TRADE AND AGRICULTURE DIRECTORATE
COMMITTEE FOR AGRICULTURE

Working Party on Agricultural Policies and Markets

FOOD PRICE FORMATION

Contact Person: Céline Giner (celine.giner@oecd.org)
Note by the Secretariat

This activity is mandated under the 2013-14 PWB of the CoAg under Output Area 3.2.1, Intermediate Output Result 4.3. In July 2014, a questionnaire was sent to OECD member countries and some non-member economies requesting information on their activities related to food price formation and more specifically on the role of institutions in providing food price formation data and analysis. The report provides an overview of issues associated with food price formation based on the answers to the questionnaire and a literature review. It also includes examples of instruments to regulate the food chain and ensure transparency that have been developed recently by the public and/or private sectors. This document was declassified by the Working Party on Agricultural Policies and Markets held in May 2015.

The statistical data for Israel are supplied by and under the responsibility of the relevant Israeli authorities. The use of such data by the OECD is without prejudice to the status of the Golan Heights, East Jerusalem and Israeli settlements in the West Bank under the terms of international law.
TABLE OF CONTENTS

FOOD PRICE FORMATION ........................................................................................................... 4

Introduction ................................................................................................................................. 4
The food sector: a highly sensitive sector .................................................................................. 5
High food prices: a global concern ............................................................................................ 5
Towards a better understanding of food price volatility .............................................................. 7
Strong concentration in the processing and retailing industries .................................................. 7
Lower share of food expenditure in total household expenditure and lower farm share in food prices .9
What about agricultural producers? .........................................................................................10
Understanding food price formation along the chain ...............................................................10
Evidence on price transmission ...............................................................................................10
The food chain is characterised by imperfect competition .......................................................14
Issues related to horizontal price transmission .......................................................................15
Issues related to vertical price transmission .............................................................................17
Is there a need for specific instruments and/or initiatives to regulate the food chain and ensure transparency? .................................................................................................................24
Availability of price data and transparency along the food chain .............................................24
Going further than the “traditional” monitoring of the food chain by competition authorities ...27
Conclusion: finding the most relevant approach .......................................................................31

REFERENCES ............................................................................................................................33

ANNEX 1: QUESTIONNAIRE ON FOOD PRICE FORMATION ....................................................38

ANNEX 2. ENTITIES THAT ARE MONITORING FOOD PRICE DATA ........................................40

Table

Table 1. Issues with respect to food prices that were raised in the responses to the OECD questionnaire .5
Table 2. Types of food price monitoring undertaken as reported in the OECD questionnaire ......26
Table 3. Initiatives to foster transparency along the food chain since the food crisis of 2007/08 ......29

Figures

Figure 1. Variations in PPI and CPI for selected countries........................................................11
Figure 2. The Food Dollar by industry groups in 2013 .............................................................13
Figure 3. Issues affecting price transmission along the food chain .........................................15

Boxes

Box 1. Market study on the Mexican Agri-Food Sector ............................................................9
Box 2. Projecting PPI and CPI in the context of the OECD-FAO Agricultural Outlook ..........11
Box 3. The AMIS Policy Database ..........................................................................................16
Box 4. Time series analysis and price transmission along the food chain .............................18
FOOD PRICE FORMATION

Introduction

1. The food crisis at the end of the last decade put food prices, food price volatility and food security at the top of the global policy agenda. Since then, there has been continued global concern about the level of food prices and how prices are formed and transmitted along the food chain. In 2013, the OECD Competition Committee organised a roundtable on competition issues in the food industry (OECD, 2014) which received an unprecedented number of countries’ contributions. Back to back to this roundtable, The Food Chain Analysis Network (FCAN) convened a meeting on competition along the food chain. The question of transparency along the chain was identified as top priority by stakeholders from government and the industry. In the scope of this report on Food Price Formation and as a follow up to the scoping paper [TAD/CA/APM/WP(2014)16], a questionnaire\(^1\) was sent to OECD member countries and other delegations with an aim to identify the most important issues with respect to food prices and initiatives that have been undertaken to solve those problems. The response rate was of 88%. Responses are available on the FCAN website.\(^2\)

2. The aim of this activity is to provide an overview of relevant work and initiatives addressing the issue of food price formation and transmission along the food chain through a review of the recent literature and the answers received to the questionnaire. The paper also presents public and private initiatives that have been undertaken to foster transparency in the food price formation process. Those initiatives are described based on countries’ experiences and on information concerning the private sector provided by the Food and Agriculture Committee of the Business and Industry Advisory Committee to the OECD (BIAC).

3. The paper is split into three sections. The first section provides background information on the food sector and identifies some of the major concerns of policy makers. These include the level and the volatility of food prices, the concentration of the processing and retailing industries, the decreasing farm share in food prices and the increasing vertical coordination as well as associated fears of declining terms of trade for farmers.

4. The second section focuses on the question of price transmission along the food chain. It reviews empirical and theoretical evidence, which suggests that imperfect competition and asymmetric price transmission are the rule rather than the exception. This section also underlines the need for greater transparency in food prices in order to inform actors along the chain and to be able to undertake advanced analysis of the functioning of the sector. The paper looks at specific issues related to horizontal food price transmission such as the transmission of volatility and the role of policies and to vertical food price transmission such as the impact of the functioning of the food chain and of the regulatory environment.

\(^{1}\) The questionnaire is presented in the Annex 1 of the document. It contains two surveys: one on food price formation activities and one on the existence of food price monitoring entities.

\(^{2}\) [http://www.oecd.org/site/agrfcn/](http://www.oecd.org/site/agrfcn/)
5. The paper underlines the fact that finding the “culprit” for asymmetries in the price transmission process is not straightforward. Market power is not solely responsible for imperfect competition. In fact it appears that the global functioning of the food chain, the regulatory environment and consumers search strategies also matter. The final section provides some insights into initiatives and instruments that have been reported by delegations to regulate the food chain and ensure transparency.

The food sector: a highly sensitive sector

6. The survey on food price formation activities asked delegations to identify their most important concerns with respect to food prices over the recent period. The answers to this question are summarised in Table 1. It appears that the level of food prices, their volatility, price transmission along the food chain and the terms of trade for farmers are at the centre of the political agenda. The next subsections will explore why food prices are that sensitive by examining the responses to the OECD survey as well as reviewing recent literature.

Table 1. Issues with respect to food prices that were raised in the responses to the OECD questionnaire

<table>
<thead>
<tr>
<th>Countries</th>
<th>Food price increase</th>
<th>Food price volatility</th>
<th>Price transmission along the chain</th>
<th>Declining terms of trade for farmers</th>
<th>Other</th>
</tr>
</thead>
<tbody>
<tr>
<td>Australia</td>
<td></td>
<td></td>
<td>+</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>Belgium</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Canada</td>
<td>+</td>
<td></td>
<td>+</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chile</td>
<td>+</td>
<td></td>
<td>+</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Czech Republic</td>
<td>+</td>
<td></td>
<td>+</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Denmark</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td></td>
<td>+</td>
</tr>
<tr>
<td>Estonia</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td></td>
<td>+</td>
</tr>
<tr>
<td>European Union</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td></td>
<td></td>
</tr>
<tr>
<td>France</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Indonesia</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Israel</td>
<td>+</td>
<td></td>
<td>+</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Italy</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Latvia</td>
<td></td>
<td></td>
<td>+</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lithuania</td>
<td>+</td>
<td></td>
<td>+</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Netherlands</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td></td>
<td></td>
</tr>
<tr>
<td>New Zealand</td>
<td>+</td>
<td></td>
<td>+</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Poland</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Portugal</td>
<td>+</td>
<td></td>
<td>+</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Slovenia</td>
<td>+</td>
<td></td>
<td>+</td>
<td></td>
<td></td>
</tr>
<tr>
<td>South Africa</td>
<td>+</td>
<td></td>
<td>+</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Switzerland</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Turkey</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td></td>
<td></td>
</tr>
<tr>
<td>United Kingdom</td>
<td>+</td>
<td></td>
<td>+</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Source: Responses to question II of the survey on Food Price Formation activities.*

High food prices: a global concern

7. The food sector around the world is under strong scrutiny especially since the food crisis in 2007-08 when food prices rocketed and food riots broke out in some countries. Thirteen countries with different profiles stressed in their answers to the questionnaire that they worry about high food prices. Canada and France are preoccupied with issues related to domestic food affordability and purchasing power especially for their poorer households.
8. The answer to the questionnaire from the South African government underlined the political nature of food prices. There is a food security element in monitoring prices and relationships along the food chain in a country with an important share of the population living below the poverty line. In that context, the Food Price Monitoring Program (FPMC) of the National Agricultural Marketing Council (NAMC) was established as a response to an increase in food prices in 2001-2002 that was coupled with a sharp depreciation of the Rand. These non-exhaustive examples show how food prices remain sensitive for policy makers in various countries.

9. Food price movements are scrutinised by consumers and governments, as food expenditures continue to represent an important share of household budgets, especially in developing countries. There is a long tradition of reporting food price inflation as measured by the food component of the Consumer Price Index (CPI). Food CPI data are usually prepared by national statistical agencies or subsidiary bodies in accordance with international statistical guidelines and recommendations set by the International Labor Organization (ILO) (2004). As an example, the Economic Research Service (ERS) of the United States department of Agriculture (USDA) publishes the Food Price Outlook on a monthly basis. For comparison purposes, food CPI measures are available on statistical platforms of various international organisations such as those of OECD and ILO. The FAO monitors food price inflation on a quarterly basis through the FAO Global Regional Food Consumer Price Indices that provide measures of food inflation at different levels: sub-regional, regional and global.

10. An historical comparison of regional food price inflation data is provided in the 2014 OECD-FAO Agricultural Outlook (OECD / FAO, 2014). This analysis shows that food price inflation is slowing across the world when compared to the immediate aftermath of the food crises but that important disparities exist between countries and regions. The response to the questionnaire of the Czech Republic underlines the fact that the level and trends of food price inflation are of concern to policy makers. Food price inflation has been faster than global inflation recently in the country. Its growth, exacerbated by several value added tax (VAT) increases, was also 5 percentage points higher than the EU average.

11. The European Transparency of Food Pricing Research Project (TRANSFOP) also looked at retail food price inflation and found that food price inflation for the European Union was more volatile than aggregate inflation between the mid-1990s to 2012 (Lloyd et al, 2013). Garcia-German et al. (2014) show that the transmission process between world agricultural commodity prices and final consumer price indices varies across European countries. This suggests differences in the structure and functioning of the food chains across the European Union. The FAO has recently published a paper on the measurement of the transmission of prices on international agricultural commodity markets to food consumer prices (Cachia, 2014). The paper shows regional differences in the timing and size of the impacts of price changes on global commodity markets to final food prices.

---

3 Food CPI calculations are usually the result of a sample survey. Monthly price changes of goods in a specific predefined basket are surveyed from a selection of retail outlets within specific representative areas.


