **10**, 16–17.

Miranda, M. J. and Helmberger, P. G. (1988) 'The Effects of Commodity Price Stabilization Programs', *The American Economic Review*, 46–58.

Mohammed, A., Raissi, M., Lee, K. and Fizzarotti, C. (2023) 'Volatile Commodity Prices Reduce Growth and Amplify Swings in Inflation', *IMF*.

Morgan, D. (1980) *Merchants of Grain*, Penguin Books.

Moseley, W., Schnurr, M. and Bezner Kerr, R. (2015) 'Interrogating the Technocratic (Neoliberal) Agenda for Agricultural Development and Hunger Alleviation in Africa', *African Geographical Review*, **34**, 1–7.

Murphy, S. (2009) *Strategic Grain Reserves In an Era of Volatility*, Institute for Agriculture and Trade Policy.

Muth, J. F. (1961) 'Rational Expectations and the Theory of Price Movements', *Econometrica*, **29**, 315–335.

Ndikumana, L. and Boyce, J. K. (2022) *On the Trail of Capital Flight from Africa: The Takers and the Enablers*, Oxford University Press.

Newbery, D. M. G. and Stiglitz, J. E. (1981) *The Theory of Commodity Price Stabilization: A Study in the Economics of Risk*, Oxford, Clarendon Press.

OECD (2023) 'Reforms Needed to Production and Market-Distorting Policies as Agricultural Support Reaches Record Highs', *Press Release*.

Oi, W. Y. (1961) 'The Desirability of Price Instability Under Perfect Competition', *Econometrica*, **29**, 58–64.

Okou, C., Spray, J. A. and Unsal, F. D. (2022) 'Staple Food Prices in Sub-Saharan Africa: An Empirical Assessment', *IMF Working Papers*.

Oliver Wyman (2023) 'Profit-Analyse Europäischer LEH 2022'.

Omulo, C. (2024) 'Imported Edible Oils Scandal Fries KNTC Top Heads' Careers', *Nation* (2024).

Pancotti, E., Ramamurti, B. and Wilson, C. (2024) *What's Driving the Rise in Grocery Prices – and What the Government Can Do About It*, Groundowork Collaborative.

Panitch, L. and Gindin, S. (2021) *The Making of Global Capitalism: The Political Economy Of American Empire*, Routledge.

Pinstrup-Andersen, P. (2014) 'The Political Economy of Food Price Policy: An Overview'. In Pinstrup-Andersen, P. (ed) *Food Price Policy in an Era of Market Instability*, Oxford University Press.

Rabbitt, M. P., Hales, L. J., Burke, M. P. and Coleman-Jensen, A. (2023) 'Household Food Security in the United States in 2022', *USDA*.

Rees, D. and Rungcharoenkitkul, P. (2021) *Bottlenecks: Causes and Macroeconomic Implications*, Bank of International Settlements.

Rother, B., Sosa, S., Debbich, M., Castrovillari, C. and Prifti, E. (2023) *Global Food Crisis Update: Recent Developments, Outlook, and IMF Engagement*, IMF.

Salerno, T. (2017) 'Cargill's Corporate Growth in Times of Crises: How Agro-Commodity Traders Are Increasing Profits in the Midst of Volatility', *Agriculture and Human Values*, **34**, 211–222.

Sargent, T. J. (2022) 'Rational Expectations', *The Concise Encyclopedia of Economics | Library of Economics and Liberty*.

Sarris, A., H., Abbott, P. C. and Taylor, L. (1979) 'Grain Reserves, Emergency Relief, and Food Aid'. In Cline, W. R. (ed) *Policy Alternatives for a New International Economic Order. An Economic Analysis*, Praeger Publishers for the Overseas Development Council, pp. 157–212.

Sarris, A. H. and Taylor, L. (1978) 'Buffer Stock Analysis for Agricultural Products: Theoretical Murk or Empirical Resolution?' In Adams, F. G. and Klein, S. A. (eds) *Stabilizing World Commodity Markets*, Lexington, Massachusetts, Lexington Books, pp. 63–83.

Savage, S. and Steer, G. (2024) 'Traders Amass Big Bet on Falling Grain Prices after Bumper Harvests', *Financial Times* (2024).

Sen, A. (1982) *Poverty and Famines: An Essay on Entitlement and Deprivation*, OUP Oxford.

Shaw, D. (2007) *World Food Security: A History since 1945*, Springer.

Singh, D. and Datta, A. (2024) 'Reimagining the SPR', *Financial Times* (2024).

Smith, G. (1978) 'Commodity Instability and Market Failure: A Survey of Issues'. In Adams, F. G. and Klein, S. A. (eds) *Stabilizing World Commodity Markets*, Lexington, Massachusetts, Lexington Books, pp. 161–189.

Spraos, J. (1989) 'Kaldor on Commodities', *Cambridge Journal of Economics*, **13**, 201–222.

Staritz, C., Newman, S., Tröster, B. and Plank, L. (2018) 'Financialization and Global Commodity Chains: Distributional Implications for Cotton in Sub-Saharan Africa', *Development and Change*, **49**, 815–842.

