FACULTEIT ECONOMIE
EN BEDRIJFSKUNDE

TWEEKERKENSTRAAT 2
B-9000 GENT
Tel. : 32 - (0)9 – 264.34.61
Fax. : 32 - (0)9 – 264.35.92

WORKING PAPER

Narrative Global Food Commodity Market Shocks

Jasmien De Winne **Gert Peersman**

October 2016
2016/925

D/2016/7012/09

Narrative Global Food Commodity Market Shocks*

Jasmien De Winne
Ghent University

Gert Peersman
Ghent University

July 2016

Online appendix to "Macroeconomic Effects of Disruptions in Global Food Commodity Markets: Evidence for the United States"

This appendix documents the construction of a narrative series of exogenous global food commodity market shocks. More specifically, we rely on historical documents to identify episodes of changes in food commodity prices that were unrelated to the state of the economy, i.e. movements where the proximate causes were disturbances in food commodity markets. The series is constructed by reading FAO reports, newspaper articles (e.g. the *Financial Times* archive), disaster databases (e.g. EMDAT) and several other online sources (e.g. *Google news*). The task is daunting given the global level of the analysis. There are continuously, many times even conflicting, events affecting food commodity markets somewhere in the world. We therefore only select episodes that fulfill the following criteria:

1. There has to be an event that is important enough to affect food commodity markets at the global level, such as weather shocks in a major food production region, or unanticipated news on the volume of global food production (e.g. a sizable revision of expected agricultural production by the USDA).

2. The event should have an unambiguous significant effect on global food commodity prices. A shift in commodity prices is considered to be significant if either the quarterly

*Email: jasmien.dewinne@ugent.be; gert.peersman@ugent.be. We acknowledge financial support from the Research Foundation Flanders (FWO) and the UGent Special Research Fund (BOF).

change in food commodity prices or accumulated change over two subsequent quarters is at least one standard deviation different from the sample mean.[1]

3. There should be no developments in the macroeconomy, alternative events or macroeconomic news that may also have a recognizable impact on food commodity prices. For example, we exclude admissible food market events if there is simultaneously a significant shift in crude oil prices (one standard deviation different from its sample mean), or in economic activity (e.g. a global or US recession). Put differently, we eliminate or minimize possible endogenous movements in food commodity prices to current or future fluctuations in the business cycle, i.e. the event in food commodity markets has to be the proximate cause of the price shift.[2] All ambiguous cases are not selected as an episode.

By applying these criteria to the historical records, we were able to identify 13 episodes that could reasonably be interpreted as major exogenous food commodity market disturbances that are unrelated to the state of the economy. 6 of these episodes are unfavorable food market disruptions, whereas we have detected 7 favorable shocks to food commodity markets. The remainder of this appendix motivates the selection of each episode. We also provide excerpts of articles and reports on which we based our motivation. Relevant quotes are marked in bold. Unless otherwise mentioned, changes in real food commodity prices are calculated as the change in the food commodity price index from the International Monetary Fund (IMF), deflated by US CPI. The real oil price series is the refiner acquisition cost of imported crude oil, deflated by US CPI. Cereal production is the global (annual) production of corn, wheat, rice and soybeans downloaded from FAOSTAT, aggregated on a caloric-weighted basis as described in the paper.

[1]The standard deviations of the quarterly change in food commodity prices and accumulated change over two subsequent quarters are respectively 5.7 and 9.1 percent, while the means are respectively -0.31 and -0.62 percent.

[2]Crude oil is not only used in the food production process, or a close substitute for food commodities to produce energy products. A shift in crude oil prices could also signal changes in (expected) demand for commodities more generally.

1972Q3 - Russian Wheat Deal & failed monsoon in South Asia

Type Unfavorable food commodity market shock

Food commodity market event Wheat production in the USSR, which is one of the most important wheat producers worldwide, was 13% lower in 1972 than in 1971 due to disastrous weather conditions. This resulted in purchases on an unprecedented scale by the Soviet Union on the world market, in particular US wheat, leading to large price increases from July and August 1972 onwards. The sales were equivalent to 30 percent of average annual US wheat production during the previous five years. The negative consequences of the bad weather conditions in the USSR were only known very late, and were perceived as a considerable shock worldwide since only a few months earlier there were reports of heavy surplus stocks building. The sales involved a series of subsidized transactions following an agreement whereby the US made available credit to the USSR for the purchases. The rise in wheat prices was further accelerated by a decision of the US to suspend the subsidies normally paid on exports.

At the same time, the global agricultural sector was severely affected by monsoon failure in most of the Southeast Asia summer season, followed by extremely dry weather throughout autumn and early winter. The EMDAT Database lists droughts for Nepal, India and Indonesia in that period.[3] All important rice producing countries of the region had poor or very poor harvests. Production of rice, which is the main staple in the region, decreased by respectively 29%, 9%, 13% and 10% in Cambodia, India, Malaysia and Thailand.

In 1972Q3 and 1972Q4, real food commodity prices increased by respectively 1.4% and 18.3%, while real cereal prices rose by respectively 9.7% and 16.5% in both quarters. Over the same period, real oil prices increased by less than 2%, while other commodity prices (e.g. metals) remained stable. Overall, annual global cereal production declined by 1.6% in 1972, compared to a rise of respectively 9.2% and 7.4% in 1971 and 1973. There were no other major events or macroeconomic conditions that could explain the rise in food commodity prices (note:

[3]D. Guha-Sapir, R. Below, Ph. Hoyois - EM-DAT: The CRED/OFDA International Disaster Database – www.emdat.be – Université Catholique de Louvain – Brussels – Belgium.

the first OPEC crisis was one year later in November 1973). Since both food market events occurred during the summer of 1972, we allocate the shock to 1972Q3.

Relevant articles

The Wheat Shortage Tightens

The Financial Times, p. 18. John Edwards (1972, October 2).

"A **sudden upsurge in world grain prices**, fuelled by Russia's recent huge purchases of wheat, is now having an impact on Britain.

The **most dramatic event in the world wheat market since the second world war – massive grain purchases by Russia on an unprecedented scale** – are now starting to affect Britain directly. **Last week the steep rise in world wheat prices was accelerated by the U.S. decision to suspend the subsidies normally paid on exports**. Imported wheat prices in the London Baltic market are now some £16 a ton higher than in July and have gained £10 in the past month alone.

Not surprisingly the prices of other grains have been pushed up steeply as well, so that while a record British grain harvest was being forecast last week, big rises in the prices of food in Britain were also being predicted as inevitable. Grain prices do, of course, affect a much wider range of foodstuffs than simply flour-based products like bread, biscuits and cakes.

Considerable shock

The prices of meat – especially poultry, milk, butter, cheese and eggs, are all more or less directly influenced by any sharp rise in the cost of the grain used for animal feeding stuffs. And malting barley is a key ingredient used in brewing beer.