6 VAT on the sale of food products was of 5% in 2005 and is of 15% nowadays.

7 www.transfop.eu
Towards a better understanding of food price volatility

12. Recent instabilities in agricultural markets have fostered research on food price volatility. The current report will not review factors that have led to high price volatility in the past few years as this has already been done in the context of a joint report for the G20 published in June 2011 by FAO, IFAD, IMF, OECD, UNCTAD, World Bank and the WTO (FAO et al., 2011). However it is important to note that agricultural commodity price volatility and its transmission along the food chain have been cited by several European countries (Belgium, Switzerland, France, Spain, Italy and Poland) and the European Commission as a source of concern regarding food prices.

13. To help understand food price volatility, the European commission is funding the FP7 project Ulysses (Understanding and coping with food markets volatility towards more Stable World and EU food Systems) for the period August 2012 to August 2015. Ulysses focuses on the causes and drivers of food price volatility. It looks among other things at the impact of market volatility in the food supply chain in the EU and in developing countries, analysing traditional and new instruments to manage price risks. It also evaluates impacts on households in the EU and developing countries.

Strong concentration in the processing and retailing industries

14. The food system has gone through profound transformations over the past 50 years. All levels of the food chain from agricultural input suppliers to retailers have been subject to industrialisation, consolidation and concentration. The Background Note to the OECD Policy Roundtable on Competition Issues in the Food Chain Industry (OECD, 2014) gathered information on the concentration and consolidation trends in the food processing and retailing industries in Europe and in the United States.

15. Concentration ratios in food processing are on average higher than in other manufacturing industries and this has been the case for a long time. For some product groups such as breakfast cereals, the four biggest companies already accounted for more than 75% of total sales in the mid-1990s. Concentration has been extremely strong and rapid in the United States for livestock processing: the four firm concentration ratio (CR4) for hogs was 64% in 2007 compared to 32% in 1985. Gaigné and Le Mener (2014) argue that the decline in real agricultural prices is one of the reasons of structural changes in the food processing industry with high productivity firms expanding at the expense of low productivity ones. Consolidation in the food processing thus led to higher productivity and bigger firms as underlined by Ollinger et al. (2005).

16. Concentration in the food retailing industry has mostly happened over the past 25 years (Swinnen and Vandeplas, 2010). Lower levels of retail concentration in specific countries such as Belgium for example are related to domestic regulations or barriers to entry in the retailing sectors. Concentration ratios at the national level might not reflect the situation in specific geographic areas. In the United States, CR4 in food retailing was 36% in 2005 (compared to 17% in 1992), however, in many metropolitan areas, CR4 reached more than 79% in 2006 (Sexton, 2013). The shares of sales held by the largest U.S. grocery retailers are likely to become more concentrated during the next few years due to the combined effects of

---

8 The following short to medium term factors were identified: growing demand for food in developing countries and biofuels, higher correlation between commodity prices and crude oil prices, uncertainties concerning stock levels, climatic events, policy measures, currency movements as well as hoarding or precipitated purchases by commercial and non-commercial actors responding to the nervousness of the markets or for speculative reasons. The role of financial speculation as a driver of agricultural commodity price increases and volatility is a subject of disagreement but the joint report for the G20 argues that well-functioning derivatives markets for agricultural commodities could play a significant role in reducing or smoothing price fluctuations and that there is need for greater transparency about transactions across futures markets through harmonization of rules across exchanges in order to avoid regulatory arbitrage.
two major trends. First, an anticipated wave of mergers and acquisitions will produce more concentrated food industry sales shares, following several major acquisitions in 2013 and 2014. Second, the continued steady growth of supercenters will also be a major factor contributing to rising sales shares among top U.S. grocers.

17. The study on the economic impact of modern retail on choice and innovation for food products (European Commission, 2014a) reviewed the most recent data concerning concentration of retailers and suppliers in the European Union. It appears that the share of modern retail in total edible grocery market in the European Union has increased from 44% on average in 2000 to 62% on average in 2011 with important disparities among member states. Whereas the annual growth in modern retail shops was 2% on average over the period 2000-2011, the growth rate was greater than 10% in many new member states. The total retailers floor-space increased by 44% over the last decade in the European Union. Concentration of suppliers increased on average in the European Union, with frozen ready-cooked meals, baby food, cereals and coffee showing the highest concentration levels. Private labels have gained in importance with an average 5% annual increase of the private label share in total purchases. The study concluded that there is no evidence that supplier concentration at the national level is an economic driver of choice for consumers but that there is some indication that high shares of private labels may be associated with less choice in retail outlets.

18. Australia in its questionnaire described the dominance of the two major retailing chains in the country, which now account for approximately 50 per cent of the fresh food market, and associated worries about abuse of market power with, in particular, a limited ability for farmers to influence the transactions. They cite the unilateral decision of major supermarkets to sell their private label milk for AUD 1 a litre as an illustration of the possible inequalities between actors along the chain. The Swiss questionnaire puts emphasis on retailers’ margins. It presents the entry of hard discounters in a duopolistic retailing sector as potentially beneficial for price competition. Japan presents quite a different picture to other OECD countries. Retail concentration remains low at the national level and never exceeds 50% at the local level but cases of the exploitation of bargaining position have been witnessed along the Japanese food chain where most of the actors (including farmers) are small in volume.

19. Swinnen and Vandeplas (2010) have shown that high concentration in the retail sector can be welfare enhancing as scale economies increase, transaction costs are reduced, research and development is promoted and some other agents along the chain can gain countervailing power. This is the point of view developed in the Canadian questionnaire based on their assessment of the restructuring taking place in the Canadian food retailing sector.

20. Some retailing chains such as Walmart, Metro and Carrefour have a dominant position worldwide and are developing rapidly their presence in emerging economies. Modern retail is also becoming an important feature of food supply chains in developing countries. The Mexican questionnaire and a study on concentration in Turkish food retailing by Koc et al. (2009) reflect concerns about imperfect price transmission along the chain due to the oligopolistic nature of the retailing stage in developing countries. Minten at al. (2010) looked at the emergence of western style retailers in India and its impact on prices. They found that prices charged by retailers for basic food items tend to be cheaper than in traditional shops –although packaged in different formats.

21. Baines (2014) suggests that more research should be undertaken on the role of agricultural input suppliers and of trading companies of agricultural commodities in the current food system. He performed an historical comparison of the differential profit (net earnings relative to the income of the 500 largest US companies) for four categories of actors engaged in the food chain: input suppliers (Agro-core), companies involved in the trading of agricultural commodities (Trader-core), in food processing (Food-core) and in retailing (Retail-core). He found that the profit dynamics of the Retail-core and of the Food-core have been
similar and their differential profit growth rates have levelled-off since the beginning of the 2000s. Over the same period, the Agro-core and the Trader-core have seen their differential profit increasing, strongly suggesting that firms in those groups have benefitted greatly from recent events in food markets and a stronger power of those firms along the food supply chain.

**Lower share of food expenditure in total household expenditure and lower farm share in food prices**

22. Those structural changes coupled with other factors such as a decrease in transportation costs and improved access to credit or distribution systems have led to reductions in the cost of food. The average share of food expenditures in total household expenditure has decreased over time. In 2012, this share was lower than 15% in most OECD countries. However there are huge disparities as underlined in Box 1 that describes the analysis currently undertaken by the Mexican Competition Authority on the Mexican agri-food chain.

---

**Box 1. Market study on the Mexican Agri-Food Sector**

In 2013, the Agri-food sector represented 7.2% of the Gross National Product (GDP) in Mexico. According to the National Survey for Household Income and Spending for 2012, performed by the Mexican National Institute for Statistics and Geography, Mexican households allocate 34% of their monthly spending on buying food. For families in rural communities it represents as much as 42% and for the lowest income families it represents as much as 52% of their spending. In light of the importance of the agri-food sector to the Mexican economy and to Mexican consumers, the Mexican Federal Economic Competition Commission (COFECE) has begun a study of the sector. The purpose of the study is to analyse if effective competition in the markets for agricultural products exists.

In the framework of this study, COFECE will carry out an analysis on the dynamics of the agro-food prices, and will assess the behavior of prices for a set of agro-food products. The main idea is to estimate as accurately as possible, given the availability of information, the potential effects of the conditions of competition and efficiency on food prices. The aim of the analysis is to identify prices pass-through, as well as the impact of internal shocks (supply and demand); external shocks (the international market and climate change) and regulation (tariffs) on price fluctuations. The analysis will focus on three topics: 1) the relationship between the national and international prices, 2) the relationship between producer prices and consumer prices and 3) the effect of symmetries (or asymmetries) of producer prices on consumer prices. The study should provide empirical evidence on how price transmission operates within Mexican agro-food supply chains, in order to assess potential markets failures possibly associated with efficiency and competition conditions.

The recommendations derived from this market study shall seek to correct potential inefficiencies, market failures and/or anticompetitive practices and are intended to be directed primarily for sector specific regulators, with the main objective of promoting policies that favor competition and efficiency in the sector. The recommendations should be available in August 2015.

*Source: COFECE*

---

23. On the demand side, consumers are willing to pay for differentiated and/or processed food products (Sexton (2013)). As a result, agricultural commodity prices represent only a small share of the prices that consumers actually pay for their food. In the United States, recent work by the Economic Research Service (ERS) of USDA (Canning, 2011) on retail food prices shows that many other industries also shape retail food prices such as food services and food processing, so that the farm share represented 16% of the food dollar in the US in 2008. Similar results have been found for the French (Boyer, 2014) and Canadian (Duckworth (2014), Kelly (2014)) food chains. Those studies are using input-output analysis methodologies and described details in Box 2.

24. The Danish questionnaire describes the declining farmers’ share in final food prices and the declining share of income spent on food by consumers as major impediments to price transmission:
consumers are not able to assess if the prices they pay for their food are related to the evolution of prices on commodity markets and can even less assess how retail food prices are constructed. They mostly worry about the level of final food prices.

**What about agricultural producers?**

25. Nine countries (Australia, Estonia, France, Indonesia, Italy, Netherlands, Poland, Portugal and Turkey) declared declining terms of trade for farmers as one of their main concerns regarding the functioning of the food chain. They stated that agricultural producers are pressured because of rising production costs (due to input costs or regulations) and low bargaining power with processors and retailers along the chain. The Netherlands mentioned the fact that the current functioning of the food chain makes it difficult to take into account the costs associated with sustainable or environmentally friendly practices in the prices paid to farmers.

26. Competition authorities are exploring possible cases of abuse of market power. The Polish questionnaire provides the example of a market study conducted by the Office of Competition and Consumer Protection in 2010 because of complaints from pig farmers about alleged anti-competitive practices by slaughterhouses. This market study did not find evidence of explicit collusion. The European Commission published a communication in 2014 (European Commission, 2014b) on the tackling of unfair trading practices (UTPs) in the business-to-business food supply chain which defined UTPs as practices that grossly deviate from good commercial conduct, are contrary to good faith and fair dealing and are unilaterally imposed by one trading partner on another. The Estonian questionnaire raises the difficulties in practice in proving problems of unfair trading practices.