Tagesschau (2023) 'Aufnahmestopps und Wartelisten - Tafeln beklagen Überlastung', *tagesschau.de*, accessed at https://www.tagesschau.de/inland/gesellschaft/tafeln-andrang-100.html on March 10, 2024.

Telles, K. (2023) 'The Commodity Reserve Currency Chapter: Friedrich A. Hayek, John Maynard Keynes, and the International Monetary Order', *Brazilian Journal of Political Economy*, **43**, 619–645.

The Greater Boston Foodbank (2023) *Opportunities to Improve Food Equity and Access in Massachusetts: Ending Hunger - Together*, The Greater Boston Foodbank.

Timmer, C. P. (2010) 'Reflections on Food Crises Past', *Food Policy*, **35**, 1–11.

Tinbergen, J. (1930) 'Bestimmung Und Deutung von Angebotskurven Ein Beispiel', *Zeitschrift für Nationalökonomie*, **1**, 669–679.

Torero, M. (2016) 'Alternative Mechanisms to Reduce Food Price Volatility and Price Spikes: Policy Responses at the Global Level'. In Kalkuhl, M., von Braun, J., and Torero, M. (eds) *Food Price Volatility and Its Implications for Food Security and Policy*, Springer.

Toye, J. F. (2014) *UNCTAD at 50: A Short History; 1964-2014*, UN.

Tröster, B. (2018) *Commodity Price Stabilization: The Need for a Policy Mix That Breaks the Vicious Cycle of Commodity Dependence and Price Volatility*, Vienna, Austrian Foundation for Development Research (ÖFSE).

Turnovsky, S. J. (1978) 'The Distribution of Welfare Gains from Price Stabilization: A Survey of Some Theoretical Issues'. In Adams, F. G. and Klein, S. A. (eds) *Stabilizing World Commodity Markets*, Lexington, Massachusetts, Lexington Books, pp. 119–148.

UN World Food Conference (1974) 'Proposals for National and International Action. E/CONF.65/4'.

UNCTAD (1977) 'New Directions and New Structures for Trade and Development. Report by the Secretary-General of the United Nations Conference on Trade and Development to UNCTAD IV [1976]'.

UNCTAD (2023a) *Trade and Development Report 2023: Growth, Debt, and Climate: Realigning the Global Financial Architecture.*, UNCTAD.

UNCTAD (2023b) *State of Commodity Dependence*, New York, UNCTAD.

USDA (2022) 'USDA Farmers to Families Food Box', *US Department of Agriculture. Agricultural Marketing Service*, accessed at https://www.ams.usda.gov/selling-food-to-usda/farmers-to-families-food-box on March 11, 2024.

USDA (2023) 'Lower Income Countries Spend Much Higher Share of Expenditures on Food than Higher Income Countries', *US Department of Agriculture*, accessed at http://www.ers.usda.gov/data-products/chart-gallery/gallery/chart-detail/?chartId=107494 on March 11, 2024.

USDA (2024a) 'Food Distribution | USDA', *U.S. Department of Agricultural*, accessed at https://www.usda.gov/topics/food-and-nutrition/food-distribution on February 28, 2024.

USDA (2024b) 'USDA ERS - Food Prices and Spending', *US Department of Agriculture*, accessed at https://www.ers.usda.gov/data-products/ag-and-food-statistics-charting-the-essentials/food-prices-and-spending/ on March 11, 2024.

USDOT (2022) 'The Price Impact of the Strategic Petroleum Reserve Release', *US Department of the Treasury. Press Releases*, accessed at https://home.treasury.gov/news/press-releases/jy0887 on March 11, 2024.

Ussher, L. J. (2009) 'Global Imbalances and the Key Currency Regime: The Case for a Commodity Reserve Currency', *Review of Political Economy*, **21**, 403–421.

Varghese, S. and Suppan, S. (2023) 'As Global Hunger Remains Intractable, Food Price Volatility Accelerates', *Institute for Agriculture and Trade Policy*.

Von Braun, J. and Torero, M. (2009) *Implementing Physical and Virtual Food Reserves to Protect the Poor and Prevent Market Failure*, IFPRI.

Waugh, F. V. (1944) 'Does the Consumer Benefit from Price Instability?', *The Quarterly Journal of Economics*, **58**, 602–614.

Weber, I. (2018) 'China and Neoliberalism: Moving beyond the China Is/Is Not Neoliberal Dichotomy', *The SAGE handbook of neoliberalism*, 219–233.

Weber, I. (2021a) *How China Escaped Shock Therapy: The Market Reform Debate*, Routledge.

Weber, I. (2021b) 'China's Ancient Principles of Price Regulation through Market Participation: The Guanzi from a Comparative Perspective'. In *European and Chinese Histories of Economic Thought*, Routledge, pp. 246–258.

Weber, I., Jauregui, J., Teixeira, L. and Pires, L. N. (2022) 'Inflation in Times of Overlapping Emergencies: Systemically Significant Prices from an Input-Output Perspective', *Economics Department Working Paper Series*.