The sudden upsurge in world grain prices during the past two months has come as a considerable shock, since only a few months ago there were reports of heavy surplus stocks building up and the likelihood of depressed world market prices as suppliers fought for the available sales outlets. But the intervention of Russia as a buyer on a really huge scale has changed the picture completely. **It is now known** – and even admitted by the Russians themselves) that **the Soviet Union**

suffered a disastrous grain crop setback this year following weather conditions that were described as the worst for a century by the Soviet Minister of Agriculture. Apparently in the main growing areas it was too dry when rain was needed, and too wet when sunshine was wanted, and although the Russians are doing their utmost to salvage the harvest it is obvious they cannot achieve much at this late stage."

The Russian Wheat Deal Hindsight vs Foresight

Federal Reserve Bank of St. Louis Review no. October (1973). Clifton B. Luttrell.

"**In July and August 1972, the United States sold to the Soviet Union about 440 million bushels of wheat for approximately $700 million**, more than the total U.S. commercial wheat exports for the year beginning in July 1971. The sales were equivalent to 30 percent of average annual U.S. wheat production during the previous five years and more than 80 percent of the wheat used for domestic food during that period. The sales involved a series of subsidized transactions following an agreement whereby the U.S. Government made available credit of $750 million to Russia for the purchase of grains over a three-year period. **Previously, the Russians had purchased only a relatively small quantity of U.S. farm products.**"

The State of Food and Agriculture 1973

Food and Agriculture Organisation, (1973). Rome: FAO.

"World food production declined in 1972 for the first time since the second world war. Production per person fell by 3 percent (in the Far East region by 6 percent). **Drought was the principal cause.** [...] The dramatic change in the world wheat situation in 1972 was caused mainly by a **poor harvest in the U.S.S.R. which led to massive purchases on the world market**. World wheat production was only slightly below the record 1971 level but this coincided with a poor rice harvest." P. xii

"The most disquieting situation was in the **Far East, where both agricultural and food production, severely affected by the failure of the monsoon, fell by 3 percent.** This followed only a slight increase in

1971. Per caput food production fell by 6 percent in 1972, and was 8 percent below the peak level of 1970. **In nearly all countries of the region food production per caput dropped** for the second consecutive year and rising prices of scarce staple foods severely affected low-income groups. Cereal production was even more disappointing in 1972 than in 1971. Harvests of rice, the main staple, cultivated mostly in rain fed areas, fell by 4 percent. **All important rice-producing countries of the region had poor or very poor harvests**. **Serious food shortages developed in some parts of the region.**" P.2.

Available at: http://www.fao.org/docrep/017/e1900e/e1900e.pdf

1975Q2 - Significant improved estimate of world grain production

Type Favorable food commodity market shock

Food commodity market event In April 1975 the United States Department of Agriculture (USDA) predicted a large increase in world grain production, indicating some easing of the tight supply-demand balance of the previous two years. Furthermore, in May 1975, the USDA increased its US wheat production estimate for 1975 because of favorable May field conditions. A record wheat harvest was expected. In retrospect, US wheat production increased by 19.4% relative to the previous year, and global cereal production by 6.9%.

Real food commodity prices collapsed by 10.9% in 1975Q2, and real cereal prices by 9.8%. At the same time, real oil prices increased. There were no other events that can explain such a strong decline in food commodity prices in 1975Q2. Notice that real food commodity prices also declined considerably in the previous quarter, i.e. by 26.4% in 1975Q1. However, according to the NBER, the US economy was still in a recession in 1975Q1, while also global industrial production was declining in 1975Q1. The fall in food commodity prices in 1975Q1 could thus also (at least partly) have been caused by the decline in economic activity. Since the US and global recession ended in March 1975, and the USDA forecasts were updated in April and May (the previous forecast was in December 1974), we allocate the food commodity market shock to 1975Q2. If some of the rise in wheat production was already anticipated in the first quarter, this is not captured by the narrative dummy.[4]

Relevant articles

Bigger World Grain Crop Likely

The Financial Times, p. 33 (1975, April 18).

"**World production of grains in 1975-1976 is expected to increase by almost 88m. tonnes over 1974 output**, according to the U.S. Department of Agricultures Foreign Agricultural Service, reports Reuter. **This**

[4]In fact, if we allocate the shock to 1975Q1, the macroeconomic consequences are marginally stronger.

indicates some easing of the tight supply-demand balance of the past two years, the FAS says. It estimates world grain production in 1975-76 at just under 1bn. tonnes, assuming normal weather."

Harvest Probably Will Post Record

Spokane Daily Chronicle, p. 5. (1975, May 10).

"The 1975 winter wheat crop is off to a generally good start and may produce a **record harvest of 1.62 billion bushels**, grain needed to replenish reserves now expected to be at a 27-year low by summer. Winter wheat makes up about three-fourths of total U.S. wheat output. The estimate, based on May field conditions, was announced yesterday by the Agriculture Department. USDA has projected a spring wheat crop of 525 million bushels, assuming normal yields and expected plantings. Thus, including the winter crop's estimate, a 1975 record wheat harvest of more than 2.1 billion bushels is in the offing. The May estimate for winter wheat was one percent large than the 1.6 billion bushels USDA initially forecast last Dec. 23."

Available at: https://news.google.com/newspapers?nid=1338&dat=197505-10&id=FJJYAAAAIBAJ&sjid=i_gDAAAAIBAJ&pg=2138,3123598&hl=en

1975Q4 - Optimistic rise forecast because of very favorable monsoon season

Type Favorable food commodity market shock

Food commodity market event In September 1975, there were expectations of a record rice crop because of a favorable monsoon season[5]. As a consequence, rice prices started to decrease from October 1975 onwards, which is the start of the harvesting season. We allocate the shock to that quarter. The overall global food commodity price index declined by 4.7% in 1975Q4, and by another 6.0% in 1976Q1. Real cereal prices even fell by 19% over these two consecutive quarters. In 1975Q4, real oil prices moved in the opposite direction (3.8% increase), and there were no other important events that can explain the decline in food commodity prices. In fact, the global economy was in a good shape. Ex post, 1975 proved indeed to be a very favorable rice year for India, Japan and Thailand, with an acceleration of production yields relatively to 1974 by respectively 23%, 7% and 14%.

Relevant articles

India expects record grain harvest

The Financial Times, p. 39. K. Sharma (1975, September 23).

"Mr. Jagjivan Ram, India's Agriculture Minister, said today that **the 'kharif' (summer) crop this year was expected to be a record 70m. tonnes of food-grains**, which is at least 1m. tonnes more than the previous peak.

An unofficial announcement said later that the annual **food grain crop was expected to be more than 114m. tonnes, also the highest ever**. **The bumper harvests are due to timely and abundant monsoon rains all over the country** for the first time in three years as well as the ready availability of inputs like fertilizers.

The hopes of a good yield **have led to an unseasonal fall in food grain prices** and this has helped to keep inflationary forces under control with the

[5]In India and Thailand for example most rain falls usually in the summer months, while the harvesting season of the main rice crop is in the last quarter of the year.

result that the wholesale index is now 3.6 per cent. Less than at the same time last year."

The State of Food and Agriculture 1975

Food and Agriculture Organisation, (1975). Rome: FAO.