27. Another important aspect worth noting is the increasing vertical coordination and contracting along the food chain. For agricultural producers, agricultural contracts might be used as income and/or price risk management tools (OECD, 2011). In the United States, whereas 90% of hogs were purchased on the spot market in the early 1990s, only 5 to 7% were still purchased without vertical integration in 2010, raising concerns about possible “captive supplies” (Sexton, 2013). Such contracting practices are often related to raising concerns about food safety, traceability and quality. In developing countries the development of private voluntary standard schemes is also linked to farmers’ production constraints caused by factor market imperfection (Swinnen and Maertens, 2007).

**Understanding food price formation along the chain**

**Evidence on price transmission**

28. To help understanding how changes in agricultural commodity prices are eventually transmitted to retail food prices and also to provide an idea of the price transmission process, Figures 1 shows the historical evolution of annual variations in the agricultural Producer Price Index (PPI) and in the food Consumer Price Index (CPI) for a selection of countries. The data have been compiled from the OECD-FAO Agricultural Outlook database (OECD / FAO, 2015). Statistical explanations and possibilities for future projections of PPI and CPI within the OECD-FAO Agricultural Outlook context are provided in Box 2.
29. Figures 1 highlight disparities in the price changes. Whereas both indices are moving in the same direction, retail food prices are more stable in all countries than agricultural commodity prices. Explanations for this are related to the fact that agricultural inputs represent only a small share of final food products’ prices and to the functioning of the food chain. Figure 1 also illustrates the issue of asymmetric price transmission along the food supply chain with downward price changes at the producer level only partially transmitted to final consumers. Those different patterns highlight the need to investigate further the extent and structural causes of imperfect food price transmission.

**Box 2. Projecting PPI and CPI in the context of the OECD-FAO Agricultural Outlook**

The OECD-FAO Agricultural Outlook database is updated on a yearly basis and contains information at both the producer and final food consumer levels across the world on the historical and projected 10-year evolution of prices, supply, demand and trade. It seems possible to complement the database with additional information that could be used for a better understanding of the price transmission mechanism along the food chain.

Indeed, it would seem relevant to compute projections of Producer Price Indices (PPI) and Consumer Price Indices (CPI) for all countries in the database. Obviously those indices would only be based on food products covered by the OECD / FAO Agricultural Outlook: Dairy, Sweeteners, Meats and Fisheries, Cereals and Fats. Following the United Nations COICOP\(^9\) definition, the harmonized food price index’s basket includes a wider range of goods\(^10\).

CPI measures are already available for OECD countries in the OECD-FAO Agricultural database for the different food product groups covered. It is possible to combine them into higher-level aggregates. The country level consumer food price index corresponds to the sum of the product level CPI weighted by the share of the value of annual use for


\(^10\) The harmonised basket includes: bread and cereal; meat; fish and seafood; milk, cheese and eggs; oils and fats; fruits; vegetables; sugar, jam, chocolate and confectionery, salt; other food products.
this product compared to the total value of annual food use:

\[ CPI = \sum_{i=1}^{n} CPI_i \times weight_i \]

Similarly it is possible to derive for every country in the database a Producer Price Index that corresponds to the same food product grouping but at the agricultural stage. The PPI measures the annual percent change in the prices paid to farmers for their commodities production. The aggregate PPI weights would be the share of a product value of production on total value of production.

Disparities in the variations of PPI and CPI measure will be related to the specificities of the functioning of the food chain. Those specificities can be captured by the consumer price equations within the AGLINK/COSIMO model. Those equations will be improved and tested on historical data to provide the best possible projections of food consumer prices.

30. Many governmental entities have stated in their answers to the OECD questionnaire that they have undertaken market studies to analyse issues related to UTPs or to the set-up of codes of good practices along the food chain. The dairy\textsuperscript{11} meat, cereals and fruits and vegetables sectors have been often been the centre of price transmission investigations. Input-output analysis is used to decompose food spending along the food chain in the United States, France and Canada. This methodology reflects the complexity of the food chain: A food product sold to consumers in a supermarket is often very different from the agricultural commodities that it is derived from. The former has gone through different steps: collecting, storage, processing, packaging and transportation. All those steps have concurred in adding value to the initial product.

31. ERS defines the food dollar as a $1 expenditure on domestically produced food by consumers and the farm share of the food dollar as proceeds of farm commodity sales tied to a food dollar expenditure and sold to non-farm establishments. After reporting the farm share of the food dollar for decades using a combination of annual and of census based data, ERS has started to publish recently a revised food dollar series that is based on input-output (IO) data published by the Bureau of Labour Statistics and by the Bureau of Economic analysis and updated annually. The methodology behind this food dollar series is described in details by Canning (2011).

32. There are three series that break out the food dollar for total food, food at-home and food away-from-home expenditures. The Marketing Bill Series divides each food dollar into two sub-components: the farm share and the marketing bill. In 2013, the farm share of the food dollar was of 17.4 cents. The Industry Group Series divides each food dollar into the value contribution of twelve industry groups that interact along the food supply chain. Figure 2 provides a break-out of the food dollar by industry groups in 2013. And finally, the Primary Factor Component Series divides each food dollar into the value contribution of 4 categories of assets involved in the food chain: salary and benefits, property income, output taxes and imports. The Marketing bill Series and the Industry Group Series provide information with regard to the transmission of prices along the food chain.

\textsuperscript{11} The dairy chain is particularly under scrutiny. The European Commission has recently set up a European Milk Market Observatory to overlook the evolution of dairy prices at different levels of the chain in the European Union and on world markets (http://ec.europa.eu/agriculture/milk-market-observatory/latest-statistics/prices-margins_en.htm). On the private sector side, the Global Dairy Trade (GDT) is an auction system that provides transparent price information on dairy products. Owned by Fonterra Cooperative Group, GDT operates separately and independently from its owners with audited separation protocols in place.
Figure 2. The Food Dollar by industry groups in 2013

Source: USDA ERS

33. A similar methodology is used by the French Food Sector Price and Margin Formation Observatory to derive its food euro measure (Observatoire de la Formation des Prix et des Marges des Produits Alimentaires, 2015). Over 100 euros spent on food-at-home by a French consumer in 2010, 19.3 euros is arising from agriculture, 13 euros from importation of food products, 10.1 euros from taxes and the rest corresponds to value created by transformation, retail trade and transportation. The euro farm share has been decreasing in France since 1995 from 23 euros to just above 19 euros.

34. This macroeconomic approach to food expenditures can be applied to specific group of products. The Food Dollar application of the ERS website\(^1\) allows for online queries on the food dollar series decomposition for specific food products. Kelly\ et\ al.\ (2014) use a supply chain IO analysis to derive Canadian farm share for 5 crop-based products and 7 livestock-based products. They found important differences in the levels of farm shares across food groups. The farm share of meat products ranged between 20 and 33% in 2010 whereas the farm shares of eggs and fruits and vegetables were significantly higher. The overall farm share for food-at-home is a bit below 20% in 2010.

35. The French Observatory conducts on a yearly basis an in-depth analysis of price formation and margin for specific food categories including pig meat, bovine meat, sheep meat, poultry, dairy, bread, pasta, fresh fruits and vegetables and fisheries. It decomposes the retail prices of food products in the value of agricultural raw commodities and value added to this raw material at the different levels of the chain. This value added corresponds to margins which are also decomposed using accounting data into the different costs covered and into net earnings. For example in 2014, the Observatory found that despite a 15% decrease in the price of soft wheat and a 2% decrease in the price of flour, the price of bread sold in bakery remained flat.

36. Food price decomposition derived from IO tables provides useful and relevant information to understand the importance of the different industries along the food chain in the price formation process. In France, this information is used to improve the dialogue between actors along the chain and to add transparency to the ongoing debate. However the cost of getting all the relevant information necessary to

perform such type of statistical analysis is high\textsuperscript{13} and it appears from a cost-effectiveness study commissioned by the Netherlands (Oosterkamp \textit{et al.}, 2013) that it cannot be afforded by all countries. Comparisons of food price decompositions by food categories and across countries could be undertaken when possible to understand why there might be differences in the perception of the functioning of the food chain around the world. The French Observatory compared for example in its 2014 report price formation along the French and German dairy chains.

\textbf{The food chain is characterised by imperfect competition}

37. The agro-food chain is characterised by high levels of concentration in the processing and retailing industries, strong product differentiation as well as vertical coordination. This means that information on prices and costs at different levels of the chain might not be widely available and that some actors might exert buying or selling power. In fact, imperfect competition is happening at all levels of the food chain, both vertically and horizontally (Sexton, 2013). There is an extensive literature looking at the existence of market power in the agro-food chain. Many studies are inconclusive; some show a degree of market power. In this specific report, the focus is on the price transmission process along the chain and on trying to understand the impact of imperfect competition on this process and if this impact is something policy makers should be addressing, if they are not already doing so.

38. Studying price transmission along the food chain concerns many inter-related fields of economic theory: industrial economics, international economics, macroeconomics and public economics. There is a web of inter-related prices along the food chain: prices for the same products that only differ spatially, prices for different substitutes (or complements) products in the same location and prices of goods that involve transformation of another good.

39. Figure 3 adapted from OECD (2014) presents a framework to look at price transmission along the agro-food chain, splitting problems related to horizontal price transmission (spatial) and issues related to vertical price transmission (i.e. transmission along the chain). Indeed to understand how prices are formed it is necessary to dig into the functioning of the food chain.

\textsuperscript{13} The French answer to the OECD questionnaire concerning the question of costs shows that the cost might be less significant if statistical information on prices, margins and the functioning of the chain is already collected by a governmental entity.
Issues affecting price transmission along the food chain

Figure 3. Issues affecting price transmission along the food chain

Source: Adapted from OECD (2014)

Issues related to horizontal price transmission:
- Volatility
- Policies
- Exchange rates

Issues related to vertical price transmission:
- Functioning of the food chain and market power
- Consumers’ search strategy
- Vertical coordination / Rising use of private labels
- Regulations
- Transmission of price volatility

40. According to the law of one price (LOP), the price of identical goods in different markets should at most differ by transaction costs of trading the good between the different locations. Spatial arbitrage to restore the LOP should occur when a price shock increases the price differential to a level exceeding transaction costs. With the food crisis of 2007-08 and food riots that took place around the world, the question of integration to global markets has come back to the centre of the global agenda. The question is important for developing countries but also for developed ones: Switzerland stressed in its questionnaire its concern about horizontal price transmission related to the strong Swiss franc as negative effects on Swiss exports of agricultural products arise and are exacerbated by imperfect and delayed price transmission along the food chain. Through a literature review of spatial price transmission papers, Listorti and Esposti (2012) have identified three particular topics that are at the centre of investigations in the area of spatial price transmission: non-linearities, price volatility and policies.

