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THE 1974 AND 2008 FOOD PRICE CRISES: DÉJÀ-VU?

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Sharply rising grain prices, food riots, increasing oil prices, low food stocks, low food aid deliveries, food export restrictions/bans, and blame assigned to speculators – are we talking about 2008 or 1974? The similarities between the two food price crises are striking. Although the world changed considerably between 1974 and now, as far as international food markets are concerned many of the same problems persist.

Did we not learn anything from the 1974 food crisis? Why did the solutions implemented in 1974 not prevent a recurrence? What can we do to prevent another future food price crisis?

This paper first discusses the similarities (and differences) between the 1974 food price crisis and the current one. I then provide my personal assessment of the policy options post 2008 (taking into account the successes and failures of policies implemented in 1974).

Similarities – and differences – between the 1974 and 2008 food price crises

Upon rereading a Time magazine article for Monday 11, 1974 (Time, 1974), it is striking how history repeats itself:

"The world's reserves of grain have reached a 22-year low….Low harvests and high prices have forced the traditional surplus-producing nations to curtail the amount of food that they normally give as aid…Argentina, Brazil, Thailand, Burma and the Common Market nations have restricted food exports….."

"Against this gloomy backdrop, about 1,000 delegates from some 100 nations and a dozen international organizations are gathering in Rome this week for the World Food Conference…."

"Food riots have become commonplace in vast sections of Bangladesh and India…"

Time also considered the causes of the crisis:

"Then came 1972. Bad weather started to plague so much of the world's crop land that many experts conclude the climate itself is changing…Harsh winters, droughts or typhoons cut output in the Soviet Union, Argentina, Australia, the Philippines and India..The weather improved in 1973, but a new set of problems threatened food output…Fertilizer was in short supply, and its price started to climb. Then came the devastating impact of the quadrupling of the market price of petroleum…"

With minor changes (mainly changing the dates, and some – but not all – the country names), this same article could have been reused in 2007/8.

Figure 1 plots wheat prices for 1973-4, and 2007-8 on the same graph (January 1973 is the base year for the 1973-4 plot, and January 2007 for the 2007-8 plot). Figure 2

provides a similar plot for rice. There are some differences, obviously. In 1973-4 the US dollar was falling against the European currencies, whereas it was rising in 2007-8. Therefore the 1973 crisis looks somewhat worse using US dollars, whereas the 2007 crisis looks worse using Euros, and the experience for individual developing countries depends on the major currency with which their own currency is more aligned. However, the similarities between the two crises in terms of the evolution of prices, is also very clear.

Grain Stocks

An analysis of world grain stocks suggests that there was no great surprise that food prices started to rise in 2007, and, given a small supply shock (drought in Australia) that a price crisis ensued. Figure 3 shows world wheat stocks at end-year for the period 1974/5 to 2008/9, and also shows that the stock-to-use (consumption) ratio globally reached its lowest level in 2007/08 since 1974/5.

It is expensive to hold food stocks, since food is after all bulky and perishable. World trade markets in food are thin, relative to many other commodities, and this is particularly true for rice where there are few net exporters.[1] Consumer demand for grain in poor countries is quite inelastic with respect to price, since poor people cannot substitute away from basic staples. Although price increases can send a signal to farmers to produce more staples, this takes a few months to have an effect.

For all these reasons, traded food markets are subject to price volatility, and the low stock-to-use ratio in 1973/4 and again in 2007/08 presented a vulnerability. All it required was an adverse event or set of events, to trigger a crisis. In the 1970s, the sequence of events was bad weather in the USSR, Asia and Africa in 1972, causing world production to drop nearly 40 million metric tons.[2] The Russians then – unusually – chose to import heavily to offset domestic shortfalls. The US had been in the process of drawing down their stocks (grain is expensive to stock), and due to poor surveillance was caught unaware of the large Russian purchases. Although production recovered in 1973, it was not enough to rebuild stocks. All it took was another year of adverse weather (in 1974 in Russia and the US), to precipitate a crisis.[3]

In 2007, grain stocks were again at record low levels, for reasons to be discussed further below. As in 1974, a major exporter (in 2008 the European Union) had been deliberately running down stocks, as a consequence of rationalization in the Common Agricultural Policy. The butter and beef mountains (and milk lakes) which had built up due to farm support prices, had dwindled, as the Common Agricultural Policy was reformed. All it

[1] Thinness implies that only a small proportion is traded as compared to domestic consumption.
[2] Hathaway 1975.
[3] *Ibid.*

then took was adverse weather in some major producing areas to push food prices (which had been trending upwards in 2005 and 2006) more severely upwards.[4]