"World production of rice (paddy) is likely to be about 342 million tons, or some 6% higher than in 1974, largely **reflecting the adequacy and timeliness of the monsoon rains in Asia**, where the bulk of the world paddy crop is harvested toward the end of the year. **Record crops were expected in China, India and a number of other countries of the Far East, as well as outside the region.**"

Available at: http://www.fao.org/docrep/017/h3100e/h3100e.pdf

1977Q3 - Predictions of record US & Soviet harvests

Type Favorable food commodity market shock

Food commodity market event Several favorable and/or increased food production forecasts were published throughout July and August: predictions of record US corn crops (July 1977), increased forecasts of world wheat and feed grains production (July 1977), news on record Soviet wheat harvest (August 1977), and predictions of record US soybeans crops (August 1977). As a consequence of this favorable news, real food commodity prices decreased by more than 20% in 1977Q3. There were no other events that can explain the decline in food commodity prices. Real oil prices, for example, decreased by only 1%.

Relevant articles

Largest U.S. corn crop ever this fall predicted

Bangor Daily News, p. 25. Copy N.Y. Times (1977, July 13).

"Despite a critical shortage of soil moisture in many parts of the country, **the Agriculture Department predicted Tuesday that American farmers would harvest the largest corn crop in history this fall.**

If the department's Crop Reporting Board forecast should be correct, **grain prices would continue to decline.** This would bring more economic unhappiness to farmers but offer consumer the hope of stabilized meat and poultry pries in the coming 12 months.

In its first appraisal of the 1977 corn crop, the Agriculture Department predicted a total yield of 3.6 billion bushels, 2 per cent larger than last year's record-setter."

Available at: https://news.google.com/newspapers?nid=2457&dat=19770713-&id=vbUzAAAAIBAJ&sjid=GSMIAAAAIBAJ&pg=2531,4431684&hl=en

Big rise in grain crop forecasts

The Financial Times, p.25. Commodities Staff (1977, July 20).

"**The U.S. Department of Agriculture has increased its forecasts of world wheat and feed grains production this year by almost 10m.**

tonnes. For feed grains **the Department estimates world output in the 1977-78 season at 691.5m. tonnes, compared with its prediction of only 684.3m. tonnes made in the middle of last month.** Much of the increase 3.6m. tonnes – is attributed to the U.S. and **the Department has also raised its estimates of Soviet output from 95m. to 100m. tonnes.**"

Soviet wheat peak

Lawrence Journal-World, p. 3. Turnbull R. (1977, August 3).

"If the Soviet Union this year harvests a wheat crop the size now estimated by the U.S. Department of Agriculture, the total yield would be about 4 billion bushels. This would make it **the largest crop in history for any nation.** It would be just about double the 1977 U.S. crop now estimated at 2,044 million bushels, the third largest in U.S. history."
Available at: https://news.google.com/newspapers?nid=2199&dat=19770803-&id=_EwyAAAAIBAJ&sjid=BOYFAAAAIBAJ&pg=3543,437000&hl=nl

Soybean Masses Seen

Observer-Reporter, p. D4. Kendall D. (1977, August 11).

"A bumper U.S. soybean crop this year will mean a **hefty increase in the world's supply of high protein meal and vegetable oil** in 1978, an Agriculture Department analyst said recently. 'The cliff-hanger drama caused by tight oilseed meal supplies appears headed for an anticlimactic end this fall if USDA forecasts of bumper 1977 oilseed crops prove correct,' Alan E. Holz of USDA's Foreign Agricultural Service said in a report."
Available at: https://news.google.com/newspapers?nid=2519&dat=19770811-&id=CeJdAAAAIBAJ&sjid=EV8NAAAAIBAJ&pg=1831,1735859&hl=en

1977Q4 - Record grain harvest did not materialize

Type Unfavorable food commodity market shock

Food commodity market event Despite expectations of record harvests in the previous quarter (see above), global grain production turned out to be below trend in 1977 as a result of unfavorable weather conditions in the major producing areas. In November 1977, the *Financial Times* announced that the Soviet crop would be roughly 10% below the latest estimate predicted by the USDA. In addition, the International Wheat Council lowered its estimate of world wheat output by 2%-3%. In retrospect, Soviet wheat production decreased 5% compared to the previous year. Chinese wheat production declined 18% and in the US wheat production shrunk 5%. It is clear that this came as an unexpected shock in 1977Q4, given the extremely optimistic forecasts only one quarter earlier. In 1977Q4 real food prices suddenly increased by 8.1%, and another 7.5% in 1978Q1. At the same time, the real oil price decreased in both quarters, and there were no other events that can explain the shift in food commodity prices.

Relevant articles

Soviet grain crop lower than worst forecasts

The Financial Times, p. 27. John Edwards, (1977, November 3).

"The announcement by Mr. Leonid Brezhnev, Soviet President, in his speech to mark the 60th anniversary of the Bolshevik revolution, that **the Soviet grain crop would fall to a lowly 194m. tonnes this year – well below the most pessimistic trade forecasts – brought a flurry of interest in the grain and oilseed markets yesterday**.

European grain prices were marked up in anticipation of a possible upsurge in Chicago, but reaction in the U.S. markets was somewhat cautious in early trading, with wheat and maize showing only limited increases. Soyabean prices, however, did move up sharply, continuing the recent trend towards higher levels.

At 194m. tonnes the Soviet crop is some 30m. tonnes short of last year's record out turn of nearly 224m. tonnes and 19m. tonnes below the official target. **It is also below the latest estimate of 215m. tonnes predicted by the U.S. department of Agriculture** and recent trade rumours that the crop could be as low as 200m. tonnes.

[...]

The international Wheat Council yesterday cut between 5m. and 10m. tonnes off its estimate of world wheat output to a range of 385m.-390m. tonnes. This compares with its estimate last month of 390m.-400m. tonnes and the record crop of 417.4m. tonnes in 1976."

The State of Food and Agriculture 1977

Food and Agriculture Organisation, (1977). Rome: FAO.

"Wheat production in 1977 was estimated by FAO at 385 million tons, and below trend. **The world crop is less than earlier expectations, as a result of unfavourable weather in major producing areas.** Smaller harvests than in 1976 are probable in all major producers, except India and Pakistan, which had very good crops. The largest reductions are expected in Argentina, Australia, Canada, China, the United States and the U.S.S.R.. In Argentina the crop, sown on a reduced area (-20%) and affected by drought, may be more than a third less than in 1976. In Canada, smaller plantings and bad weather have led to a crop which is probably some 27% or more below last year is record. A reduction in the area planted to wheat in the United States contributed to a drop in production of more than 3 million tons (-5.5%). The U.S.S.R. wheat crop is provisionally estimated at 90 million tons, 9% down on last year's large crop, and the Australian crop is likely to be 2.5 million tons (21%) lower than in 1976." P.1-11.