Horizontal price transmission during periods of turbulences

41. The horizontal price transmission process is often described as regime dependent (Fackler and Goodwin, 2001) and modelled using threshold error correction models (Goodwin and Piggott (2001), Balcombe et al. (2007)). In this framework it is assumed that nonlinearities in the horizontal price transmission process are temporary: they happen in period of market instabilities. In the long run, the LOP should hold. Econometric models of horizontal price transmission have improved with the advances in time series econometrics. Greb et al. (2013) discuss some of the latest methodologies to estimate threshold models in spatial transmission analysis however there is no clear optimal methodology. Most of the research on spatial price transmission focuses on comparing prices for agricultural goods, i.e. cross border price transmission. In the context of this report, it seems necessary to look at the price transmission process from the border to the domestic market.
42. Badequano and Liefert (2014) analysed the extent to which consumer food prices in urban areas of developing countries - where consumers are net buyers of food - are related to price movements in international markets; i.e. to what extent world price shocks are passed on the domestic developing countries markets. They found that consumer prices in developing countries are cointegrated with world agricultural prices but that the transmission of price shocks on agricultural markets to developing countries consumer markets is generally not high; this transmission being lower for domestically produced goods. The speed of the return to a new equilibrium after a price shock is relatively slow, and even slower for a heavily imported commodity.

Role of policies

43. Policy instruments may create or correct imperfections in the price transmission process. This is underlined in the OECD study on the impact of the policy responses to the food crisis (Jones and Kwiecinski, 2010). As an output of the joint report’s (FAO et al, 2011) recommendations and at the request of the Agricultural Ministers of the G20, the Agricultural Market Information System (AMIS) was established to enhance food market transparency. In that context, policy developments are being monitored at the country level by AMIS and the AMIS policy database is currently being built. It is described in Box 3 and will allow for future in-depth analysis of relationships between prices and policies in place.

Box 3. The AMIS Policy Database

The main objective of the AMIS Policy Database is to monitor recent policy developments which are likely to impact on the prices, trade and production of selected commodities. To achieve this objective, the database gathers information on trade measures and domestic measures for the four AMIS crops (wheat, maize, rice, and soybeans) as well as biofuels in the 28 AMIS countries. The novelty of the AMIS Policy Database is twofold. First, it is the only database that combines trade and domestic policy information for a large group of countries. Second, its design allows for comparisons across commodities, across policies and across the AMIS countries for selected periods of time. This was accomplished through a rigorous harmonization process where different datasets were integrated and a new comprehensive database structure was designed. As a result, the AMIS Policy Database provides a standardised, easily accessible source of information for policy makers and analysts.

Sources

The different policy datasets originate from two international organizations: OECD and WTO. In particular, data on Biofuel Policies, Agricultural Export Restrictions, and Producer and Consumer Support originated from OECD datasets, while datasets with Import Tariffs, Tariff Quotas and Export Subsidies were provided by WTO. The datasets on biofuel policies and export restrictions have been constructed by gathering information from official legal documents, government websites and other reliable sources. The WTO datasets are based on WTO Members’ annual notifications. The data on producer and consumer support originate from OECD’s Producer and Consumer Support Estimates database.

Online application

The complete AMIS Policy Database will be available online. The online application is not only a depository of the database, but also an analytical tool which provides both a concise and an in-depth overview of the database. This is

http://www.amis-outlook.org/

The 28 AMIS countries are the G20 countries (Argentina, Australia, Brazil, Canada, China, France, Germany, India, Indonesia, Italy, Japan, Republic of Korea, Mexico, Russia, Saudi Arabia, South Africa, Turkey, the United Kingdom, the United States and the European Union), plus Spain and seven major producing, consuming and exporting countries of commodities covered by AMIS. These seven countries are: Egypt, Kazakhstan, Nigeria, Philippines, Thailand, Ukraine and Viet Nam.

The word ‘dataset’ is used to refer to the original datasets while the word ‘database’ denotes the integrated version of the datasets.
accomplished through the development of several activities:

- A Visualization tool, which provides a set of interactive graphs that give a snapshot of the contents and potential of the AMIS Policy Database.
- A Query and Download tool, which allows the user to select, view and download subsets of the AMIS Policy Database.
- A Statistical Notes page with explanatory documents, diagrams and links with background information on the organization and contents of the database.
- A Restricted Access segment which enables AMIS members and the Secretariat to exchange information on policy developments of relevance to AMIS.

44. The role of policy measures such as border protection or price stabilisation policies in explaining why markets in some countries may not be (fully) integrated to the world markets for short term or longer term periods has been studied in detail in the aftermath of the food crisis (Abbott (2012), Götz et al. (2013), Esposti and Listorti (2014), Oskenbayev and Turabayev (2014)). Policies often enter price transmission model because of the structural breaks created by the policy regime change. Brooks and Melyukhina (2005) in their estimation of price pass-through in the context of the liberalisation of Brazilian agricultural markets stressed the limitations of time series based approaches to discriminate between policy and non-policy determinants of food price changes for developing countries.

**Impacts of transportation costs**

45. Volpe et al. (2013) examine how transportation costs affect fresh fruit and vegetable prices by looking at the transmission of fuel price changes to wholesale produce prices in the United States using data for 2000-2009. Fresh produce provides particularly clear insight into the effects of transportation costs on food prices, because fruits and vegetables typically have few processing or other non-transport expenses and they have clear geographic origins. The effect of fuel price increases on wholesale produce prices varies by commodity characteristics. For commodities with multiple growing sources, robust imports, and weak seasonality, fuel price effects are significant but vary across geographic markets and seasons. For commodities with clear growing seasons and few major import sources, fuel price effects are more constant, with a discernible relationship between price increases, seasonality, and transportation distance.

**Issues related to vertical price transmission**

**Asymmetries are characteristic of the price transmission process along the food chain**

46. The replies to the questionnaire have shown a common concern by most countries regarding issues associated with the structure of the food chain such as asymmetries in price transmission and UTPs. For example, the Price Observatory set in 2009 in Belgium has demonstrated that price asymmetry for processed food products occurs especially at the retail level. This means that consumer prices go up when the prices of the underlying raw materials go up, but when underlying raw materials go down consumer prices don’t change. Price asymmetry was found to be less problematic at the food industry level.

47. The question of the speed of the price transmission process, i.e. “the rockets and feathers pattern”, is also scrutinised. The study by Peltzman (2000) aimed to provide a confirmation of the

---


18 Bacon (1991) used this expression to reflect the asymmetric speed of adjustment of retail gasoline prices to cost changes in the United Kingdom: Prices rise like rockets but fall like feathers.
concerns expressed by actors and policy makers by testing systematically for asymmetries using an important dataset. He found that asymmetries are characteristic of the price transmission process along the food chain: prices tend to rise faster than they fall in most markets studied.

In the early 1990s, cointegration econometric techniques started to develop. One of the first applications of these approaches to the agriculture sector was by von Cramon-Taubadel (1998), who tested for asymmetries along the German pigmeat chain. Following von Cramon-Taubadel’s approach, most of the recent analyses of price transmission along the food chain are testing for the presence of unit roots and for co-integration. They are mainly focusing on the existence of asymmetries in the price transmission process along the chain using more and more advanced often nonlinear statistical methods that are introduced in Box 4.

Box 4. Time series analysis and price transmission along the food chain

Recent methodological development:

The review of recent development in the time series analysis of price transmission undertaken by Hassouneh et al. (2012) in the context of the TRANSFOP project focused on statistical methods able to fit the non-linearity of the price transmission process. This non-linearity might be the result of a regime shift (for example a policy or a technology change), menu costs and product perishability or as very often claimed of imperfect competition due to concentration or market power.

When the unit root and co-integration tests have been passed, non-linear models can be estimated to look at the price transmission process. Non-linear vector error correction models (VECM) include Threshold Vector Error Correction Models (TVECM). Vavra and Goodwin (2005) applied a TVECM to look for asymmetries in the price transmission process along the US meat chain. Estimation procedures of TVECM were described in their report. Threshold vector error correction model are able to take into account the fact that the price adjustment might differ given different regime switches (for example for rising and falling prices or when prices are reaching a certain threshold level).

TVECM have become very popular in the field of food price transmission. Another example of application of TVECM is provided by Roeger and Ephraim (2011) with the US beef and bread supply chains. They modelled the price transmission process between the farming, the wholesale and the retailing stages and allow for structural breaks in the long-term price relations (i.e. different thresholds). They found that less processed food products were showing more responses to upstream price changes than more processed ones and that price transmission was more asymmetric between the wholesale and the retailing stages.

The asymmetric vector error correction model is a special case of the TVECM (AVECM). In this framework, the error correction term is separated in its positive and negative components. In such a framework, it is possible to test if a price increase in the wholesale or agricultural producing stage is passed more rapidly to the retail price than a price decrease. Acquah and Dadzie (2010) for example have used this modelling framework to analyse the wholesale to retail maize price transmission in Ghana and have found that retailers react more quickly to increasing wholesale prices than decreasing wholesale prices.

Non parametric techniques can also be used to assess price transmission (Serra et al., 2006). They do not impose any a priori parametric restriction and thus are fitting the data well but the interpretation of the results might

---

19 The dataset contains price data for 77 consumer and 165 producer goods between 1978 and 1996 in the United States

20 Cointegration means that there is a long run stationary equilibria relationship between two time series. According to Myers (1994), food price series are usually non-stationary and they tend to be co-integrated.

21 A menu cost is the cost to a firm resulting from changing its prices

22 An Error Correction Model is a dynamic model that directly estimates the speed at which a time series returns to long run equilibrium after a change in another time series.
Becoming difficult. Emmanouilides and Fousekis (2014) used copulas to look at vertical price dependence along the beef supply chain in the US. Copulas are flexible statistical tools to analyse price co-movements in particular in case of extreme events (Roboredo, 2011). It is the availability of a theoretical justification and of econometric techniques that mostly dictate the model’s choice.

### Frequency, aggregation and type of price data

Although retail pricing decisions are usually made at the store level or at the group level, most vertical price transmission studies are using cross-sectional aggregated prices along the food chain: they are estimating relationships between average wholesale prices and average retail prices.

Von Cramon-Taubadel et al. (2006) questioned this methodology by comparing vertical price transmission estimates at the store level with estimates that are usually computed at the aggregate level for the German frozen chicken and lettuce chains. They found that aggregation provides misleading views of the dynamic of price transmission with slower responses than at the store level. They also noted that error correction models might not be the best tools to look at price transmission at the disaggregated level because of the non-gradual nature of the retail price adjustment.

The increasing availability of high-frequency data enables researchers to look at much disaggregated food price dynamics. Rojas et al. (2008) studied retailer price responsiveness to wholesale price changes in the beef industry using both Bureau of Labor Statistics aggregate retail price data and quantity-weighted retail price scanner data and found that asymmetries often observed in the wholesale to retail price pass-through might be less prominent when scanner price data are used.

Loy et al. (2014) analysed food price dynamics at the retail outlet level for private labels and national brands using product-specific weekly scanner data. This level of disaggregation enables a better understanding of the functioning of the pricing dynamics between product categories in the German dairy food chain.

Ferrucci et al. (2012) analysed the transmission of agricultural commodity price increases in the food chain within the euro area and found a significant and long-lasting pass-through. They stressed the need to use “adequate” prices to perform this type of analysis, i.e. EU internal commodity prices (that are taking into account the Common Agricultural Policy). All studies that were based on international prices failed to find transmission during the food crisis. Ferrucci et al. also found that price pass-through should preferably be estimated at the disaggregated level.