Weber, I. M., Nassif Pires, L., Teixeira, L. and Jauregui, J. L. (2024) 'Inequality Implications of Price Shocks to Essentials.'

Weber, I. M., Thie, J.-E. and Jáuregui, J. L. (2024) 'Caught between „shockflation" and „carbonflation"? Systemically Significant Prices, Carbon Prices and Sectoral Policy Targeting in an Input-Output Framework for Germany.'

Weber, I. M. and Wasner, E. (2023) 'Sellers' Inflation, Profits and Conflict: Why Can Large Firms Hike Prices in an Emergency?', *Review of Keynesian Economics*, **11**, 183–213.

Weber, I., Semieniuk, G., Liang, J. and Westland, T. (2022) 'Persistence in World Export Patterns and Productive Capabilities across Two Globalizations', *UMass Amherst Working Papers*.

Wiggerthale, M. (2022) 'Wird es eine globale Nahrungsmittelkrise geben?', *Oxfam Blog*.

Woods, J. E. (2022) 'Benjamin Graham on Buffer Stocks', *Journal of the History of Economic Thought*, **44**, 579–599.

World Bank (1982) *World Development Report 1982: International Development Trends; Agriculture and Economic Development; World Development Indicators*, The World Bank.

World Bank (2012) *Global Monitoring Report 2012 : Food Prices, Nutrition, and the Millennium Development Goals*, World Bank.

World Bank (2024) *Global Economic Prospects, January 2024*, Washington D.C., The World Bank.

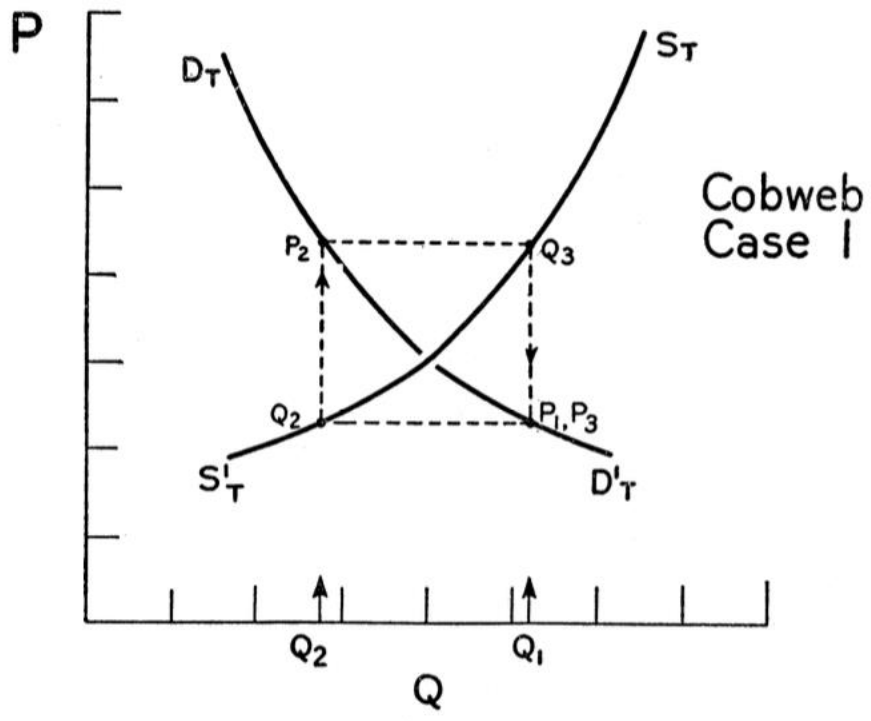
Wright, B. D. and Williams, J. C. (1982) 'The Roles of Public and Private Storage in Managing Oil Import Disruptions', *The Bell Journal of Economics*, 341–353.

YCharts (2024) 'Fertilizers Price Index', accessed at https://ycharts.com/indicators/fertilizers_index_world_bank on March 10, 2024.