Available at: http://www.fao.org/docrep/017/ap657e/ap657e.pdf

1984Q3 - Favorable weather in North America and exceptionally good cereal harvest in Western Europe

Type Favorable food commodity market shock

Food commodity market event In July 1984, the USDA improved its June estimate for US wheat production, and predicted record grain production worldwide. Much of this increase was a consequence of the North American recovery from the sharp decline of 1983, reflecting both increased plantings and favorable weather. Western Europe also had exceptionally good harvests of cereals. In retrospect, US maize production rose considerably, i.e. 84% in 1984. Furthermore, wheat production increased in China, India and France by respectively 8%, 33% and 6%. Overall, global cereal production increased by 11.4% in 1984, which was the largest annual rise since the 1960s. We allocate the shock to 1984Q3 given the timing of the favorable forecasts and the immediate reflection in large price decreases in that quarter (-10.4% fall in real food commodity prices). Real oil prices decreased much less (-3.5%), and there were no other events that could explain such a decrease in food commodity prices.

Relevant articles

World grain harvest forecast to rise 8%

The Financial Times, p.40. (1984, July 12).

"**The world is well on the way to enjoying a bumper grain harvest this year**, according to the latest estimates by the U.S. Department of Agriculture based on conditions as at July 1. The department forecast world grain output (including rice) would total over 1,598m tonnes, 8 per cent above last year's depressed level of 1,483m tonnes. The biggest recovery is in coarse grains, where output is expected to jump to 793.6m tonnes against 688.6m in 1983-84. Wheat production is put at 496.3m tonnes (489.5m tonnes) and rice at 452.9m tonnes (448.8m tonnes). **U.S. grain production is expected to recover sharply from last season's drought.**"

USDA predicts huge 1984 wheat harvest: More than 2 billion bushels are likely

The Daily Reporter, p.3 (1984, July 12).

"Farmers are rapidly harvesting what new government figures show to be the third-largest winter wheat crop in U.S. history, **a huge output that will add to the nation's stockpile and put further downward pressure on grain prices.**

The Agriculture Department said Tuesday that prospects now indicate a harvest of 2.02 billion bushels. Added to spring wheat production, that will be more than enough to meet demands until the 1985 harvest is ready.

World grain production overall is expected to reach a record level this year, up 8 percent from last season. That will make it even more difficult for U.S. wheat in the international market.

Based on July 1 surveys, the new forecast puts U.S. winter wheat output 1.5 percent above last year's harvest of 1.99 billion bushels. **It also would be 2.5 percent above the 1.98 billion bushels indicated in June.**"
Available at: https://news.google.com/newspapers?nid=1907&dat=19840712-&id=pF8rAAAAIBAJ&sjid=9dgEAAAAIBAJ&pg=2713,850223&hl=en

The State of Food and Agriculture 1984

Food and Agriculture Organisation, (1985). Rome: FAO.

"**Estimates for 1984 indicate that world food and agricultural production was more than 4% higher than in 1983,** thus recovering from the setback suffered in 1983 (Table 1-2). The 4.5% increase in agricultural production is the highest registered since the 4.8% increase of 1973. World crop production is expected to increase by more than 6%, one of the best results achieved in the last decade. However, livestock production will increase by less than 2% because of less favourable conditions and incentives for milk production, and cyclical and demand factors affecting meat production.

[...]

In developed countries food and agricultural production has gone up between 5% and 5.5%. Much of this increase is a consequence of the North American recovery from the sharp decline of 1983, reflecting both increased plantings and **favourable weather**. **Western Europe also**

had exceptionally good harvests of cereals, and some progress was made in the USSR and Eastern Europe. Crop production in the South-west Pacific fell back a little from the very good results achieved in 1983. Cereal production, including rice in paddy equivalent, is estimated to have achieved a new record of at least 1 780 million tons in 1984, an increase of 138 million tons, or more than 8% (Table 1-3). Production of oil-bearing crops is expected to have increased by nearly 10%, but those of sugar and pulses by only very small amounts. Among non-food crops, cotton lint production should have gone up by 20% and tea by nearly 7%. Tobacco output is estimated to have been between 4% and 5% higher than in 1983, while coffee production is likely to have declined by more than 3%." P.8-9.
Available at: http://www.fao.org/docrep/017/ap664e/ap664e.pdf

1988Q4 - Expectations of global surge in wheat production

Type Favorable food commodity market shock

Food commodity market event In December 1988, it was announced by the International Wheat Council that worldwide wheat production was expected to rise considerably in 1989, amongst others because of a reduction in the requirement for US set-aside of arable land, from 27.5% to only 10% of the wheat acreage in the next year, which was a farm policy response to the 1988 drought in the US (The Disaster Relief Act of 1988). In response to drought-shortened crop inventories, the 1989 version of the farm bill was expected to encourage larger crop planting. Wheat production in 1989 increased indeed in all large wheat producing countries (China 6%; France 10%; India 17%; US 12%; USSR 11%). In 1988Q4 there was a decrease in real food prices by 4.5%, and food prices continued to decrease until 1989Q3. Ex post, annual global cereal production increased by more than 10% in 1989. We allocate the shock to 1988Q4, because it was the first quarter in which favorable crop forecasts were reflected in prices, while the sources that we have found only reported about the forecasts in December. In 1988Q4 there was also a relatively large decline in real oil prices by 9.7%, which is slightly less than one standard deviation from the sample mean. However, oil prices quickly rebounded afterwards (an increase of more than 25% in 1989Q1), whereas food prices continued to decline. In addition, other non-food commodity (producer) prices increased in both quarters. This indicates that the decrease in food prices is the result of a structural increase in food supply.

Relevant articles

Wheat crop record possible next year

The Financial Times, p 32. Bridget Bloom (1988, December 15).

"**Wheat output could be substantially higher in 1989** than it has been this year, possibly even exceeding the record 537m tonnes harvest of 1986, the International Wheat Council believes.

In its latest market report the IWC stresses that this year's North American drought underlines the need for extreme caution in forecasting the level of wheat production next year.

But it believes that, given favourable weather throughout the northern hemisphere growing season, n**ext year's output could rise to nearly 550m tonnes**, compared with 500m tonnes this year. One major reason for the increase will be the **reduction in the requirement for US set-aside of arable land, from 27.5 per cent to only 10 per cent of the wheat acreage next year.**"

World's wheat production, consumption projected to rise

The Telegraph, p. D-2. Associated Press (1988, December 4).

"Government and private analysts say **the outlook for world wheat markets looks strong next year** and offers U.S. producers a good opportunity to make gains. **More land worldwide is expected to be devoted to wheat production in 1989 because of strong crop prices and government incentives**, including easing of land-idling restrictions for farmers in the United States, said Bruce R. Weber, an economist with the Agricultural Stabilization and Conservation Service."

Available at: https://news.google.com/newspapers?nid=2209&dat=19881204-&id=SRJgAAAAIBAJ&sjid=LJQMAAAAIBAJ&pg=6755,911672&hl=en

1995Q3 - Significant downward revised world cereal estimates

Type Unfavorable food commodity market shock

Food commodity market event In 1995Q3, there were large downward revisions of 1995 world cereal production. This was especially the case for wheat and coarse grains production in the US (due to poor weather conditions, predominantly hot and dry weather during early September) and the Commonwealth of Independent States, and for wheat production in Argentina and China. In Central America, a below-normal coarse grain crop was in prospect in Mexico due to a combination of reduced plantings and dry weather in parts. In retrospect, wheat production declined in the US and Russia by 6%, and in Argentina by 16%. Mexican maize production stagnated in 1995, but US maize production decreased by 26%. Annual global production of the four major staples ultimately declined by 2.6% in 1995. We allocate the shock to 1995Q3 because bad weather conditions and the news about smaller crops were reported in that quarter, and it affected real food commodity prices mainly contemporaneously (an increase of 6.6%). Also real cereal prices increased by 13.9% in 1995Q3. In contrast, real oil prices moved in the opposite direction in that quarter (-8.1%), and there were no other events that could have had a strong impact on food commodity prices.