Energy Prices

Both in 1974 and 2008, oil price rises were a trigger for food price increases. Oil prices rose almost 450 percent from October 1973 to May 1974, partly related to OPEC's response to the Yom Kippur war in October 1973, and compounded by a commodities boom.[5] Fertilizer prices also track oil prices, and in 1974 this was exacerbated by Morocco deciding to treble the price of rock phosphate in the first half of 1974.[6] Although the increase was not quite the same magnitude in the more recent crisis, oil prices almost doubled between August 2007 and August 2008, again as part of a commodities boom. Between January 2000 and September 2007, oil prices and wheat prices tripled, and corn and rice prices doubled [7]. The link is not surprising: food production requires energy (for machinery, petrochemical inputs such as fertilizer, as well as transporting output).

Increased Demand

These trigger events, however, do not precipitate a food crisis, without an underlying imbalance in supply and demand. In 1974, the strong increase in demand resulted from a combination of relatively fast population growth in the developing world, and rising demand for meat in the industrialized world. In the developing world, the demographic transition was in its early stages, where mortality rates were dropping but birth rates had not yet responded.[8] The Club of Rome had recently published (in 1972) its first report on "The Limits to Growth", reflecting concerns over population growth and pressure on resources. In the industrialized countries, demand for meat was increasing and Francis Moore Lappés Book "Diet for a Small Planet" had been published in 1971. The book highlighted the inefficiency of animal-based diets, whereby it takes 3 calories of grain to produce 1 calorie of meat for human consumption using chickens and pigs, and 8 calories using cows. The Soviet Union chose to import grain to maintain grain and animal product consumption despite domestic crop downturns.

Although circumstances were different in 2008, the phenomenon of increasing demand was the same. The developing countries were much further along in the demographic transition and birthrates had fallen (although population growth will continue for some decades as a result of the very young population age structure). However, a major driver was rapid economic growth particularly in China and India, where almost one-third of the world's population lives. In these countries, more affluent consumers demanded more animal products – more meat in China, and more dairy (and somewhat more meat) in

[4] The adverse weather events included drought in Australia causing a considerably lower wheat crop, as well as floods in Northern Europe and a heatwave in Southern Europe, all of which disrupted production in 2007. Hadley, 2007.
[5] Rogers 2008.
[6] *Ibid*.
[7] Von Braun, 2007
[8] *Ibid*.

India; a similar phenomenon was underway in other large developing countries such as Brazil.

One new factor in 2008 was the demand for food grains to produce biofuel. Rising fuel prices – and dwindling oil stocks – led industrialized countries to subsidize the production of biofuel, whose production has risen dramatically since 2000[9]. The US for example has mandates for ethanol blending, and tariffs on imported ethanol, as well as subsidies.[10] The percentage of the US corn crop used for ethanol production has risen from 6 percent in the 2001/02 crop year, to 18 percent in 2007/08 and 24 percent in 2008/09 (See IFIF/FAO, 2006, and 2008 data from Kojima and Klytchnykova, 2008). Similarly Brazil has legislation requiring ethanol-gasoline blends, and devotes half its sugarcane to ethanol.[11] The biofuel phenomenon is therefore closely linked to energy prices discussed in the previous section.

The International Food Policy Research Institute's IMPACT model predicts that this has had a noticeable effect on food prices. If biofuel demand were to be frozen at 2007 levels, the model predicts significant drops in food prices (notably maize, 6 percent lower by 2010 and 14 percent lower by 2015), with smaller effects for wheat, cassava, sugar and oils: Table 1, using Rosegrant, 2008). If there were a complete moratorium on using agricultural products to produce biofuel, the effect would be even stronger. Maize prices would be 20 percent lower in 2010 and 21 percent lower in 2015, with double digit drops in 2015 also for wheat, sugar and cassava.

In the very long run it is predicted that second generation biofuels will compete less directly with food consumption, as production using sugar cane waste, cellulose and even algae become economical.[12] In the short-run however, US policies are both inefficient (favoring domestic ethanol production using maize, which is more costly than production using sugarcane from Brazil) and compete more directly with food (land used for sugarcane is not as directly substitutable to grain production, and world sugar prices remain depressed).

The hubris over biofuel from the earlier 2000s, diminished somewhat in 2008, with the sobering realization that – absent additional investments in agriculture – "green" fuel for cars competes directly with feeding poor people. The solution is probably not to put the brakes completely on biofuel, but it requires careful consideration of distortions (favoring maize use over sugar, for example), of the overall greenhouse gas effect of biofuels, and it requires renewed attention to agricultural research.