---

49. The OECD report on price transmission along the food chain (Vavra and Goodwin, 2005) put some emphasis on the need to analyse the magnitude, the speed and the direction of the price adjustment process to better understand the functioning of the food chain. When the speed and the magnitude of the pass-through differ depending on the direction of the price change, price transmission is said to be asymmetric. However, as pointed by Meyer and von Cramon-Taubadel (2004), most of the studies focus solely on the existence of asymmetries, with the risk of results being driven by the econometric methodology applied, the type of price data used or the sector studied.

50. Theoretical justifications and explanations of the existence of asymmetries are mostly unavailable although retailers’ market power is often blamed (Vavra and Goodwin, 2005). Market power can take place at all levels of the chain. Götz and Kachel (2008) studied Israeli grapefruit exports to the EU and found some evidence for asymmetric price transmission between fresh fruit and vegetable growers and exporting companies. They link this asymmetric price transmission with the market power exerted by the exporting companies.

---

23 The magnitude of price transmission reflects the share of the price change that is passed to the final consumer price.
Retailers’ pricing strategies adjust to consumer search strategies

51. Tappata (2009) has developed a consumer search model framework to illustrate why price transmission asymmetries might arise even in a highly competitive market structure. In this model, consumers are rational and only partially informed about market prices and underlying production costs. When production costs are rising, consumers have an incentive to search for cheaper products implying a stronger elasticity of demand for final products which leads to rising final prices. When marginal cost of production is high, price dispersion for the same products among retailers is small. In that case, consumers search intensity is low. Then, if marginal costs are dropping, retailers have little incentive to decrease their prices: retail prices will decrease slowly. On the contrary if marginal cost is relatively low, price dispersion among retailers is likely to be important. Consumers’ search should be relatively intensive. In that case a response by retailers to a change in marginal cost would be to raise prices significantly and quickly. This is called the rockets and feathers phenomenon.

52. Richards et al. (2014) tested the fact that consumer search behaviour might be responsible for asymmetric price transmission along the food chain using a panel threshold asymmetric error correction model applied to weekly wholesale and retail scanner data for breakfast cereals for a certain number of retailers in a specific US metropolitan area. In this framework, consumer search behaviour is measured using a proxy: the number of products in the store which was shown to be directly related to search costs and inversely related to search intensity. Consumer search is found to cause retail prices to rise quickly and fall slowly. Price transmission is found to be more symmetric in a low search cost environment. Research by Innes and Hamilton (2013) suggests that slotting allowances by increasing product variety and thus search costs can imply lower welfare for consumers.

53. Loy et al. (2014) used a similar methodology as Richards to study the milk and butter price pass-through at the retail level by product types (private labels and national brands) in Germany. The study shows differences in the level of asymmetry in cost pass-through among products: the asymmetry appears stronger for private labels than for national brands.

Influence of vertical coordination and vertical restraints

54. Vertical coordination through contracting or private labels has become a key feature of the food chain. There is an increasing literature on the impact of vertical coordination on the price pass-through along the chain. The so-called “double marginalisation problem” and associated high consumer prices is often at the centre of concerns: When the processing and the retailing industries exercise market power, the final price that consumers pay for their food contains two mark-ups: one added by the processing industry to set the wholesale price and one added by the retailing industry to set the retail price. However if both processing and retailing stages are vertically integrated - this is the case for private labels for example - and are coordinating their pricing strategies, then prices paid by consumers could be lower and profits by the industries higher. This would reduce the double marginalisation problem.

55. OECD (2006) has shown that retailers tend to ask for stronger quality requirements than the ones adopted in collective private quality standards such as globalGAP. Von Schlippenbach and Teichmann (2012) explored the strategic role of private quality standards in the agro-food chain and found that the main reason behind the retailers’ search for product differentiation is not to address consumers’ preferences but to improve their market power.

---

24 A slotting allowance is a fee charged to manufacturers by retailers so that their products are placed on their shelves
56. Structural models have been developed to look at the problem of imperfections in price transmission along the food chain. They are exploring pricing behaviour with an explicit modelling of demand and supply equations at different levels of the chain. Those models are able to take into account several additional factors reflecting agro-food chains such as the fact that imperfect competition happens at different stages of the chain and that there is an increasing trend in vertical contracting and private labels and quality standards in the food industry.

57. In 1998, McCorriston et al. provided a structural model adapted from Gardner (1975) that related price transmission to the degree of imperfect market competition as well as to the nature of the processing industry\(^2\) in the food chain. Recently, specific factors that may contribute to imperfect price transmission have been identified through theoretical structural models and empirical applications.

58. Richards and Pofahl (2009) estimated with a structural model price pass-through for two different products: one minimally processed (apples) and one highly processed (breakfast cereals). They show some price transmission asymmetry for the apple market: falling commodity prices are not fully transmitted to consumers and wholesalers and retailers margins tend to increase. For breakfast cereals, they show that wholesale and retail margins are moving in opposite direction. When input prices rise, wholesale margins are widening whereas retail margins are contracting. In the opposite case, wholesale margins are contracting as retail margins are expanding. Obviously, the cost of adding value to a food product that depends on external factors such as inflation levels, labour costs, investments that are almost not correlated to agricultural commodity prices is also reflected in in final prices paid by consumers.

59. Richards et al. (2012) exploit recent volatility in food commodity prices over the period 2007–2010 to investigate using a similar method how commodity price shocks translate into market power. They found that for a fresh product (potatoes), commodity price volatility increases market power: combined wholesalers and retailers margins widen a substantially greater degree in response to negative commodity price shocks than margins narrow in response to positive shocks. On the contrary, for a product like fluid milk, they found that commodity price volatility reduces market power: wholesalers and retailers are not adjusting their margins in response to negative price shocks. This suggests that the pricing strategies of retailers differ with the type of products sold: maintaining low fluid milk prices (with low margins) independently of the commodity price environment attracts consumers to the retail outlet. Those consumers will then buy other products for which a different pricing strategy is used.

60. This has important implications for policy makers in a context of volatile agricultural commodity prices: competition at the different levels of the chain has a direct influence on how a change in the underlying agricultural commodity price changes is passed through the food chain and thus on the final price paid by consumers for their food.

61. Nakamura and Zerom (2010) have underlined in a dynamic modelling framework of the US coffee marketing chain that price rigidities appear both at the wholesale and retail levels and that price adjustments at the wholesale level appear more frequently in a period of volatile commodity prices. They investigated factors potentially leading to incomplete price transmission and found that mark-up adjustments whereby firms compress their gross margins when marginal costs are increasing play an important role and that menu costs, i.e. the costs of changing prices for a firm, imply a delay of several months in the price adjustment process.

\(^2\) Here it is referred to the possibility of substituting agricultural inputs with other types of inputs on the processing phase.
62. Vertical restraints such as resale price maintenance\textsuperscript{26} are important concerns for policy makers. Germany, France and the United States forbid resale price maintenance. Bonnet \textit{et al.} (2013) focused on a structural modelling of the German coffee market to look at the role of vertical restraints on price transmission. They found that resale price maintenance increases the price transmission of an upward cost shock; retailers being not able to reduce their gross margins by performing mark-up adjustments. The impact of nonlinear pricing contracts on the price pass-through is inversely related to the level of concentration of the upstream sector.

63. This analysis underlines the fact that vertical relationships have an effect on prices but also on the price transmission mechanism along the chain and thus that regulation mechanisms matter in accompanying the relationships of actors along the chain. Misra \textit{et al.} (2010) studied the cost pass through in the US milk market and found that highest pass through (for negative and positive cost shocks) was found in states where regulation was stronger than federal regulations.

\textit{Structure of the food chain and regulations}

64. To provide an explanation to the asymmetries found in the price transmission process, Bakucs \textit{et al.} (2014) undertook a meta-analysis\textsuperscript{27} of more than 35 price transmission studies that have all been published after 2002. They followed the argument of Sexton (2013) whereby the structure of the food chain by itself implies a deviation from the perfect competition framework and chose to look at the role of market structure at the different levels of the chain as an underlying reason for asymmetric price transmission.

65. They thus used a certain number of market structure indicators as explanatory variables (controlling for estimation techniques, countries, sectors) including regulatory indicators for the retail sector that have been obtained from the OECD Regulatory database\textsuperscript{28} and indicators of market power at the different levels of the chain.\textsuperscript{29} They found that asymmetric price transmission is less likely when the bargaining power of the different actors is balanced, in the absence of price controls regulations to limit price competition between retailers and also when concentration in the retail sector is strong\textsuperscript{30}. The interesting conclusion from this paper is that retailers’ market power should not be seen by policy makers as the only driver of asymmetries in price transmission along the food chain. In fact other dimensions of market structure at the different stages of the chain and the regulatory environment matter.

\textsuperscript{26}Resale price maintenance is a practice whereby a retailer and a manufacturer agree that the manufacturer’s product should be sold at a certain price.

\textsuperscript{27}A meta-analysis study is a statistical method that takes into account the finding of various studies to gain new insights by finding factors that are driving results.

\textsuperscript{28}The OECD Regulation in Retail Trade database is available on OECD.Stat. It provides information on 5 sets of regulatory indicators for the retail sector: registration and licensing requirements, specific regulation of large outlet, protection of existing firms, regulation concerning shop opening hours, price controls, promotions and discounts. Each indicator is ranging between 0 and 6. The information is computed by the OECD Secretariat through a survey sent every five years to OECD member and some non-member countries. This database is one of the only sources of comparable information on the regulatory environment in place in the retail sector.

\textsuperscript{29}They include concentration ratios, size of the sector in the retail sector, average turnover per manufacturing firm over the average turnover per retail firm, size of farms.

\textsuperscript{30}Peltzman (2000) and more recently Swinnen and Vandeplas (2010) also found that the price transmission process is more symmetric when the retail sector is concentrated. They linked it to several factors: an increase in scale economies, a reduction in transaction costs, the promotion of research and development and the countervailing power than can be gained by other agents along the chain.
Transmission of price volatility

66. Recent instabilities in agricultural markets have fostered research on price volatility and associated transmission to food prices. Price volatility transmission corresponds to the transmission of unexplained price changes from one market to another. The interest is thus on the transmission of price volatility and associated contagion effects along the food chain. Assefa et al. (2014) undertook in the context of the Ulysses project a review of the growing literature on price volatility transmission along food supply chains. Most of this literature is using Multivariate Generalized Autoregressive Heteroskedasticity models (MGARCH) that can be adapted depending on the focus of the analysis. One of the conclusions of this review is that price volatility is transmitted along the chain from upstream to downstream and vice versa. However final consumer food price volatility is found to be lower than farm level price volatility. Market power exerted by retailers and wholesalers on food prices has been suggested to be behind this lower final food price volatility but empirical studies are still lacking.