Relevant articles

Lower grain forecasts fuel concern over supply

The Financial Times, p. 25. James Harding, (1995, September 22).

"**Bad weather has hit cereals production, depressing forecasts for next year's world grain output even lower than previously expected. The outlook is underpinning high prices** but fueling food security concerns, the International Grains Council reported yesterday. **The ICG revised down its monthly forecast for global wheat output in 1995-96 by 4m tonnes** to 529m tonnes, concluding that world stocks next year will fall to 93m tonnes, 11m below last year and the smallest for twenty years.

Global grain production, including both wheat and coarse grains, is expected to be 1.3bn tonnes and stocks are down to 186m tonnes, compared with 1,4bn tonnes and 284m tonnes three years ago.

Food security worries were reinforced by the Food and Agriculture Organisation, the UN food agency, which expects this year's cereals harvest to be 3.2 per cent lower than 1994. **The forecasts encouraged confidence among grain futures traders who expect tighter supply will lift prices even further.** One trader in London said '**Today we had both the FAO and the IGC cutting estimates of world stocks. In fact everywhere you look the news is bullish.**"

Food Outlook October 1995

Food and Agriculture Organisation, (1995). Rome: FAO.

"**The cereal supply/demand outlook for 1995/96 has tightened further.** Recent information on 1995 crops has forced **a new substantial reduction in the FAO's forecast for world 1995 cereal production** now put at 1 891 million tons, 58 million tons or 3 percent below the previous year. At this level, global output will be below expected consumption requirements for the third consecutive year. As a result, during 1995/96 global cereal stocks are forecast to fall by some 47 million tons, to 265 million tons, 3 million tons less than forecast last month. The ratio of cereal stocks to trend utilization in 1996/97 would be well below what FAO considers the minimum necessary to safeguard world food security. **Of particular concern is the low volume of wheat and coarse grains supplies held by the major exporters, which has already led to sharp increases in international prices for most types of cereals.**

[...]

FAO's latest forecast for global wheat production in 1995 is down 6 million tons from a month ago at 536 million tons, but still 10 million tons or 1.9 percent more than in 1994. In the northern hemisphere, where harvesting of the 1995 crop is virtually complete, **latest information on the outcome of the wheat harvest in China points to a slightly smaller crop than earlier expected.** In the United States, **the forecast**

for the 1995 aggregate wheat production has been reduced because of poor weather conditions for the end of spring wheat harvesting in the northern plains. In the CIS, findings of an FAO Crop Assessment Mission in August point to **lower cereal output than earlier anticipated**. In the southern hemisphere, in Argentina, one of the world's major wheat exporters, **the forecast for 1995 wheat output has been reduced significantly because of continuing dry conditions during the sowing season** which is expected to result in smaller plantings. However, prospects remain favourable for the developing crop in Australia.

[...]

Global coarse grains production in 1995 is now put at 807 million tons, **8 million tons less than last month's forecast** and 8 percent down from 1994. The latest revision is mostly due to **a further reduction in the estimates for production in the United States and the CIS, and also for the crops in Mexico and Sudan** which more than offset marginal upward revisions for Asia and Europe. In the United States, the outlook for the 1995 maize crop deteriorated due to predominantly hot and dry weather during early September. In Central America, a below-normal coarse grain crop is in prospect in Mexico due to a combination of reduced plantings and dry weather in parts. In the CIS, **the latest information points to smaller coarse grains crops than earlier projected**. In the southern hemisphere, sowing of the 1996 coarse grain crops has already begun in northern parts of South America, while in the south, land preparation is well underway. In Australia, as for wheat, conditions remain favourable for the **developing** winter coarse grains crop."

Available at: http://www.fao.org/docrep/004/v9880e/v9880e01.htm#xtocid54119

1996Q3 - Expectations of excellent global cereal harvest

Type Favorable food commodity market shock

Food commodity market event Already in June 1996, the FAO issued a provisional favorable forecast for world 1996 cereal output (6.5% up from the previous year). The largest increase was expected in coarse grains output, mostly in the developed countries. Additionally, wheat output was forecast to increase significantly, and rice production to rise marginally. Subsequently, in September 1996, the International Grains Council increased its forecast (compared to a month earlier) for 1996-97 global wheat production in response to a confirmation of favorable harvests in the Northern Hemisphere and excellent prospects in the Southern Hemisphere. We allocate the shock to 1996Q3, because the news was only then reflected in real food commodity prices (-4.5% in 1996Q3), while prices continued to decline in 1996Q4 (-7.9%). In 1996Q3, real oil prices increased by 2.8% (9.4% in 1996Q4), and there were no other major events that could have contracted food commodity prices. In retrospect, global cereal production increased by 7.8%.

Relevant articles

Food Outlook No.5/6 May/June 1996

Food and Agriculture Organisation, (1996). Rome: FAO.

"**Latest indications for the 1996 cereal crops continue to point to a recovery in world production** after the sharply reduced harvest last year, but the global supply/demand situation will remain tight. FAO's provisional forecast of world 1996 cereal output, based on current conditions of crops in the ground and assuming normal weather in the next few months, is 1 828 million tons (including milled rice), **6.5 percent up from 1995** and close to trend. The largest increase is expected in coarse grains output, mostly in the developed countries, while wheat output is also forecast to increase significantly and rice production could rise marginally. If current FAO forecasts for 1996 materialize, aggregate world cereal production would be large enough to meet expected consumption needs in 1996/97 and a small

replenishment of stocks could occur."
Available at: http://www.fao.org/docrep/004/w1690e/w1690e02.htm#I2

World Harvest Estimates Raised

The Financial Times, p. 33. Richard Mooney, (1996, September 27).

"**The International Grains Council has increased its forecast for 1996-97 wheat production in response to 'confirmation of favourable harvests in the Northern Hemisphere, and excellent prospects in Argentina and Australia'**.

These factors '**could lead to a significant rebuilding of wheat stocks' by the end of that season, the London-based IGC says in its latest monthly Grain Market Report, published yesterday**.

It now puts the 1996-97 **world wheat harvest at 571m tonnes, up from the 563m it was forecasting a month earlier** and the 542m tonnes produced in 1995-1996. With the consumption forecast being lifted by only 3m tonnes to 561m the stocks figure at the end of 1996-97 is now projected to reach 104m tonnes, 3m above last month's forecast and 10m more than at the end of 1995-96.

A smaller upward adjustment has been made to the coarse grains forecast, but as the consumption figure has been adjusted downwards **the stocks projection is raised quite significantly**. The IGC now sees 1996-97 world coarse grains output at 869m tonnes, **up 3m from the end-August estimate**.