Speculation and middlemen

In 1974 and also in 2008, speculators and middlemen were blamed for rising prices. Economists regard trading in grain futures as a generally useful phenomenon, allowing

[9] IFIF/FAO 2006; Renewable Fuels Association 2008.
[10] Rosegrant 2008.
[11] Kojima and Klytchnikova, 2008
[12] *Ibid*.

producers to hedge against risks for example. Obvious abuses such as "cornering" markets (secretly amassing a large enough position to dominate a market in a specific crop) are considered undesirable, but such abuses can be limited by requirements for disclosure and transparency. However, speculators can clearly exacerbate short-term price volatility.

Leading up to the 1974 crisis, a lot of blame was attached to sales of subsidized US grain to Russia, described in the press as "the great grain robbery"[13] At the time, the US was trying to decrease large and costly grain stocks, and the US Department of Agriculture (USDA) had been managing an export subsidy program. However, as the General Accounting Office concluded in hindsight, there were some problems with the program. Exporters had the option of determining the date when they registered for the subsidy, which made it possible for the Russians to conclude a number of deals before the USDA realized the scale of their purchases. The General Accounting Office likewise argued that "(t)he trading rules and procedures of the USDA were not adequate for dealing with the bargaining power of a foreign state trading monopoly"[14]. Although this did not lead immediately to a food price crisis, it meant that stocks were unusually depleted leading into the 1974 crisis. Some of the blame also was attached to the large, private and secretive grain companies such as Cargill: "The company became a prime target when the U.S. government went after the big grain exporters for allegedly manipulating the market. It emerged largely unscathed"[15]

In the 2007 crisis, critics pointed the finger at speculators. IFPRI quotes David King, the Secretary-General of the International Federation of Agricultural Producers as saying "Even if it is difficult to gauge the real impact of this financial speculation, it has certainly played a role in influencing trading prices. Take for example the fact that in a normal year, trading and movements on the wheat futures market in Chicago represent the equivalent of 20 times the annual U.S. wheat harvest. In 2007/2008, these movements represented the equivalent of more than 80 harvests."[16]

This is however a symptom of the problems in grain markets, rather than an underlying cause. Arguably it is more important to protect the "entitlement" of poor consumers to buy food (through protecting their ability to get work or to use social safety nets, following Amartya Sen's seminal work), than to spend resources tinkering with futures and hedges. The response of governments to price hikes (imposing export bans etc) is equally damaging to market functioning. In 2008 29 countries imposed such bans during the crisis, behavior which had also occurred in 1974.

Food Aid

Figure 3 displays another lamentable similarity between the 1974 and 2008 crises. Food aid varies pretty much exactly inversely with food prices (donors tend to set budgets in

[13] Luttrell, 1973.
[14] Luttrell, 1973
[15] Weinberg and Coppell, 2002.
[16] IFPRI 2008.

dollars, such that much less food is provided at times of higher prices). Thus, cereal aid was the lowest in 1973/4 of any year (other than 1988) during the 20-year period from 1970 to 1990, and similarly food aid was the lowest in 2007 of any year during the 17 year period from 1990 to 2007 (having declined fairly consistently in volume since 1999). Thus food (or cereal) aid, far from being a stabilizing force during food crises, dries up exactly when it is most needed. (Note that the volume of food aid, is slightly higher than that of cereal aid, due to the inclusion of modest amounts of non-cereal products such as skim milk powder, canned fish, etc. No source was found that had a consistent single series for either cereals only, or all food aid, from 1970 to the present). Figure 3 also plots the wheat price for the same years, and shows the clear inverse relation with food (or cereal) aid.

It is too soon to know what the consequences of the 2008 food crisis will be, and how these will parallel those of the 1974 crisis. We do know that food crises restrict both the quantity and quality of diets of the poor. Isenman shows using time series data that the elasticity of the death rate with respect to the rice price in Sri Lanka was 0.15. He estimates that the increase in rice prices during the 1974 crisis, was associated with an increase in the death rate from 7.7 to 8.9 per '000.[17] One would expect that many of these deaths were among children, and that the corresponding increase in the infant mortality rate would be considerably higher. There are some predictions of the effect of poorer diet quality in 2008. Bouis estimates that a 50 percent increase in food prices in Bangladesh will cause a 25 percent increase in anemia rates (as households purchase fewer animal products and vegetables, in order to maintain staple consumption).[18]

International governance, the 1974 food crisis, and possible responses to the 2008 crisis

The 1974 food price crisis was a harbinger of further instability in the world economic system, with the second oil price increase in 1978 which led into the debt crisis and a long decade of little growth in the developing world in the 1980s. It is too soon to know what will follow the 2008 food price crisis, but all the current indications are of similar recession and growth slowdown, which will compound the adverse effects on the developing world.