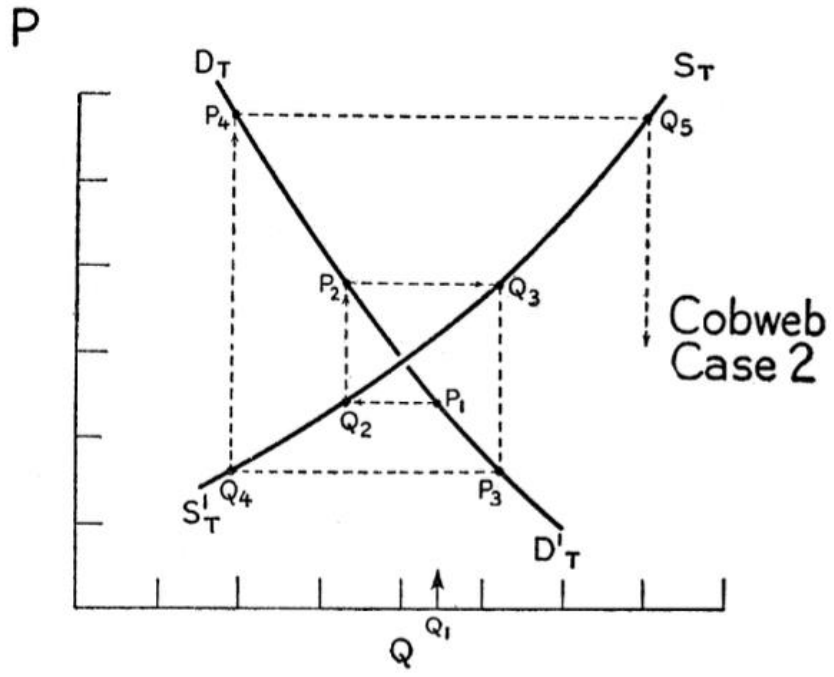
Annex A Figures

Figure 1: Cobweb Dynamics

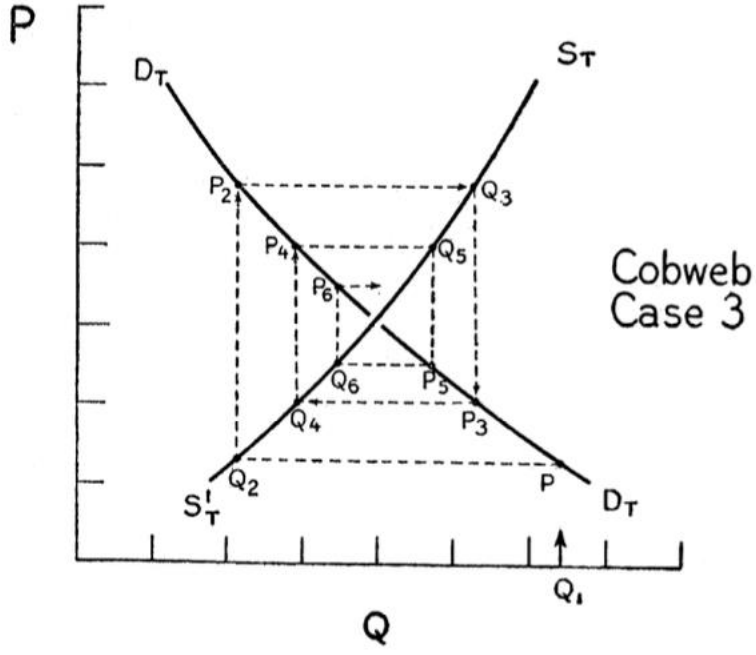
a) Continuous oscillation around equilibrium