2002Q3 - Significant downward revised global cereal estimates

Type Unfavorable food commodity market shock

Food commodity market event The FAO's July forecast pointed to a global cereal output of 1 878 million tonnes (including rice in milled equivalent) in 2002, considerably less than the previous forecast in May. It would be the smallest wheat crop since 1995. The downward revision was mostly a result of a deterioration of production prospects for several of the major wheat crops around the globe because of adverse weather in the northern hemisphere or for planting in the southern hemisphere. The forecast for global coarse grain output was also revised downwards since the last report mainly because of dry weather conditions in the Russian Federation. In September, the Australian Bureau of Agricultural and Resource Economics announced that drought would slash the country's winter grain production. Australia is one of the big five wheat exporters. In retrospect, US wheat production decreased by 18% in 2002 and Australian wheat production by 60%. The downward revision resulted in an increase in real food commodity prices in 2002Q3 by 9.4%. Real oil prices only increased by 2.5%, and there were no other events that can explain the increase in food prices.

Relevant articles

Food Outlook No.3 July 2002

Food and Agriculture Organisation, (2002). Rome: FAO.

"**FAO's forecast of global cereal output in 2002 has been revised downward to 1 878 million tones, considerably less than expectations in May**, and marginally below last year's level. On latest indications, output of wheat is forecast at 578 million tonnes, down 0.6 percent, while that of coarse grains would be down 0.3 percent at 903 million tones. Production of rice is seen to remain virtually unchanged from the previous year, at 397 million tonnes (milled basis).

[...]

The forecast for global wheat output in 2002 has been revised downward sharply since the previous report to 578 million tonnes, taking it 3 million tonnes below the previous year's level. This would be the

fifth successive year-on-year decline and the smallest crop since 1995. **Since the previous report in May, production prospects have been seen to deteriorate in virtually all regions, largely reflecting adverse dry weather for developing crops in some of the main producing areas in the northern hemisphere**, such as the case in northern China, several eastern European countries and the central plains of the United States, **or for planting in the southern hemisphere**, namely in Australia. In South America, financial problems in Argentina have been the main hindrance to planting there. Only for North Africa has the forecast been increased over the past two months, and mostly due to the benefit of some late season rains in Morocco following earlier dry conditions. The outlook remains unchanged for Central America where an above-average crop is expected.

The forecast for global coarse grain output in 2002 has also been revised downward since the last report, by 6 million tonnes, to 903 million tonnes, putting it 3 million tonnes below last year's harvest but still above the average of the past five years. **Most of the recent revision is confined to the Russian Federation, where the earlier good potential that followed an increase in the winter grain area has been eroded by dry weather conditions and a smaller crop than last year is now expected.** Reduced harvests expected in some eastern European countries and in EC also contribute to an overall decline foreseen in the European region. Smaller coarse grain crops this year, compared to last, are also expected in Africa, Central America, South America and Oceania. Latest information still points to larger outputs in 2002 in North America and Asia but much could still depend on weather conditions in the coming months for the summer maize crops which have only been recently planted in some parts."

Available at: http://www.fao.org/docrep/005/y7114e/y7114e01.htm

Drought to hit Australian grain output

The Financial Times, p. 30. Stephen Wyatt, (2002, September 11).

"Australia's official crop forecaster, the Australian Bureau of Agricultural and Resource Economics (Abare), **yesterday estimated that drought would slash the country's winter grain production by 15m tonnes** to 22m tonnes in 2002/03.

Wheat production in 2002/03 is forecast to decline to 13.5m tonnes, 44 per cent lower than last year's 24m tonne crop, making it the worst harvest since 1994/95, when only 9m tonnes were produced. Average wheat production in the last five years has been 22.1m tonnes.

Australia is one of the big five wheat exports, along with the US, EU, Canada and Argentina. Its exports are mainly used for bread and noodles in Asia and the Middle East. Of the winter grain crops, Australian barely production is forecast to decline by 39 per cent, from 7.5m tonnes last year to 4.6m tonnes in 2002/03, and canola production is forecast to fall 37 per cent, from 1.6m tonnes to about 1.0m tonnes."

2004Q3 - Significant improved forecast of world cereal output

Type Favorable food commodity market shock

Food commodity market event Favorable weather conditions triggered expectations of significant higher cereal production in Europe, China, Brazil and the US. In July 2004, the International Grains Council announced an expected rise in the global volume of coarse grain. In September 2004, the FAO's raised its forecast for world cereal output since the previous report in June. Annual global cereal production increased by more than 9%, while real food commodity prices decreased by 6.9% in 2004Q3, and by 4.0% in 2004Q4. Real cereal prices declined in both quarters by respectively 14.7% and 2.4%. Over the same period real oil prices moved in the opposite direction (increase of respectively 7.7% and 11.9%), and there were no other events that could have caused the decrease in food prices.

Relevant articles

Weather helps to separate wheat from rest of the field

The Financial Times, p. 44. Kevin Morrison, (2004, July 6).

"True to form, many British people have been complaining about this year's poor summer weather, but grain farmers welcome the clouds and rain.

Last year's heatwave reduced harvests in the UK and Europe, cut exports from the region and dramatically sliced stockpiles. It also left the grain market increasingly nervous as wheat prices hit six-year highs at the end of last year. this in turn forced up the price of a loaf of bread in the UK for the first time since the mid-1980s, and the prices of other flour-based foods including cake mixes and pizzas.

This year's more **favourable weather for wheat farmers has chopped more than a third off UK benchmark wheat prices since 2003's peaks**. The July wheat futures contract on Liffe was trading at £73.50 a tonne, while **the benchmark wheat futures on the Chicago Board of Trade sank to an eight-month low of $3.30 a tonne last week on the encouraging signs of a better harvest this year**.

About 90 per cent of the global wheat harvest is grown in the northern hemisphere. The remainder is grown in Australia and Argentina, which are also set for improved harvests. 'There looks like a better harvest all round this year,' said John Farthing, a grains broker at Refco in London. **The International Grains Council, the industry body, said last week global coarse grain, which includes wheat, corn and barley, output is expected to rise to 942m tonnes in 2004/05 from last season's weather-hit 907m, lifted by expectations of higher production in Europe, China, Brazil and the US.**

The ICG added 4m tonnes to the previous month's forecast as a sign that forecasters are more confident about this year's harvest. For wheat, the ICG raised output by 3m tonnes to 602m tonnes, sharply above the 554m tonnes produced last year."

Food Outlook No.3 September 2004

Food and Agriculture Organisation, (2004). Rome: FAO.

"Bumper 2004 cereal crop will avert another sharp stock drawdown.
With many of the 2004 cereal crops already gathered or nearing maturity, **latest information on 2004 production is firmer and confirms much larger harvests than earlier expected**. **FAO's forecast for world output has been raised to 1 985 million tonnes, about 29 million tonnes up from the previous forecast in June** and 101 million tonnes, or 5.3 percent, more than in 2003. This level of output would be marginally above the expected utilization in 2004/05, and thus avert the need for a further major drawdown in global cereal stocks after sharp declines in the past four years. **The bulk of the improvement compared to the June situation is accounted for by the major exporting countries**, whose share of total cereal stocks is now forecast to increase significantly from the previous year. Consequently, the buffer which these stocks represent against unexpected shocks in cereal supply or demand, has also improved. **Reflecting these latest developments, international cereal prices, especially for wheat and coarse grains, have weakened over the past three months** and the risk of any sharp upward movement in the next year has been considerably reduced.