In response to the 1974 food crisis, a World Food Conference was convened in November of that same year. Hathaway provides a very useful summary of the outcomes. The conference emphasized three solutions. The first was to increase food production in developing countries, applying more agricultural inputs, and improving policies in order to encourage agricultural production (although Hathaway drily notes the "the nature of such policies was never spelled out".) The second solution was a better food security system worldwide, with better information, a system of stocks, and increased food aid, and the FAO was given responsibility for this. Finally, trade was considered important. Hathaway again comments: "Little was expected on this issue, and

[17] Isenman 1980.
[18] Bouis 2008.

the developed countries guaranteed this outcome by insisting trade issues could be discussed only in the trade negotiations already under way."[19]

There were also three new institutions created in the wake of the crisis. These included the World Food Council, which was to oversee the global food security mandate. This was disbanded in 1993 and its functions transferred to FAO. The second was what became in 1977 IFAD, the International Fund for Agricultural Development, which still exists. The second was the Consultative Group on Food Production and Investment, which only lasted three years.

So what is the way forward for the global governance of food and agriculture given what we know from recent and not so recent history of food crises? Some thirty years later, we can assess the policy outcomes from the 1974 crisis with hindsight (and I will stress that these are personal observations). I focus on three aspects: productivity; trade and markets; and protecting the poor.

First, on increasing agricultural productivity; the Consultative Group on International Agricultural Research system was built up throughout the 1970s (the first four centers combined to form the Group in 1971 prior to the crisis, and were joined by another nine new centers up to 1980, and four additional centers in the first years of the 1990s). Although the Group performed a valuable role in developing publicly-available agricultural resources, by the beginning of the new millennium it was clear that the group was struggling (and some centers have been closed or amalgamated). The Group has not been able to catalyze what is arguably the most urgent need, namely to improve technology for rainfed agriculture that characterizes much of sub-Saharan Africa. The CGIAR is currently well along in a major organizational reform – much needed, since maintaining productivity growth in agriculture is essential. However, one telling fact is that "development aid for agriculture dropped from 18 percent in 1979, to just 2.9 percent in 2006".[20] Given the predicted adverse effects of climate change in much of sub-Saharan Africa, the urgency of need for improved technology is growing ever-greater.

The world food security system reform from 1974 has not, in my opinion, been highly successful, and I would be extremely skeptical that a renewed attempt with new institutions will work any better. Two of the three new institutions created after 1974 did not survive. The third one – IFAD – was not a major player in the 2008 food crisis. Although it arguably has done solid work on rural development and rural credit, this on its own was not enough to substantially improve food security.

I would offer the usual economist perspective, that removing obvious market distortions is important. So for example while economic theory suggests that it is reasonable to subsidize biofuel development on a temporary basis, one should review very carefully the optimal subsidies. For example, is it less harmful to subsidize ethanol from sugarcane than from maize, if sugar is grown on land which cannot readily be used for grain? Should one carefully consider the greenhouse gas emissions (which differ between the

[19] Hathaway 1975.
[20] Båge, 2008

different crops which can generate ethanol), and take these into account when deciding what to subsidize? Not all "green" ethanol fuels are equally "green". And if one is going to in future pit consumers in the OECD and their demand for transportation, against poor consumers in the food-deficit countries, should there be some responsibility for ensuring better social safety nets in the developing world? These could be food-for-work programs, the currently-fashionable contingent income-transfer programs, etc. Improving safety nets is a long project, and the food crisis simply underscores its importance and urgency.

Finally, on the trade agenda, considerable progress has been made since the 1970s, despite the skepticism at that time by Hathaway. Agriculture did enter into the GATT round of the 1990s, and considerable work was done to dismantle the worst excesses of the Common Agricultural Policy and in North American policy, with their attendant disincentives to developing country agriculture. Of course, there is considerable additional work to be done. The labour-abundant poor countries in Asia have benefitted from increased market access for manufactures, and this has had considerable impact on poverty – although the benefits to Africa from increased trade are much more uncertain. I would hope that the crisis does not cause reversion to a protectionist mindset.

Given my own research agenda, I would argue that there are important needs to protect nutrition of poor households in general, which are particularly important at times of crisis, and I would draw two implications. First, interventions to improve nutrition have to be cost-effective. There are over 900 million people whom the FAO classify as "hungry", lacking adequate food. Solutions which are not relatively low cost, and cost-effective, cannot be used at scale.