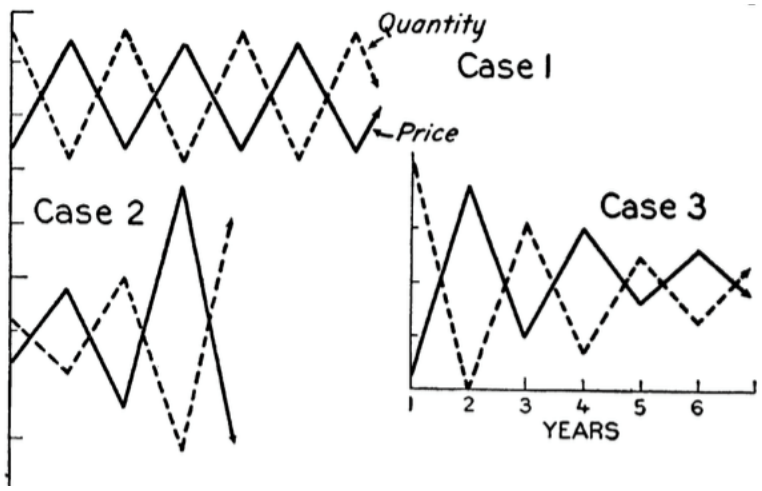
b) Divergence from equilibrium



c) Convergence to equilibrium



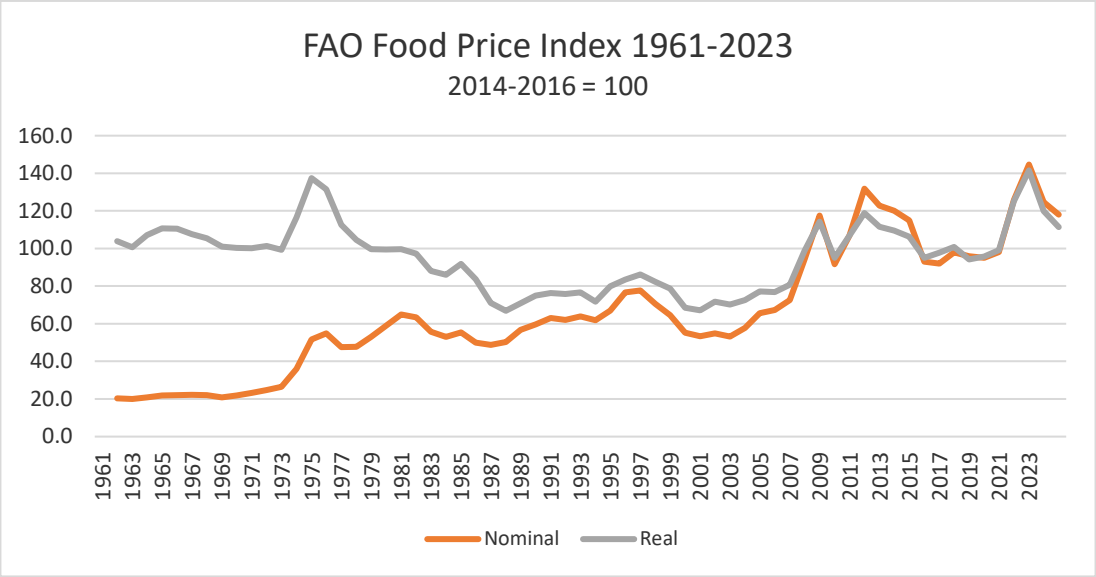
d) Time series of cobweb dynamics



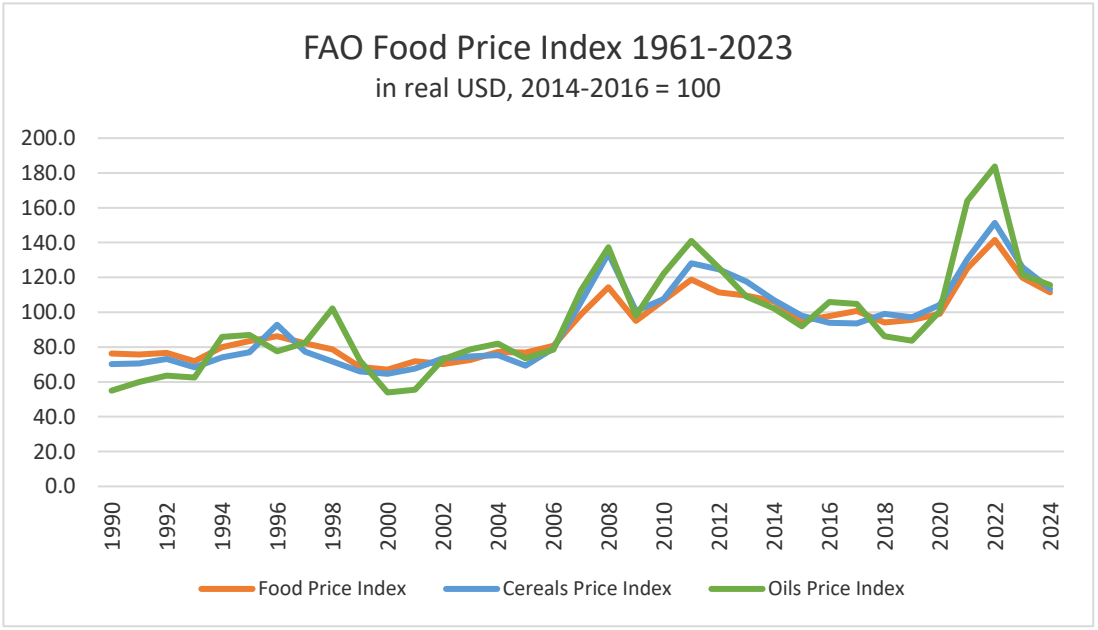
Source: Ezekiel 1930, Figures 2-5

Figure 2: Long-run food prices

a) Overall long-run food prices, 1961-2023



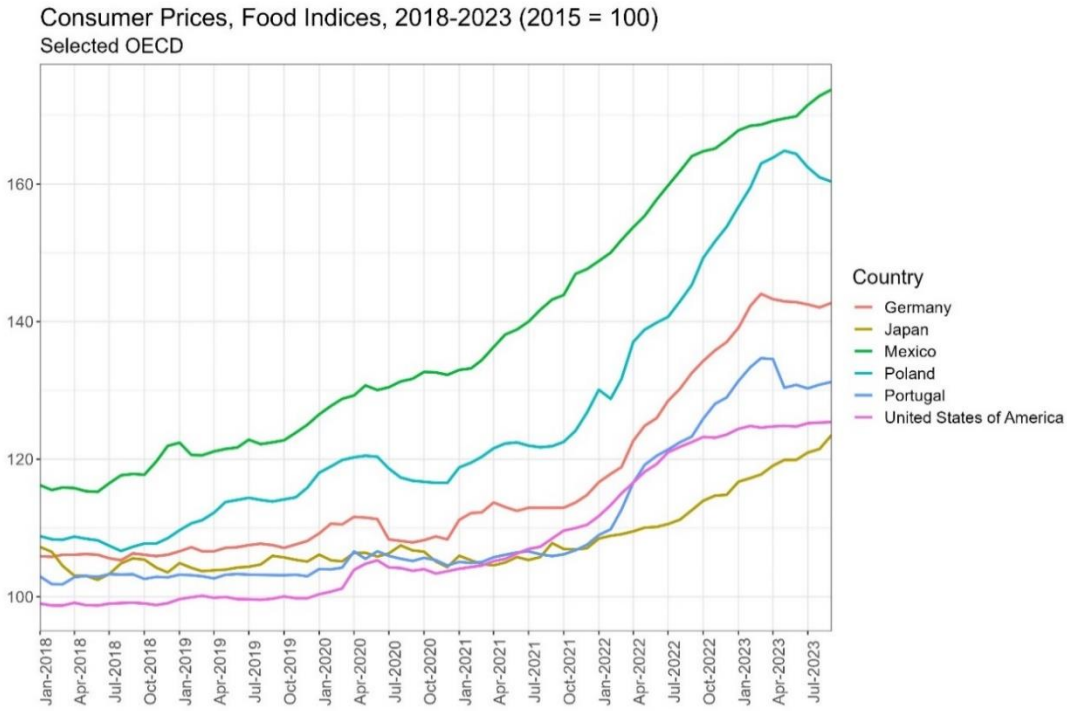
b) Long-run prices of edible oils and cereals, 1990-2023