67. Further work on the transmission of price volatility is needed to be able to explore the possible impacts of risk management policies at certain levels of the chain. Serra (2013) undertook a literature review of studies that focus on the volatility interactions between energy and food markets using GARCH models. It appears that energy markets are not likely to determine biofuel feedstock price levels but that they may transmit some price volatility to them.

Welfare aspects for agricultural producers

68. It is difficult to assess the welfare aspects associated with price transmission along the food chain. Competition policy has tended to focus on consumer welfare with little regard for the impacts on upstream links in the chain. The survey conducted in the scope of this report has shown that the level of prices paid to agricultural producers is also at the centre of the preoccupations of several countries. A policy question is whether agricultural producers that are increasingly using vertical contracts are subject to misuse of market power from concentrated food processors and retailers.

69. In 2010, the Antitrust Division of the United States Department of Justice and the United States Department of Agriculture (USDA) hosted a series of five workshops exploring competition in the agricultural sector. The workshops gave an opportunity for all actors along the food chain to meet and discuss related issues, including market concentration, transparency, monopsony power and contracting. A particular focus was on agricultural producers and their perceptions of competition issues along the chain. One of the conclusions of the workshops was that competition was necessary for the agricultural sector but that competition laws needed to be enforced.

70. Katchova (2013) looked at contracting and competition along the food chain from a farmer’s perspective. She found using farm-level data that the use of vertical coordination between farmers and food processors does not lead to statistically significant lower prices received by farmers. She underlined the fact that the risk and cost reducing benefits of vertical coordination might balance potential market power problems. Assefa et al. (2014) found that farm to retail price transmission remains asymmetric when agricultural producers have the same market power as the downstream sector using a two-stage farmer retailer supply chain model applied to the Dutch potato sector. Both empirical studies are good illustration of the difficulties in defining terms of trade for agricultural producers in the food chain.

Is there a need for specific instruments and/or initiatives to regulate the food chain and ensure transparency?

71. The detailed answers to the questionnaires that were sent to delegations in the scope of this report have shown how sensitive the problem of price formation along the food chain is to policy makers. Few delegations were highly satisfied by the current functioning of the food chain. Being one of the exceptions, the contribution from New Zealand is worth noting in this respect. Its Commerce Commission has completed several reviews of milk prices at the farm gate and the retail level and has found that markets are working effectively with sufficient competition. Most of the responses underlined the need for transparency in the setting of food prices. This transparency is related to the availability of food price data at the global and domestic levels and at different levels of the food chain. It is also linked to the functioning of the food chain and types of relationships between actors. Finally the setup of codes of conduct or of regulations to improve transparency along the chain was mentioned by many delegations. This section aims to present the initiatives towards a more transparent food chain that have been undertaken since the food crisis.

Availability of price data and transparency along the food chain

72. The strong policy responses to the food crisis at the end of the last decade all went in the direction of improving transparency in the food sector (FAO et al., 2011). In that context, the availability and dissemination of food price information - whether at the producer, wholesale or consumer level - has become crucial. Several initiatives have been set up in the aftermath of the food crisis to summarise food price information at the international level and/or disaggregate it to the product level such as the Agricultural Market Information system (AMIS) Market Monitor\(^{32}\), the FAO Global Information and Early Warning System (GIEWS),\(^{33}\) the IFPRI Food Security portal and the Excessive Food Price Variability Early Warning system,\(^{34}\) the World Food Program VAM Food and Commodity Prices Data Store.\(^{35}\) At present, GIEWS as well as the World Food Program VAM Food and Commodity Prices Data Store seem to be the unique platforms where retail food prices for a certain number of specific food products and countries are stored and updated on a monthly basis.

73. Commodity prices are used to derive various ‘food price” indices. The FAO Food Price Index (FFPI)\(^{36}\) is a measure of the monthly change in international prices of a basket of food commodities. The World Bank also has its own Global Food Price Index that is reported on a quarterly basis on its newly established Food Price Crisis Observatory portal.\(^{37}\) Commodity prices do not represent accurately prices that consumers actually pay for their food. The OECD-FAO Agricultural Outlook database provides projections for agricultural producer and consumer food prices. Building PPI and CPI at the domestic and


\(^{33}\) http://www.fao.org/giews/english/Index.htm, On the GIEWS portal, international commodity prices are updated on a monthly basis.

\(^{34}\) http://www.foodsecurityportal.org/, Volatility measures on cereal markets are updated on a daily basis in the Food Security Portal.

\(^{35}\) http://foodprices.vam.wfp.org/Default.aspx

\(^{36}\) http://www.fao.org/worldfoodsituation/foodpricesindex/en/, The FAO food price index consists of the average of five commodity group price indices (cereal, vegetable oil, dairy, meat and sugar) weighted with the average export shares of each of the groups for 2002-2004. It provides an indicator to monitor developments related to food security.

regional levels in the context of the Outlook work as proposed in Box 1 would contribute to anticipating future developments on food markets around the world.

74. Obviously an index of food prices such as the CPI is not sufficient to look at retail food price formation. Most reports published in the context of the TRANSFOP project underlined the need for improved data availability to allow for further research in the field of food price formation/transparency. Price information at different levels of the food chain is necessary when one wants to compute margins and to estimate price transmission. The European Commission (2009) defined an increase in food price transparency as one of the four main objectives in order to improve the soundness of the European food supply chain. The Finnish and Latvian questionnaires also stress the fact that the lack of accurate data on prices throughout the food chain prevents the undertaking of thorough analysis of price transmission practices and of often alleged UTPs.

75. Several initiatives have been set up to fill the data gaps. They complement the regular reporting of food price data through CPI. The High Level Forum for a Better Functioning Supply Chain was launched in November 2010 by the European Commission to implement a roadmap of initiatives to improve the competitiveness of the agro-food industry in Europe. Its mandate ended at the end of 2014. It provided support to the exchange of best practices among European Member States on food price monitoring. In the context of the forum, The European Commission (2014c) published a note describing food price monitoring initiatives in Europe. It splits food price observatories in 4 types:

- Basic national consumer price monitoring: Basic information on price indices for specific categories of food product is reported,
- More elaborate consumer price monitoring: Comparisons of absolute price levels in various geographical areas is also provided,
- Food supply chain monitoring: Comparison of price changes at various stages of the food supply chain is possible
- Food supply chain price and cost monitoring: Information on the cost structure of specific product categories is available.

76. Table 2 provides an overview of the type of price monitoring that has been reported by countries in response to the OECD questionnaire using those categories. Annex 2 goes further into details and summarises the type of price data that are monitored based on the answers to the questionnaire.

77. All countries are monitoring food prices paid by consumers. One-fourth of the countries are not going behind basic national consumer price monitoring that is usually undertaken by national statistical office and well documented online. All other countries are going further. The main reasons for this as reported in the answers to the OECD questionnaire are the following: to monitor the evolution of prices at different levels along the food chain, to increase transparency along the food chain and finally to provide regular and objective information to market participants and consumers about the share of the different stakeholders along the chain in final food prices.

---


39 It is also worth noting that the Government of India has a Price Monitoring Cell (http://consumeraffairs.nic.in/consumer/?q=node/47 ) in the Department of consumers Affairs that monitors and publishes daily retail and wholesale prices of 22 essential commodities in 59 market centres spread across the country.
78. Two-thirds of the countries do not have a special entity that is reporting and summarising the information. In those cases, sometimes quite advanced and specific food price data are available online but on the websites of several institutes or governmental entities; which prevents easy information spreading and comparison. In total 6 countries (Belgium, Italy, Lithuania, France, Spain and the United States) and the European Union have entities that go behind the reporting of prices: those entities are either independent or part of ministries. They are all easily identifiable online and have published well documented reports on the functioning of their food chains.

Table 2. Types of food price monitoring undertaken as reported in the OECD questionnaire

<table>
<thead>
<tr>
<th>Country</th>
<th>Basic national consumer price monitoring</th>
<th>More elaborate consumer price monitoring</th>
<th>Food supply chain monitoring</th>
<th>Food supply chain price and cost monitoring</th>
<th>Existence of a special entity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Australia</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Belgium</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Canada</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chile</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>China</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Czech Republic</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Denmark</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Estonia</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>European Union</td>
<td></td>
<td>X</td>
<td></td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Finland</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>France</td>
<td></td>
<td></td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Greece</td>
<td>X</td>
<td></td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hungary</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Indonesia</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ireland</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Israel</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Italy</td>
<td>X</td>
<td></td>
<td></td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Japan</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Korea</td>
<td>X</td>
<td></td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Latvia</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lithuania</td>
<td></td>
<td></td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Mexico</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Netherlands</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>New Zealand</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Norway</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Poland</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Portugal</td>
<td>X</td>
<td></td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Romania</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Slovenia</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>South Africa</td>
<td>X</td>
<td></td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Spain</td>
<td>X</td>
<td></td>
<td></td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Sweden</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Switzerland</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Turkey</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>United Kingdom</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>USA</td>
<td></td>
<td></td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
</tbody>
</table>

Sources: Responses to the questionnaire on the role of institutions in providing food price data and analysis.

79. One of the prominent initiatives – and the only initiative at the supra-national level - is the European Food Prices Monitoring Tool (FPMT). The FPMT is a source of harmonised information on

prices throughout the food supply chain at the European level. The FPMT aims at enhancing price transparency and predictability throughout the food chain. Users can compare monthly price indices and rates of change for 17 food chains at the producer, at the processing and at the retail stages in the European Union. The tool uses data collected by Eurostat and National Statistical Offices. At the request of the European Parliament, an Expert Platform that reunites Member States and stakeholder representatives is working on further developments of the tool and on the improvement of its visibility with a dedicated website. The FPMT should move towards becoming a “European Farm Prices and Margins Observatory”.

80. The most advanced monitoring entities explore the process of price transmission on a regular basis based on quantitative analysis. The United States and France assess margins at different levels of the food chain using input/output tables as described in section 2. The Spanish Food Price observatory (Observatorio de Precios de los Alimentos)\footnote{http://www.magrama.gob.es/es/estadistica/temas/estadisticas-alimentacion/observatorio-precios/} that was set up in 2000 and strengthened in 2008 operates differently. It provides, on the top of weekly reports on prices at different levels of 38 fresh products value chains, detailed food supply chain studies that decompose food prices into their costs elements. All supply chain studies contain a general description of the value chain to allow for an in-depth understanding of the production processes. Costs and prices involved at the different stages are determined on the basis of discussions with the industry. Three plenary meetings are organised annually to allow for dialogue, better understanding and collaboration between stakeholders along the chain. The Spanish law 12/2013 on measures to improve the functioning of the food chain came into force in January 2014. It called for the replacement of the Food Price Observatory by a Food Supply Chain Observatory (Observatorio de la Cadena Alimentaria) which was constituted in April 2015. This Observatory will continue to study food supply chains.

Going further than the “traditional” monitoring of the food chain by competition authorities

81. Australia and Canada according to their answers to the questionnaire think that transparency in food prices is important and that their respective competition authorities are well equipped to deal with possible deviation from a perfectly competitive framework. Australia noted that the setting of food prices should best be left to the market. Most of the other delegations consider that the specificities of the food system - high concentration of the processing and retailing levels, vertical coordination, low raw commodity share in final food product value, high volatility of agricultural products prices - imply the need for the development of other kinds of initiatives. This is not a recent phenomenon. In the early 2000s, USDA’s Agricultural Marketing Service developed a mandatory price reporting system on fed cattle markets (Lee et al., 2012).