Second, there is a need for continued investments in micronutrients to protect diet quality and reduce mortality and morbidity. These have been determined by the Copenhagen Consensus process as among the top 6 development priorities (out of more than 40 examined) on the basis of benefit-to-cost ratio, sustainability and feasibility.[21] Investments in micronutrients, through supplements and fortification, can help to protect vulnerable populations through times when diet quality deteriorates. Although these do not solve the longer term issues, food fortification and supplements for vulnerable groups can protect health (and in the extreme, reduce mortality rates) while longer term solutions can be implemented. It is particularly unfortunate to hear of examples such as that of Senegal, which used funds for a temporary food subsidy during the crisis, and then encountered difficulties in funding the Senegal Nutrition Enhancement Program (France Begin, Micronutrient Initiative, pers. comm.).

In closing I would say that the most important policy lesson of the 1974 crisis – that additional investment in agricultural development is a high priority – is even more true in responding to the 2008 crisis. Climate change is bringing additional urgency to the needs in this area. Yet the rapid transition from a global food price crisis, to a global financial crisis, may distract our attention from the issue. I hope that we can learn from the 1974

[21] Horton et al, 2008

crisis, and respond better in following the 2007 crisis, so that we can prevent (or at least minimize) the next food price crisis.

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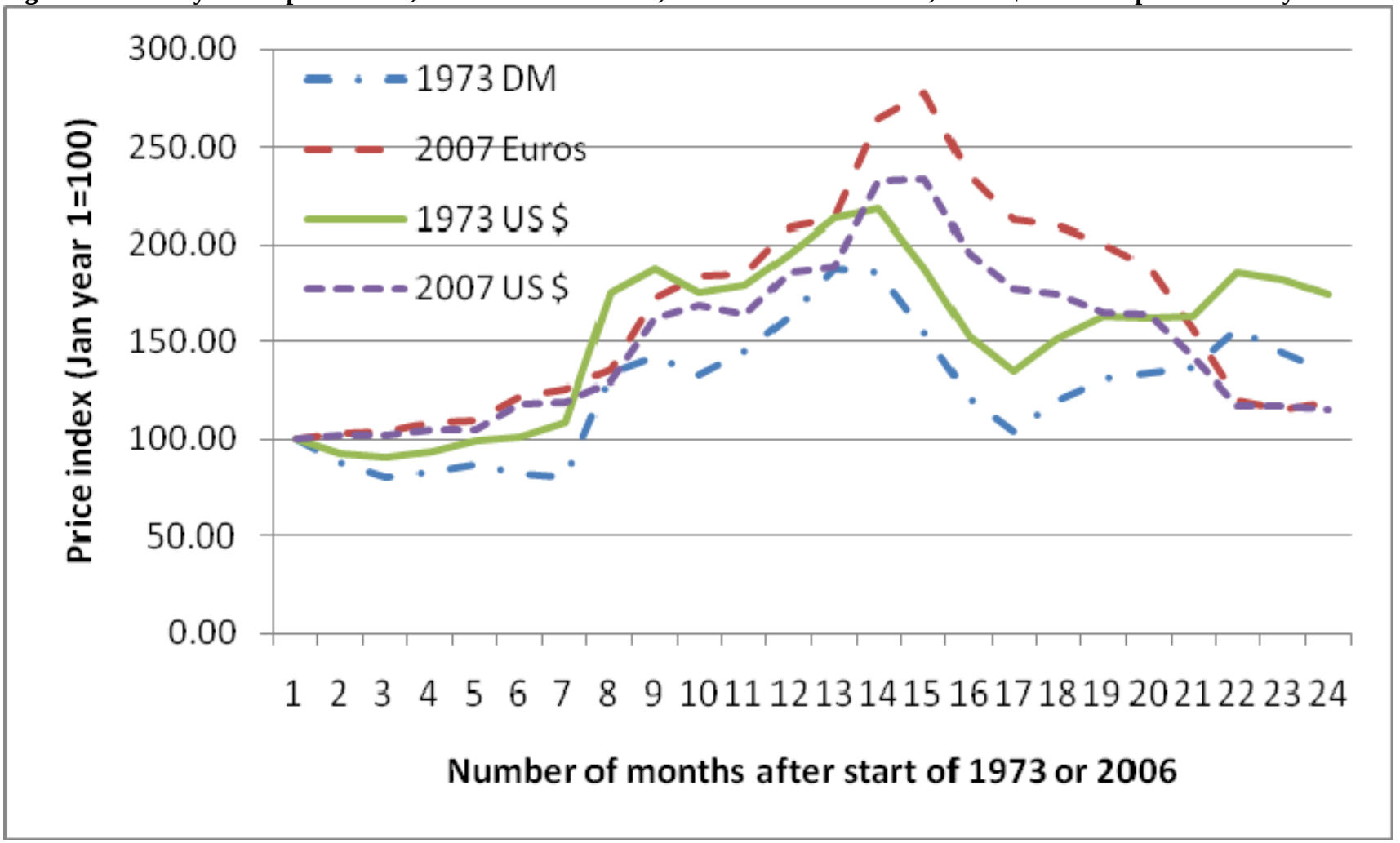
Table 1. Percentage change in selected crop prices, if biofuel demand were limited