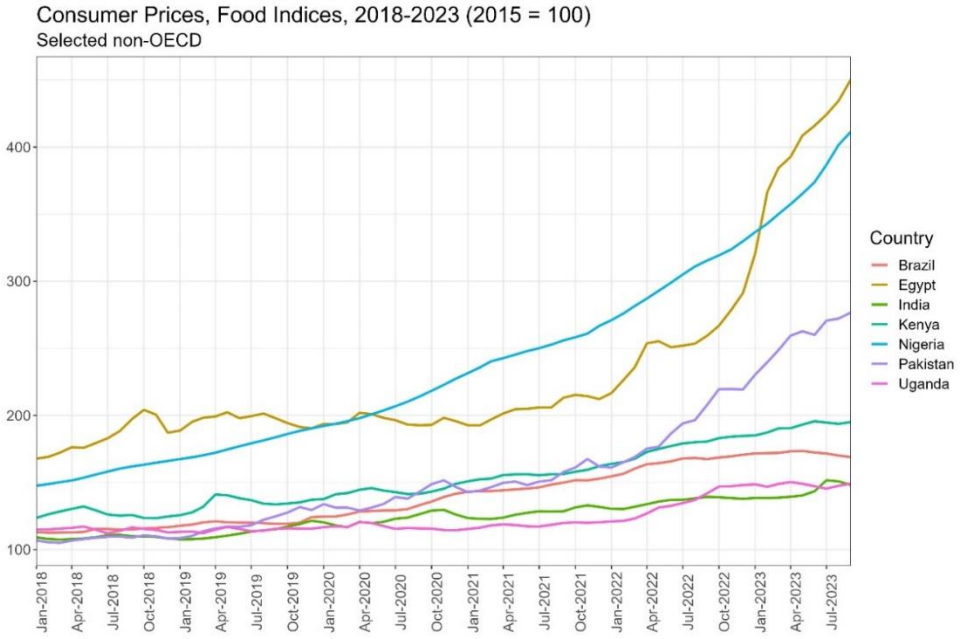
Data source: FAO, 2023

Figure 3: Food Price Inflation, country-level

a) Food Price Indeces, selected OECD countries, 2018-2023

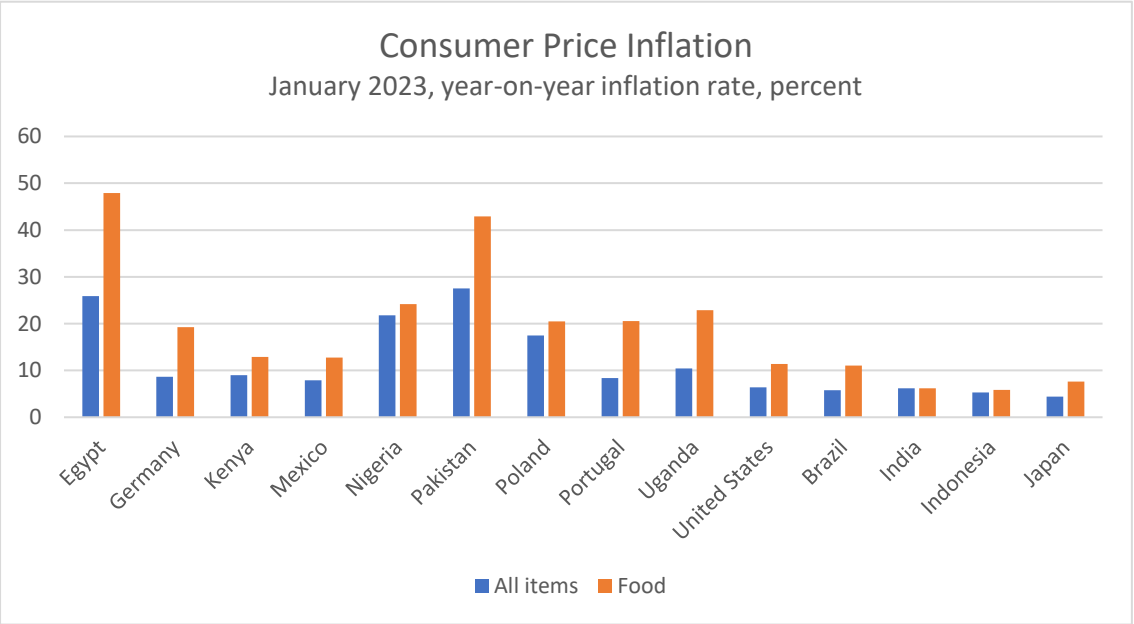


b) **Food Price Indeces, selected non- OECD countries, 2018-2023**



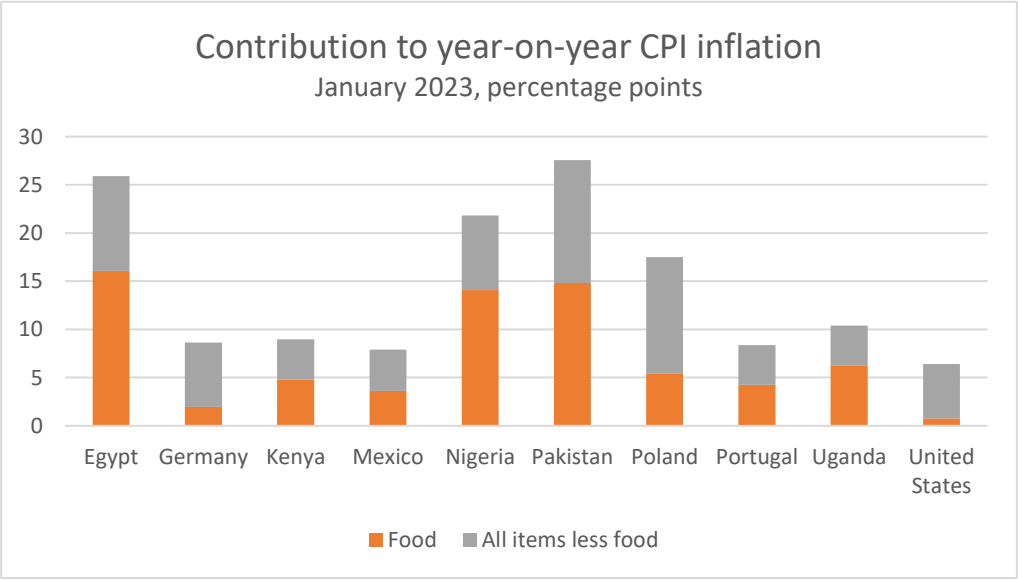