Bigger wheat and coarse grain crops emerging in 2004.

The upward revision to the world cereal production forecast since the previous report results from significant increases to the forecasts for wheat and coarse grains, which more than offset a reduction for rice. **Larger than expected wheat harvests in Europe have added more than 10 million tonnes to the global wheat production forecast since June**, which now stands almost 9.5 percent up from last year's level. For coarse grains, the bulk of the increase comes from the new record maize crop forecast for the United States, contributing to a likely annual increase in the world output of over 3 percent. By contrast, FAO's forecast of global rice production in 2004 has been reduced over the past three months as crop prospects have deteriorated in several major producing countries. However, the current crop could still turn out to be some 4 percent up from 2003 and the largest since 1999."

Available at: http://www.fao.org/docrep/007/j2968e/j2968e01.htm

2010Q3 - Droughts in Russia and Eastern Europe

Type Unfavorable food commodity market shock

Food commodity market event The 2010 cereal output in the Republic of Moldova, Russian Federation, Kazakhstan and Ukraine was seriously affected by adverse weather conditions. Russian Federation, Kazakhstan and Ukraine (all three amongst the world's top-10 wheat exporters) suffered the worst heatwave and drought in more than a century, while the Republic of Moldova was struck by floods and hail storms. The EMDAT Database of international disasters lists a drought in Russia from April until August 2010. In the Russian Federation, the most severely affected by adverse conditions, the 2010 cereal crop was 33% smaller than the previous year. In Ukraine the wheat harvest decreased 19%. Accordingly, in July 2010, wheat prices saw the biggest one-month jump in more than three decades, i.e. a rise of nearly 50% since late June. In September, wheat prices were even 60% to 80% higher due to a decision by the Russian Federation to ban exports.

In 2010Q3 real food commodity prices increased by 8.6%, and in the subsequent quarter food commodity prices rose again by 13.5%. The rise in real cereal prices was respectively 11.9% and 16.4%. We allocate the shock to Q3, because it was then that the consequences of the bad weather became clear and prices started to increase substantially. In 2010Q3, real oil prices only increased by 2.8%. The Greek debt crisis was another important event in 2010, with the agreement on the First Economic Adjustment Programme for Greece in May 2010, but it is clear that if the Greek crisis has had an effect on food prices, it should have been a contractionary effect.

Relevant articles

Wheat prices rise at fastest rate since 1973 as drought hits Russia

The Financial Times, p. 1. Javiar Blas & Isabel Gorst, (2010, August 3).

"**Wheat prices have seen the biggest one-month jump in more than three decades on the back of a severe drought in Russia**, prompting warnings by the food industry of rising prices for flour-related products such as bread and biscuits. Food executives are also warning about surging prices for feeding and malting barley, which could push higher the retail cost of products from poultry to beer.

European wheat prices jumped 8 per cent yesterday to €211 a tonne, the highest in two years. **Wheat prices have risen nearly 50 per cent since late June. Crop failures and a price rally have revived memories of the 2007-08 global food crisis**, which saw the cost of agricultural commodities from corn to rice surge to record highs and food riots in countries from Haiti to Bangladesh.

'This is the fastest wheat price rally we have seen since 1972-73,' said Gary Sharkey, head of wheat procurement at UK-based Premier Foods, which makes the popular Hovis brand of bread.

'The industry will be unable to ignore a 50 per cent rise in wheat prices,' Mr Sharkey added, echoing a view widely shared by other food industry executives.

The rally comes as the worst heatwave and drought in more than a century continues to devastate grain crops in Russia, Ukraine and Kazakhstan.

The trio is among the world's top-10 wheat exporters and key suppliers to countries in North Africa and the Middle East – the largest importing region in the world. **Executives and traders fear the three countries could restrict their grain exports or even impose an export ban** in an effort to keep their local market well supplied and prices low.

Dmitry Rylko, the director of the Institute for Agricultural Market Studies in Russia, said **the market could not ignore the possibility that Moscow**

would introduce grain export controls as it did during the 2007-08 crisis. 'The scale of the drought is so severe we must be prepared for any option,' he said.

Wheat traders and analysts said Russia's wheat production could drop in 2010-11 to 45m-50m tonnes. Ukraine and Kazakhstan would also produce less. Heavy rains during the planting season are also expected to affect Canada's wheat output."

Crop Prospects and Food Situation No.3 September 2010

Food and Agriculture Organisation, (2010). Rome: FAO.

"**International prices of grain have surged since the beginning of July in response to drought-reduced crops in CIS exporting countries and a subsequent decision by the Russian Federation to ban exports**. In September wheat prices were 60 to 80 percent higher than at the beginning of the season in July. However, prices are still one-third below their peaks in 2008. In the same period, the price of maize increased by about 40 percent, while that of rice by only 7 percent.

FAO's latest forecast indicates a 2010 global cereal production of about 2 239 million tonnes, only 1 percent lower than last year and still the third largest crop on record. Reduced outputs of grains in CIS countries account for most of the decline."

Available at: http://www.fao.org/docrep/012/ak354e/ak354e00.pdf

2012Q3 - Droughts around the globe

Type Unfavorable food commodity market shock

Food commodity market event Due to droughts in Russia, Eastern Europe, Asia and the US, there was a significant decline in global cereal production. In retrospect, annual global cereal production contracted by 2.4%. In July, the USDA decreased its previous (June) estimate for US corn by 12% because of the worst Midwest drought in a quarter century. Heatwaves in southern Europe added serious concern about global food supplies later that month, as well as below-average rainfall in Australia. In August, there was news about a late monsoon affecting the rice harvest in Asia negatively. According to the International Food Policy Institute, production of food grains in the South Asia region was expected to decline by 12% compared to a year earlier. Also in August, the Russian grain harvest forecasts were reduced because of drought. In October 2012, wheat output in the Russian Federation was estimated some 30% down from 2011, in Ukraine, a decrease of about 33% was expected, while in Kazakhstan, output was reported to be just half of last year's good level. Wheat harvest indeed declined in 2012, respectively by 33%, 29%, 57% in Russia, Ukraine and Kazakhstan. The EMDAT Database of international disasters lists droughts in Ukraine (15/04/2012-31/07/2012), Russia (06/2012-09/2012) and the US (06/2012-12/2012).

We allocate the shock to 2012Q3 because this is the period when the severe scaling back of the expected harvests started, resulting in considerable price increases. Real food commodity prices increased by 7.9% in that quarter, whereas oil prices decreased by 1.6%. The same comment about the Greek debt crisis reported for the 2010Q3 shock applies for 2012Q3 (the Second Economic Adjustment Programme for Greece was approved in March 2012). There were no other events that could explain the rise in food commodity prices.