Crop	Biofuel Freeze 2007 levels Prices in 2010	Biofuel Moratorium Prices in 2010	Biofuel Freeze 2007 levels Prices in 2015	Biofuel Moratorium Prices in 2015
Maize	-6	-14	-20	-21
Wheat	-2	-4	-8	-11
Sugar	-1	-4	-11	-12
Oils	-2	-6	-1	0
Cassava	-2	-5	-14	-19

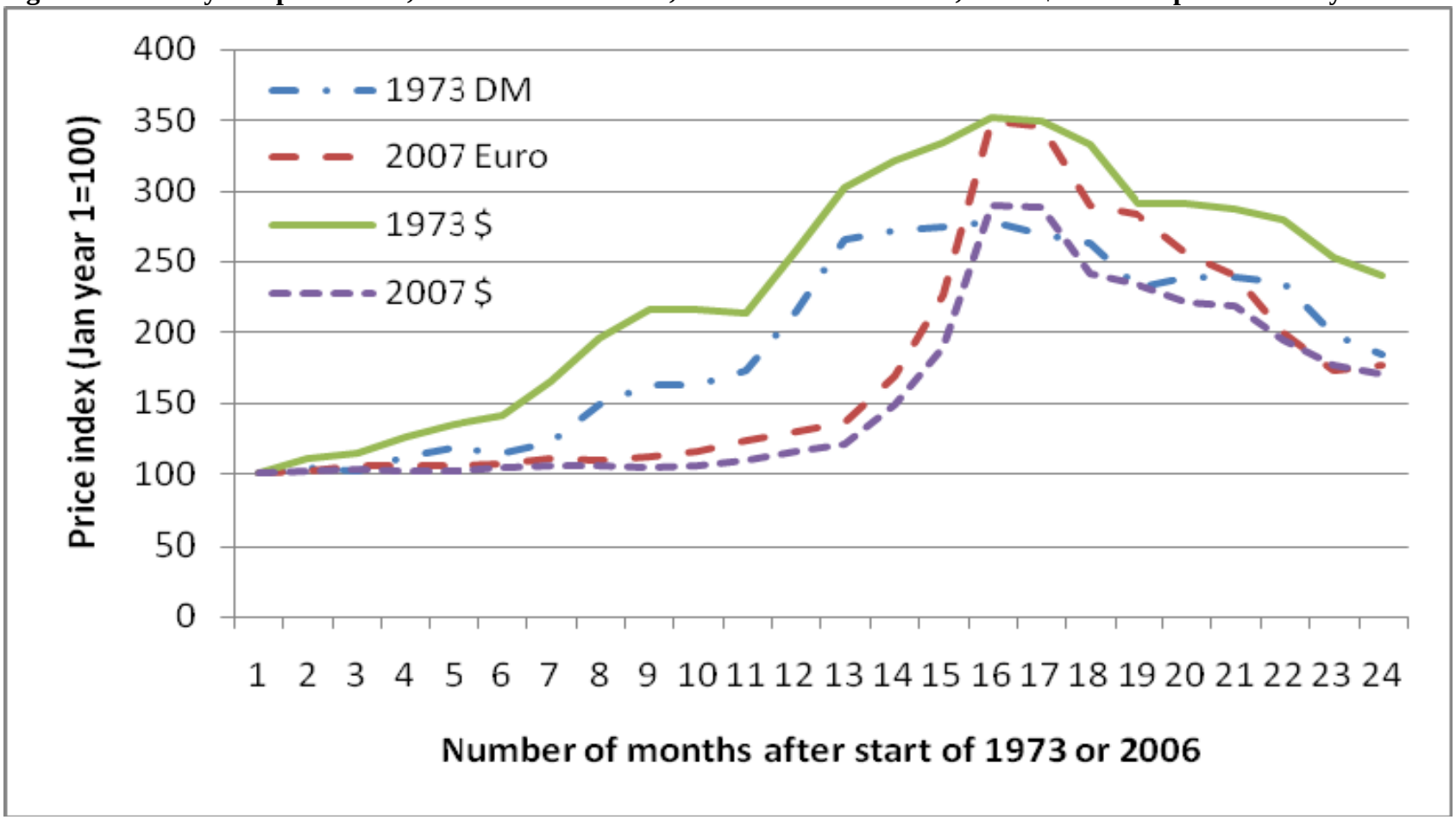
Source: Rosegrant, 2008

Figure 1: Monthly wheat price index, Jan 1973 to Dec 1974, and Jan 2006-Dec 2007, in US $ and European currency