Data source: FAO Consumer Prices

Figure 4: Consumer Price Inflation, selected countries, Jan 2023 y-y inflation rate



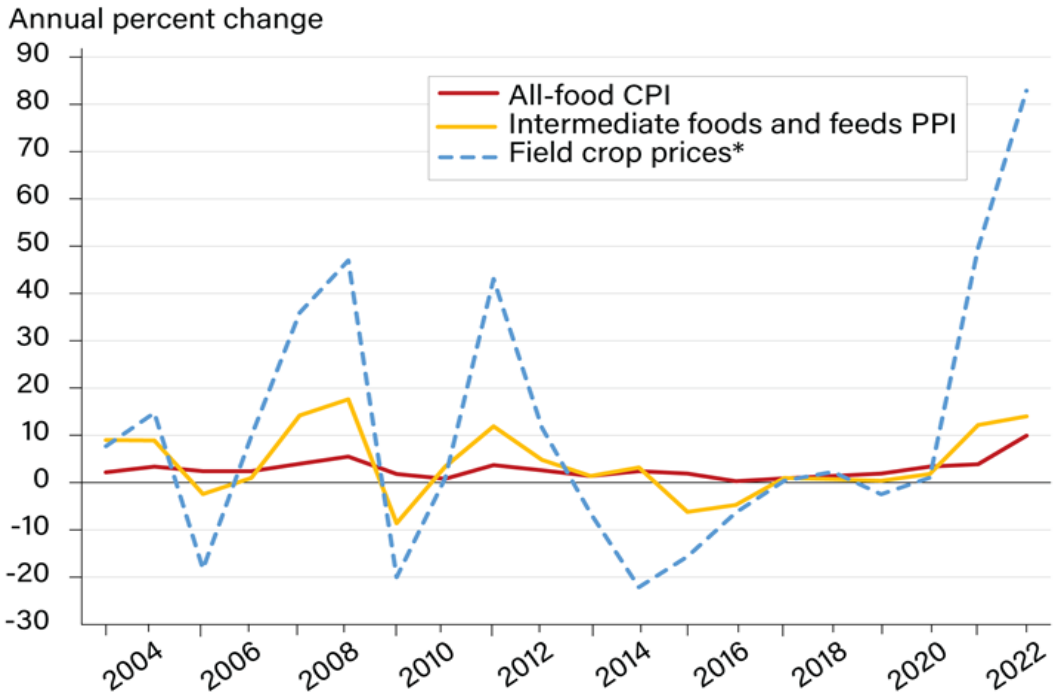
Data Source: FAO Consumer Prices

Figure 5: Contribution of Food Inflation to Jan 2023 y-y CPI inflation, selected countries