82. In addition to the establishment or to the reinforcement of food price monitoring entities, several initiatives have been developed since the food crisis of 2007-08 to account for the specificities of the food chain. They range from codes of conduct and voluntary initiatives implemented by the private sector or by governmental entities to the vote of specific regulations in several countries. Often a combination of those options has been used or is in the process of being established. The aim of the instruments is clearly defined and depends on the set of issues the country is most concerned about: for example protecting the weakest links in the food chain, making sure that food markets are efficient, or protecting the food chain from price volatility.

83. Table 3 presents a summary of the instruments that have been developed and reported in the OECD questionnaire. Discussions organised by the government between food chain stakeholders are take place in Austria, Mexico and Switzerland. Codes of conducts are being elaborated in Australia and Norway. This task is not straightforward as underlined by the rejection by food chain stakeholders of a
code of conducts for contractual arrangements that was proposed in Poland by the Inter-Ministerial Team for Increasing the Transparency of Agri-food Markets and Improving the Functioning of Food Chain.

84. Five countries have already introduced codes of good practices since the food crisis: the Netherlands, Portugal, Slovenia, Spain and the United Kingdom. The codes in Slovenia and the Netherlands correspond to voluntary agreements to promote good practices between stakeholders. Members that have signed the code can submit complaints to a Steering Committee. Ministries only have an observer status. In Portugal, a Platform for Monitoring the Food Chain was created in 2010 to foster fairness and balance along the food chain. It corresponds to a forum of discussion not a regulatory body that meets on a quarterly basis and discusses subjects related to transparency, UTPs, national production, arbitration of conflicts and private labels. Two laws were voted in 2013 as a result of exchanges that took place within the platform framework. They deal with mandatory payments deadlines for small firms and UTPs.

85. Both in the United Kingdom and in Spain, the establishment and the functioning of the codes of conduct are related to regulations. In the UK, the regulation arrived ex-post: a Competition Commission investigation into the supply of groceries found in 2008 that there was evidence that retailers were using their buying power to the disadvantage of their suppliers. As a result, a voluntary code, the Groceries Supply Code of Practice (GSCOP), was set up in 2010. The Code provides details on how retailers should manage their relationship with suppliers. The government gave large retailers time to set up a voluntary Ombudsman; however as this self-regulatory approach did not progress, the UK Grocery Code Adjudicator was established on a statutory basis in June 2013. It is funded on a levy on the 10 largest retailers. The GCA provides advice, support and guidance to businesses along the whole supply chain if they are direct suppliers to the ten largest UK retailers.

86. In Spain, the Code of Good Commercial Practices was established by the law 12/2013 for a better functioning supply chain which entered into effect in January 2014. Membership is on a voluntary basis. The code is overseen by the Food Supply Chain Observatory and should foster best practices and accommodate a system for dispute resolutions. The law also stipulates that all commercial relations should be done through written contracts and that some unfair practices such as unilateral contract modifications or commercial payments to retailers are forbidden.
<table>
<thead>
<tr>
<th>Country</th>
<th>Discussions among stakeholders organised by the government</th>
<th>Code of conduct</th>
<th>Regulation / Law</th>
</tr>
</thead>
<tbody>
<tr>
<td>Australia</td>
<td>A food and grocery code of conduct is currently under discussion</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Austria</td>
<td>Initiative for a “Better functioning of the food supply chain in Austria” started in July 2014</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chile</td>
<td></td>
<td>Law governing commercial transactions of agricultural products (2013) Law of voluntary registration of agricultural contracts 20.797 (2014) which addresses the issue of commercial practices in the transactions, in particular breach of contracts and dispute settlement mechanism.</td>
<td></td>
</tr>
<tr>
<td>Finland</td>
<td></td>
<td>Amendment of the Competition Act in January 2014</td>
<td></td>
</tr>
<tr>
<td>France</td>
<td></td>
<td>Loi de modernisation de l’agriculture et de la pêche (July 2010)</td>
<td></td>
</tr>
<tr>
<td>Ireland</td>
<td></td>
<td>The Consumer Protection and Competition Bill (it should be established on 31/10/2014)</td>
<td></td>
</tr>
<tr>
<td>Israel</td>
<td></td>
<td>The “Law for enhancement of competition in the food sector” entered into force in January 2015</td>
<td></td>
</tr>
<tr>
<td>Korea</td>
<td></td>
<td>An electronic auction system for the distribution of agricultural products was implemented in 1999. A direct transaction system was put in place alongside the auction system from 2000 and a real-time information network was established in order to improve the transparency and flow of market information.</td>
<td></td>
</tr>
<tr>
<td>Japan</td>
<td></td>
<td>Revision of the Japan Revitalization Strategy (June 2014)</td>
<td></td>
</tr>
<tr>
<td>Lithuania</td>
<td></td>
<td>Law “on the prohibition of unfair practices of retailers” (2009)</td>
<td></td>
</tr>
<tr>
<td>Mexico</td>
<td>2 new programs have started in 2014 : “Agrifood Cluster Development” (AGROCLUSTER) and “Strengthening of the Productive Chain”.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Norway</td>
<td>Drafting of a “good practices standard” is under discussion</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Poland</td>
<td>In 2010, an Inter-Ministerial Team for Increasing the Transparency of Agri-food Markets and Improving the Functioning of Food Chain was created. It prepared a code of conduct which was not adopted by market participants.</td>
<td>Draft Rural Development Programme for 2014-2020</td>
<td></td>
</tr>
<tr>
<td>Portugal</td>
<td>The PARCA - Platform for Monitoring Food Chain Relationships - was created in November 2011</td>
<td>New legislation on mandatory payments deadlines for contracts concerning foodstuffs involving a small enterprise (Law 2/2013) and on individual unfair trading practices (Law 166/2013)</td>
<td></td>
</tr>
<tr>
<td>Slovenia</td>
<td>“Code of Good Practices Among Stakeholders in the Agri-food Chain” was signed in 2011</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Spain</td>
<td>Since January 2014, the Food Supply Chain Observatory is responsible for the set up and monitoring of the “Code of Good Commercial Practices”</td>
<td>The Law 12/2013 on measures for a better functioning of the food supply chain came into force in January 2014.</td>
<td></td>
</tr>
<tr>
<td>Country</td>
<td>Discussions among stakeholders organised by the government</td>
<td>Code of conduct</td>
<td>Regulation / Law</td>
</tr>
<tr>
<td>-----------------</td>
<td>-----------------------------------------------------------------------------------------------------------------------------</td>
<td>------------------------------</td>
<td>---------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Switzerland</td>
<td>The process of developing the Swiss agricultural outlook is still ongoing. This project will provide projections for the most important agricultural markets in Switzerland in order to inform the different stakeholders involved in the agro-food chain on future market developments and enhance transparency</td>
<td>Groceries Supply Code of Practice (GSCOP)</td>
<td>The UK Groceries Code Adjudicator (GCA) was introduced in 2013 to give legal force to the enforcement of the GSCOP</td>
</tr>
<tr>
<td>United Kingdom</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: Responses to the questionnaire on the role of institutions in providing food price data and analysis.

87. In total, 11 countries, almost a third of the respondents to the OECD questionnaire, have undertaken new regulations in the aftermath of the food crisis. They concern mostly relationships among stakeholders along the chain to foster best practices or to forbid unfair trading practices. Two notable regulations have a different nature. Japan voted its 6th industrialisation strategy in 2012, reinforced by the revitalisation strategy voted in 2014, which aims to improve agricultural producers’ positions in the food chain.

88. In Israel, food price transmission and transparency have been at the centre of the government’s agenda since the country witnessed social protests in 2011 against high living costs and food prices. Food prices are regulated for certain products (eggs, dairy products, bread and salt) and published online by different ministries and governmental entities. In addition, “The Law for the Enhancement of Competition in the Food Sector” has been voted in March 2014 and entered into force recently. It directs the vertical relationships between retailers and their suppliers and includes special restrictions for large retailing and supplying companies related to promotions, shelf allocation, and price recommendations from suppliers. Any breach of the law can be punished by important monetary sanctions and even imprisonment. The law will be enforced by the antitrust authority. No other OECD country has an equivalent legislation.

89. At a supra national level, the European voluntary Supply Chain Initiative (SCI) was officially launched jointly by seven EU level associations representing the food industry, branded good manufacturers and the retail sector in September 2013 with the aim to increase fairness in commercial relationships along the food supply chain. Companies along the food supply chain that join the initiative are required to respect the principles of good practice in trading relations and the process established regarding the compliance with the principles and dispute resolution. In case of disputes, the SCI seeks to make it easier for parties to find mutually acceptable solutions. Once the companies have joined the initiative they need to comply with certain obligations: training their staff via e-learning modules, offering a number of dispute resolution options and informing their customers or suppliers that they are member of the SCI.

42 The Ministry of Economy publishes on its website maximum consumer prices for all food products under price regulation; The milk price received by producers needs to be reported and is available on the website of the Israel Dairy Board; The ministry of Agriculture and Rural Development publishes a weekly report with wholesale and retail prices of the major fruits and vegetables consumed.

This initiative is one of the results of the High Level Forum for a better functioning supply chain. One of the objectives of this Forum was to be a platform for dialogue between food chain partners in order to promote sustainable and market-based relationships between stakeholders in the food supply chain. Major European business organisations, representing a large part of the European agri-food sector, agreed in November 2011 on a set of consensual trading principles to be respected; those trading principles are at the centre of the voluntary initiative.

The first annual report of the SCI (Supply Chain Initiative, 2015) was issued in January 2015. It provides an update on what was achieved over the first 16 months of existence of the SCI. As of December 2014, 164 groups representing 863 operating companies in European Member States have joined the initiative. All the sectors of the agro-food chain are concerned although there is an underrepresentation of farm enterprises and almost half of the companies are Small and Medium Enterprises (SMEs). It is noted that memberships tend to be higher in Member States where dialogue among food chain stakeholders is taking place. The SCI wants to achieve in the future a “critical mass” of registered companies. To reach this point, it has defined key performance indicators that correspond to a specific number of the largest retailers and industry actors in the country depending on its size in the European market and the degree of concentration of its food industry joining the initiatives. The SCI also has a target of at least half of the registered companies being SMEs. Those objectives have not yet been met but the SCI sees the trends in registrations as encouraging.

In the context of the first annual report, an independent survey was undertaken to assess the functioning of the SCI. Thirty-nine complaints were received that dealt with the principle of fair dealing, the principle of predictability and the principle of compliance. 86% of those complaints were resolved internally. The SCI explains this relatively low level of complaints by two factors: the SCI by itself can prevent disputes that lead to complaints and members need time to be familiar with the system and to be confident enough to lodge a complaint through the system. The evolution of the SCI and of its dispute resolution mechanism needs to be assessed over a longer time period.