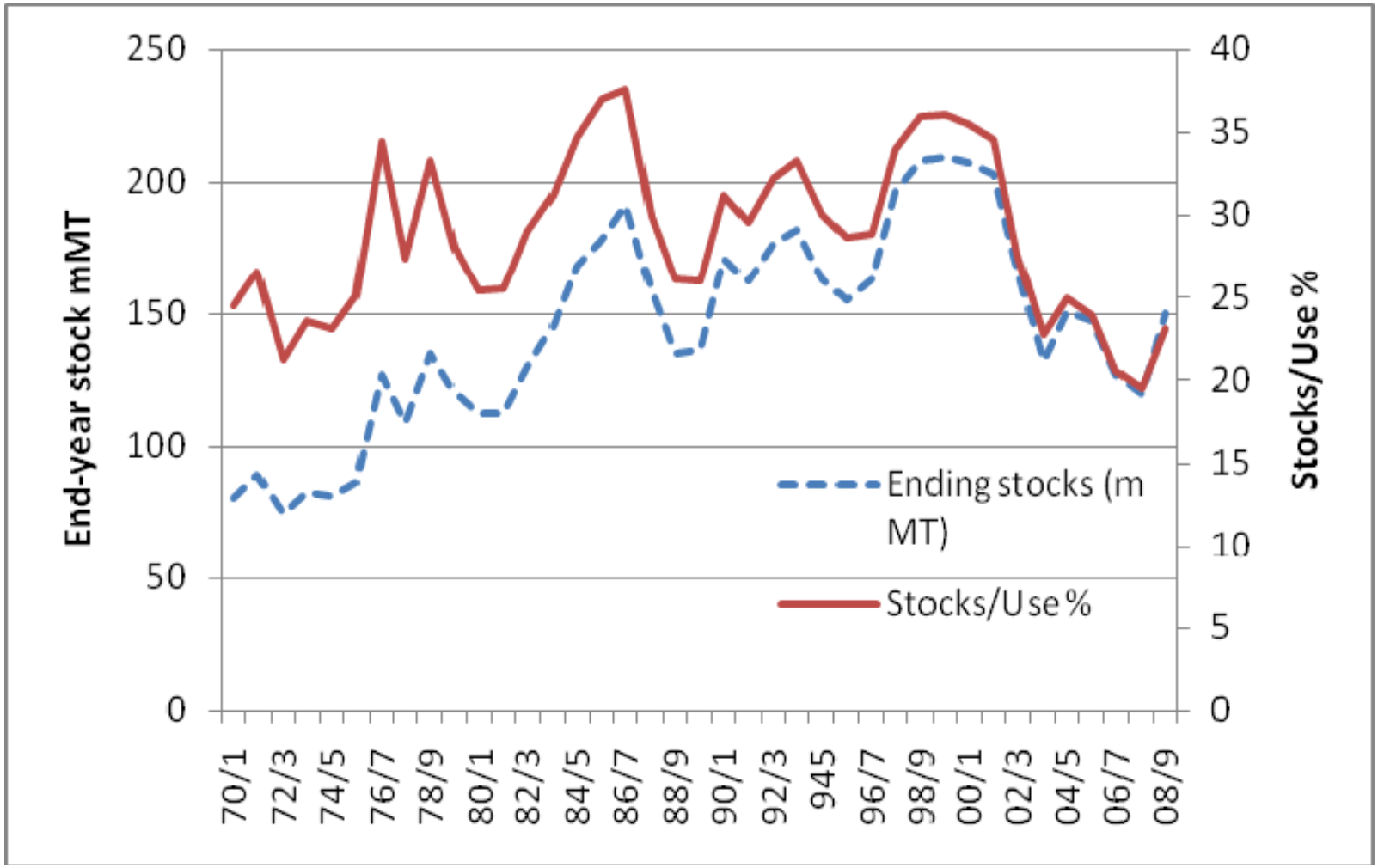
Source: Wheat data for No 1 hard red winter (ordinary protein) wheat, Kansas City MO; USDA-ERS (2009); US $/Euro exchange rate from Federal Reserve Bank (2009); US $ rate from Federal Reserve Bank of St. Louis (2009)

Figure 2: Monthly rice price index, Jan 1973 to Dec 1974, and Jan 2006-Dec 2007, in US $ and European currency