Data Source: FAO Consumer Prices, IMF CPI weights, authors' own calculations

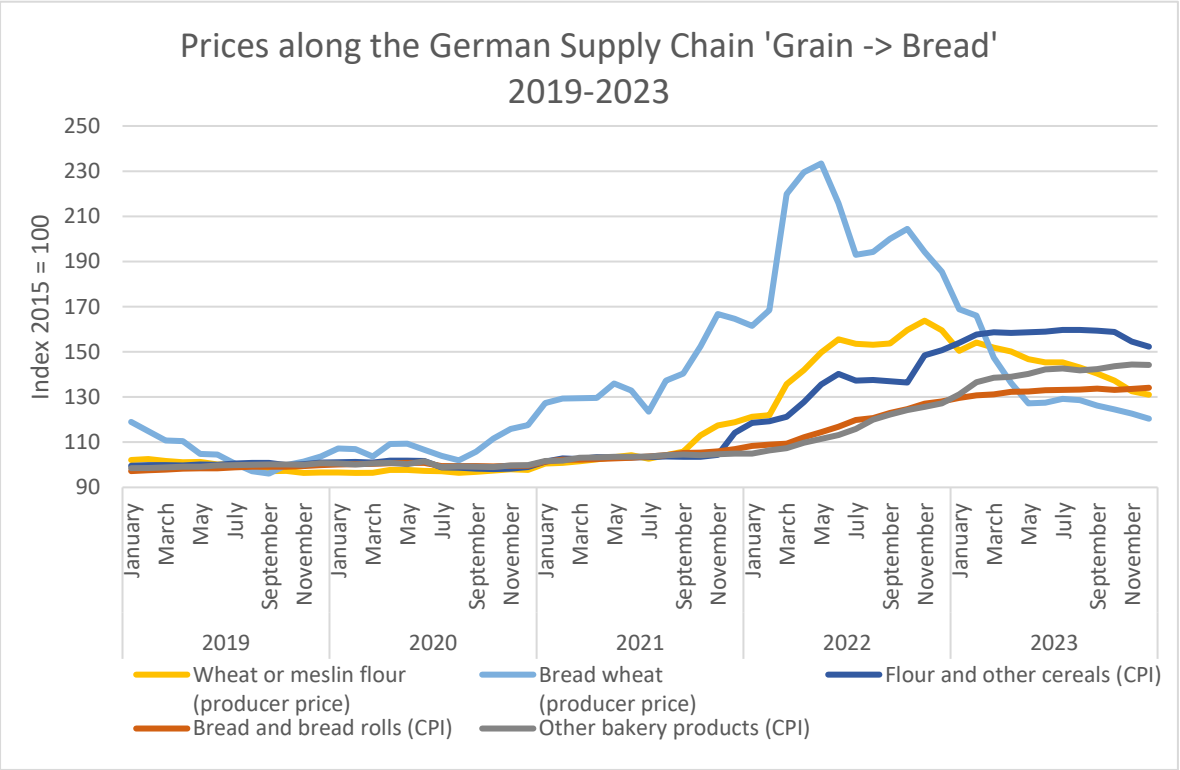
Figure 6: Change in Food CPI, intermediate foods and feeds PPI and field crop prices, 2003–2022



*Calendar year, production-weighted average for corn, wheat, and soybeans.
CPI = Consumer Price Index. PPI = Producer Price Index.

Source: USDA, 2023

Figure 7: Prices along the Bread Supply Chain (Germany), 2019-2023



Data Source: Destatis

Annex B Interview partners

1. Government official (Germany)
2. Business expert for the baking sector, baker (Germany)
3. Manager at organic agricultural trading company (Germany)
4. Economist at regional chamber of agriculture (Germany)
5. Business expert for milling sector (Germany)
6. CEO of milling company (Germany)
7. Labor union official representing food sector workers (Germany)
8. Baker (Germany)

9. Expert for cereals and oil seeds for the farming sector (Germany)
10. Business expert agricultural trading sector (Germany)
11. Business expert bakery sector (Germany)
12. Official at ports authority (Kenya)
13. Director at economics think-tank (Kenya)
14. Economist at trade economics research center (Uganda)
15. Assistant professor with focus on food and nutrition at university (India)
16. Senior researcher at NGO focused on international trade (India)
17. Professor global food security and sustainability at university (Canada)
18. Professor global food systems (USA)
19. Senior policy advocate and trade expert food systems at NGO (USA)
20. Trade policy consultant at NGO (Zimbabwe)
21. Official at national food corporation (Brazil)
22. CEO regional food bank (USA)
23. Business export for pork industry (China)
24. Agricultural economist (China)
25. Former government official (Ecuador)