Relevant articles

Midwest drought slashes corn estimate, jolts market

Reuters. Charles Abbott, (12 July 2012).

"**The worst Midwest drought in a quarter century is doing more damage to U.S. crops than previously expected with the government on Wednesday slashing its estimate for what was supposed to be a record harvest.** The U.S. Department of Agriculture said the **corn crop will average just 146 bushels an acre, down 20 bushels from its June estimate and a much more dramatic drop than analysts had projected**. **The report initially reignited a near-record rally in grain prices** that could eventually hit consumer grocery bills in North America, although the impact could be more immediate for the world's poor if the drought persists. **The severe scaling back of the harvest has sent corn and soybean prices up by more than a third over the past month**, as extreme heat and dry conditions stunt growth in the world's largest grower and exporter."

Available at:

http://www.reuters.com/article/2012/07/12/us-usa-crops-idUSBRE86A0LL20120712

Europe Heat Wave Wilting Corn Adds to U.S. Drought

BloombergBusiness. Rudy Ruitenberg, (24 July 2012).

"**Heat waves in southern Europe are withering the corn crop and reducing yields in a region that accounts for 16 percent of global exports at a time when U.S. drought already drove prices to a record**.

Temperatures in a band running from eastern Italy across the Black Sea region into Ukraine reached 35 degrees Celsius (95 degrees Fahrenheit) or more this month, about 5 degrees above normal, U.S. government data show. Corn, now in the pollination phase that creates kernels, risks damage above 32 degrees, said Cedric Weber, the head of market analysis at Bourges, France-based Offre et Demande Agricole, which advises farmers on sales.

The heat wave in Europe is adding to concern about global food supplies as U.S. farmers face the worst drought since 1956, India delays sowing because of a late monsoon and Australian crops endure below-average rainfall. Soybeans and corn rose to all-time highs yesterday and wheat surged 42 percent since June 1. The United Nations says food prices will probably rebound after falling the most in three years in the second quarter."

Available at: http://www.bloomberg.com/news/articles/2012-07-23/europe-heat-wave-wilting-corn-adds-to-u-s-drought-commodities

Rice Harvest in India Set to Drop as Drought Curbs Sowing

BloombergBusiness. Prabhudatta Mishra, (16 August, 2012).

"Rice production in India, the world's second-biggest grower, is poised to slump from a record as the worst monsoon since 2009 reduces planting, potentially lowering exports and boosting global prices.

The monsoon-sown harvest may be between 5 million metric tons and 7 million tons below a record 91.5 million tons a year earlier, said P.K. Joshi, director for the South Asia region at the Washington-based International Food Policy Research Institute. **Production of food grains, including corn and lentils, may slide as much as 12 percent from 129.9 million tons a year earlier**, he said.

Rice has rallied 6.3 percent in Chicago since the end of May on prospects for a lower Indian crop and export curbs, adding to global food costs that the United Nations estimates jumped 6.2 percent in July. **Corn and soybeans have soared to records as the worst U.S. drought in half a century killed crops**. **Global rice production this year will be smaller than previously forecast**, according to the UN's Food & Agriculture Organization."

Available at: http://www.bloomberg.com/news/articles/2012-08-15/rice-harvest-in-india-set-to-decline-as-drought-curbs-planting

Russia harvest forecasts cut as drought hits crop in east

Reuters. Polina Devitt, (20 August 2012).

"**Two leading Russian agricultural analysts cut their forecasts for Russia's grain harvest on Monday** after harvest data from two drought-stricken eastern growing regions reduced the outlook for the overall crop.

SovEcon narrowed their grain forecast to 71-72.5 million metric tons (78.3-79.9 million tons) from a previous 70-74 million tonnes after the start of harvesting campaign in Urals and Siberia regions showed weak crop prospects. It has also cut wheat harvest forecast to 39-41 million tonnes from earlier 40.5-42.5 million tonnes.

The Institute for Agricultural Market Studies (IKAR) has cut its 2012 grain crop forecast to 73 million tonnes from a previously expected 75.4 million tonnes, its chief executive, Dmitry Rylko, said. It has not yet estimated wheat harvest. 'I see the possibility of further downgrading,' Rylko said."
Available at: http://www.reuters.com/article/2012/08/20/us-grain-russia-harvest-idUSBRE87J0BE20120820

Crop Prospects and Food Situation No.3 October 2012

Food and Agriculture Organisation, (2012). Rome: FAO.

"**FAO's latest forecast for world cereal production in 2012 has been revised downward slightly (0.4 percent) since the previous update in September**, to 2 286 million tonnes. The latest adjustment mostly reflects a smaller maize crop in central and southeastern parts of Europe, where yields are turning out lower than earlier expectations following prolonged dry conditions. At the current forecast level, world cereal production in 2012 would be 2.6 percent down from the previous year's record crop but close to the second largest in 2008. The overall decrease comprises a 5.2 percent reduction in wheat production, and a 2.3 percent reduction for coarse grains, while the global rice crop is seen to remain virtually unchanged. **Severe droughts this year in the United States and across a large part of Europe and into central Asia have been the main cause of the reduced wheat and coarse grains crops**.

[...]

FAO's latest forecast for global wheat production in 2012 stands at 663 million tonnes, 5.2 percent below last year's level, but close to the average of the past five years. This level is considerably below expectations earlier in the year, largely reflecting the impact of the severe drought that set-in across eastern Europe and central Asia, but also on account of downward revisions for the key southern hemisphere producing countries where weather and policy factors in some cases have reduced prospects for the 2012 crop yet to be harvested.

Most of the decline in global wheat production, compared to last year, reflects the negative effects of drought in the major producing CIS countries in Europe and Asia. Wheat output in the Russian Federation is estimated some 30 percent down from 2011, in Ukraine, latest information points to a decrease of about 33 percent, while in Kazakhstan, output is reported to be just half of last year's good level. In other parts of Europe, wheat output also declined, particularly in some central and south-eastern countries on the edge of the drought-affected zone. The aggregate output of the EU countries is estimated to be down by 2.6 percent. In the other Asian subregions, record crops have been gathered in the key producers in the Far East, namely, China and India, while in the Near East, results have been mixed: good crops were gathered in Afghanistan and the Islamic Republic of Iran but outputs were down elsewhere, reflecting dry conditions and/or the negative impact of civil disturbances. The 2012 harvest results were also mixed in North Africa, where production recovered in Algeria but was sharply reduced in Morocco due to dry conditions. In the United States, this year's wheat production is estimated to have increased by 13.4 percent to an above-average level of 61.7 million tonnes. In Canada, output is expected to be above average and almost 7 percent higher than in 2011.

In South America, the subregion's aggregate wheat production is forecast at about 21 million tonnes, 12 percent down from the previous year and below average. The expected reduction reflects a general decline in the area planted in response to changes in marketing policy and **due to dry weather at sowing time in June and July**. In Oceania, prospects for the wheat crop in Australia are mixed, reflecting varied winter rainfall and moisture

conditions: overall output is forecast down by about 24 percent from last year's record crop due to lower yields expected in some major producing areas affected by dry conditions."
Available at: http://www.fao.org/docrep/016/al992e/al992e00.pdf#page=30