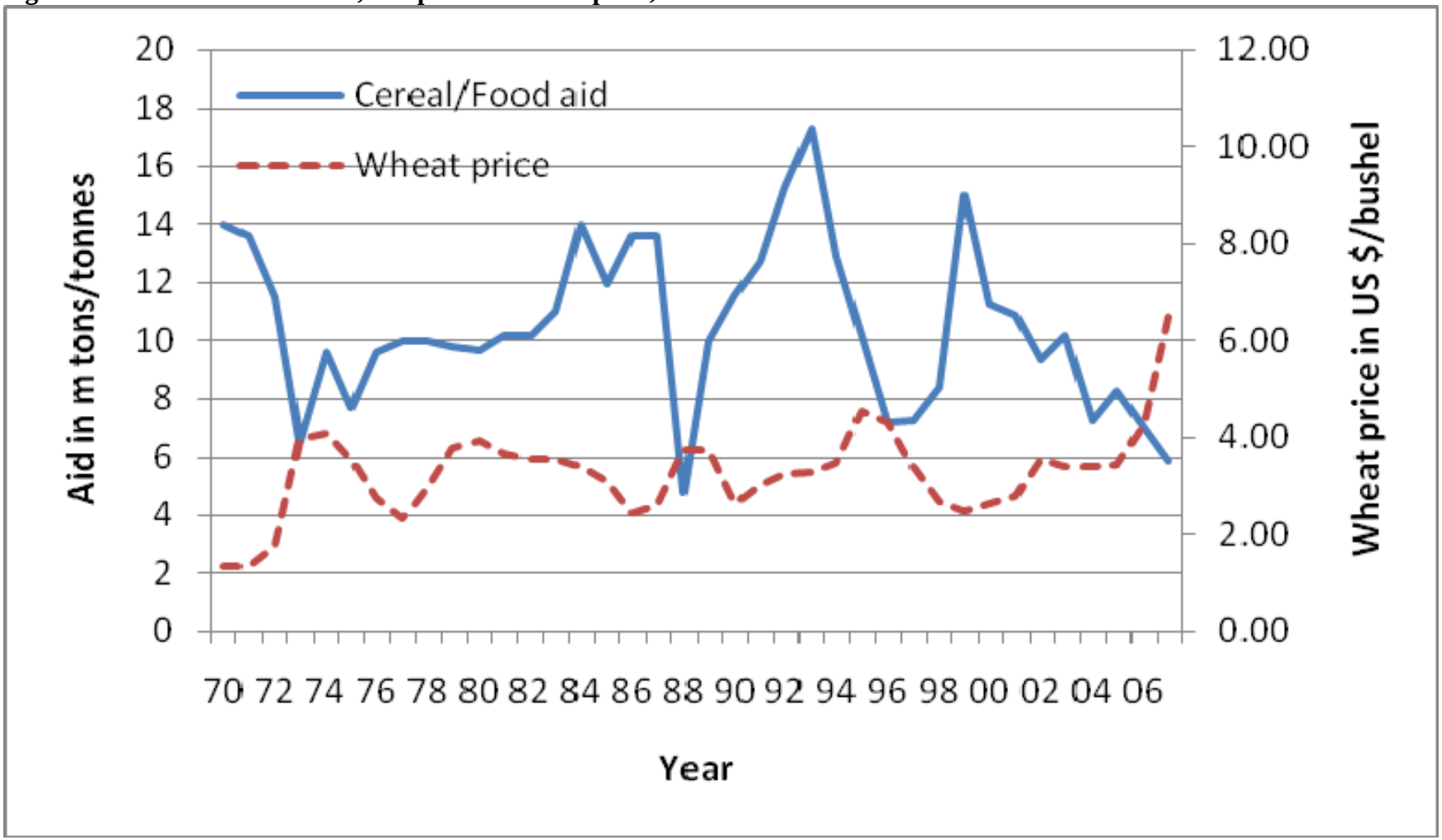
Source: Rice price data Monthly export price (US $/t fob) Thai rice 5% brokens, IRRI 2009; See Figure 1 for sources for exchange rates

Figure 3. End-year wheat stocks, and stock-to-consumption ratio, wheat (worldwide) 1970/71 – 2007/08



Source: Calculated from USDA (2008)

Figure 4: World cereal/food aid, compared to wheat price, 1970-2007



Cereal aid 1970-1990 in m tonnes (July/June year); food aid 1990-2007 in m tons (calendar year) (non-cereal accounted for 1.6m tons in 1990); wheat price is US no. 1 hard red winter (ordinary protein) Kansas City in US $/bushel