The European Commission published in July 2014 a Communication on UTPs in the food supply chain (European Commission, 2014b). This Communication acknowledges the potential of the voluntary Supply Chain Initiative, and encourages all market operators to join the initiative and its national platforms. The Communication also encourages Member States to examine whether their current national regulatory frameworks are appropriate to address UTPs and to assess the effectiveness and credibility of their available mechanisms for the enforcement of rules against UTPs.

Conclusion: finding the most relevant approach

This paper provides a review of recent initiatives that have been undertaken to ensure transparency along the food chain. Those initiatives were mostly set up as a response to the food crisis and its consequences in terms of food price levels and volatility, as well as changes in food chain stakeholders trading strategies. The lack of easily accessible data on food prices appeared as a major impediment to an in-depth understanding of the crisis. As a result, the gathering of information on food prices became an important priority at national and international levels. Governments reinforced their oversight role by improving their monitoring of prices along the food chain and quite often by providing in-depth review of the functioning of specific food chain that were at the centre of the political and public agenda.

Results from the OECD survey indicate that progress can still be made at relatively low cost. All countries are gathering consumer price information, while most countries are going a step further with the monitoring of prices and sometimes of costs at different levels of the chain. The set-up at the national level of a unique dedicated statistical platform to find all relevant food chain information can facilitate the comparison of information and their use for analysis purposes. Some lessons could be learnt from the
European Food Price Monitoring Tool, which attempts to harmonize and publish food price information for European Member States.

96. The AMIS initiative also tries to fill another data gap and will soon publish the most up-to-date policy information concerning major foodstuffs. The French, US and Spanish experiences show that a resource intensive investment is necessary to be able to undertake in-depth food chain sector analysis. This involves advanced statistical analysis using input/output tables or the results of discussions on costs and benefits with the industry. The increased availability of scanner data to study consumers’ buying behavior and food chain’s stakeholders trading strategies might enhance the possibilities of analysis in the future.

97. The need to complement the monitoring of the food chain by national competition authorities with other instruments was raised in the aftermath of the food crisis when asymmetric price transmission became an issue. Welfare concerns with respect to agricultural producers and consumers as well as the protection of the economy against price volatility were behind some political efforts to ensure more transparency in the price transmission process along the food chain. This resulted in the implementation of a set of initiatives described in this paper that can be classified in three categories: the “voluntary”, the “regulatory” and the “mixed” approaches.

98. The “voluntary” approach often takes the form of codes of good practices that stakeholders at various levels of the chain agree to follow. Those codes are the results of discussions that may have been initiated by governments. They can tackle issues related to terms of contracts and relationships between buyers and suppliers or to private labels. They usually comprise an independent board in charge of the resolution of conflicts. The difficulty with the voluntary approach is to reach a critical mass of registered companies so that the code of conducts actually meets its objective. The “regulatory” approach reinforces the role of competition authorities with regulations that forbid certain types of unfair trading practices, rules relationships among stakeholders along the chain or foster best practices. Those regulations can be difficult to apply in practice. The “mixed” approach corresponds to a combination of both approaches: Regulations might complement or set the ground for a voluntary code of conducts. They are based on the collaboration between stakeholders along the chain and governments.

99. In that context, it would be informative to assess in the future the functioning and the results of those recent initiatives to understand if relationships along the food chain can improve and if governments can succeed in creating credibility for voluntary initiatives towards a better functioning supply chain and in playing an oversight role on their functioning. Blandford (2010) questions the balance between the role of markets and the role of governmental regulation in the context of agricultural policy. He argues that voluntary collective action may be an alternative to an all regulatory or an all market based economic approach. The OECD paper (2015) on the policy implications of voluntary environmental standards in agriculture concludes that there is a role for governments with respect to those private sector initiatives.

100. It is proposed to share lessons from recent initiatives to enhance transparency along the food chain at the 7th Food Chain Analysis Network meeting, which will take place in October 2015. The workshop will allow for further reflection on the role that can be played by governments with respect to the functioning of the food chain. The present paper will contribute to the debate as an input document.
REFERENCES


ANNEX 1: QUESTIONNAIRE ON FOOD PRICE FORMATION

1. Survey of activities in food price formation, transparency and monitoring along the food chain.

   I. Are price formation, transmission and transparency issues along the food chain important and if so for which stakeholders and why?

   II. What are the three most important issues with respect to food prices that have raised concern over the recent period?

   III. Have you undertaken any institutional initiatives in recent years to improve your understanding of impacts of price formation, transmission and transparency on stakeholders in the food chain? Do these involve more than one ministry or units in a ministry, and if so which? These should include new working groups, new statistical units and special government offices and how they are administratively set up and operate. Any cross department activities in this area would be of particular interest.

   IV. Are there non-governmental institutions which are involved in the same activities? Please include trade unions, co-operatives, consumer groups or business associations.

   V. Please describe briefly statistical and analytical activities undertaken on a regular or ad hoc basis. Please include special studies and research projects.

2. Questionnaire on the role of institutions in providing food price formation data and analysis.

   NB: If you answer positively to question 1, please answer question 2 to 6. If not, please answer question 7. Answer questions 8 and 9 is all circumstances.

   1. Is there a monitoring entity of food prices, food price transmission or/and of contractual arrangements along the chain in your country? What is its name? When was it established?

   2. What is the rationale behind the existence of this monitoring entity? What does it add to what was done in the past on food prices in your country?

   3. Can you identify three key objectives of this institutional initiative? Have they been reached? Did you set up an assessment’s process? Can you describe experiences that were not as successful?

   4. Who are the “clients” of this monitoring entity: government, specific stakeholders along the chain, consumers? How do they use the tool to your knowledge?

   5. What is the cost of getting this monitoring entity up and running in terms of:

      o Involvement of ministries, statistical offices, stakeholders along the chain

      o Financial implications for its regular functioning

   6. What is the future planned for this entity?
7. If you don’t have such a monitoring entity, are food prices at different levels of the chain available publicly? Is food price transmission / transparency an important issue for your government, for consumers and for stakeholders along the chain? Is there a plan to set up a monitoring entity? Did you have one in the past and why did it stop operating?

8. What about the private sector: what is their demand for and willingness to provide greater transparency regarding price formation along the food chain according to your experience?

9. Have you identified impediments to price transmission along the food chain? Do you think that policies can help mitigating those impediments? In that context, have policy measures been taken to ensure that food markets are competitive and integrated in your country? What is your assessment of their effectiveness? Are there any policy related to relationships along the food chain in the pipeline?
ANNEX 2. ENTITIES THAT ARE MONITORING FOOD PRICE DATA

<table>
<thead>
<tr>
<th>Country</th>
<th>Entities that are following prices</th>
<th>which prices</th>
<th>Regular monitoring</th>
<th>Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td>Australia</td>
<td>Australian Bureau of Statistics, ABARES</td>
<td>farm gate and retail prices</td>
<td>for adhoc analysis</td>
<td>Following a period of high inflation rates - to monitor the evolution of prices at different levels along the food chain - to increase transparency along the food chain - to provide regular and objective information to market participants and consumers about the share of the different stakeholders along the chain in final food prices - to enable appropriate actions by competition authorities and legal services</td>
</tr>
<tr>
<td>Belgium</td>
<td>Belgian Price Observatory - 2009, part of the Institute for National Accounts (Ministry of Economy)</td>
<td>farm gate, processing and retail prices</td>
<td>Yes</td>
<td>- to monitor the evolution of prices at different levels along the food chain - to increase transparency along the food chain - to provide regular and objective information to market participants and consumers about the share of the different stakeholders along the chain in final food prices - to enable appropriate actions by competition authorities and legal services</td>
</tr>
<tr>
<td>Canada</td>
<td>Statistics Canada</td>
<td>retail prices</td>
<td>for adhoc analysis</td>
<td>- to provide regular and objective information about the food market</td>
</tr>
<tr>
<td>China</td>
<td>National Bureau of Statistics NBS, MOA, MOC, NDRC, quasi-public institutions and private consulting firms</td>
<td>processing and retail prices</td>
<td>Yes</td>
<td>- to monitor the evolution of prices of agricultural products at the agro-industry gate, on wholesale markets and at the retail level - to allow for more transparency along the food chain (aim of the Market Transparency Unit)</td>
</tr>
<tr>
<td>Chile</td>
<td>Office of Agricultural Studies and Policies (ODEPA), created in 1992</td>
<td>Processing, wholesale and retail prices</td>
<td>Yes</td>
<td>- to monitor the evolution of prices of agricultural products at the agro-industry gate, on wholesale markets and at the retail level - to allow for more transparency along the food chain (aim of the Market Transparency Unit)</td>
</tr>
<tr>
<td>Czech Republic</td>
<td>Czech Statistical Office (CZSO), State Agricultural Intervention Fund (SAIF), Ministry of agriculture (MOA)</td>
<td>farm gate, processing and retail prices</td>
<td>Yes</td>
<td>- to monitor the evolution of prices at different levels along the food chain</td>
</tr>
<tr>
<td>Country</td>
<td>Entities that are following prices</td>
<td>which prices</td>
<td>Regular monitoring</td>
<td>Purpose</td>
</tr>
<tr>
<td>---------</td>
<td>------------------------------------</td>
<td>--------------</td>
<td>--------------------</td>
<td>---------</td>
</tr>
<tr>
<td>Denmark</td>
<td>Department of Food and Resource economics (IFRO) at University of Copenhagen, Danish Competition and Consumer Authority (Ministry of Business and Growth)</td>
<td>farm gate, processing and retail prices</td>
<td>for adhoc analysis</td>
<td></td>
</tr>
</tbody>
</table>
| Estonia | TNS Emor, research company and University of Life Sciences (ULS) on contract with Ministry of Agriculture | farm gate, processing and retail prices | Yes | - to monitor the evolution of prices at different levels along the food chain  
- to increase transparency along the food chain  
- to provide regular and objective information to market participants and consumers about the share of the different stakeholders along the chain in final food prices |
| Eu | Food Price Monitoring Tool (FPMT) -2009 and Milk Market Observatory -2009, Eurostat | farm gate, processing and retail prices | Yes | Following 2009 dairy crisis (will be important after the expiry of the milk quota system)  
- to increase transparency along the food chain  
- to provide regular and objective information to market participants and consumers about the share of the different stakeholders along the chain in final food prices  
- to contribute to increasing pressure on stakeholders to speed up price transmission |
| Finland | Ministry of Agriculture and forestry, Statistics Finland | farm gate, processing and retail prices | Yes | - to monitor the evolution of prices at different levels along the food chain  
- to increase transparency along the food chain  
- to provide regular and objective information to market participants and consumers about the share of the different stakeholders along the chain in final food prices  
- to enable appropriate actions by competition authorities and legal services |
<table>
<thead>
<tr>
<th>Country</th>
<th>Entities that are following prices</th>
<th>which prices</th>
<th>Regular monitoring</th>
<th>Purpose</th>
</tr>
</thead>
</table>
| France       | Observatoire de la formation des prix et des marges des produits alimentaires - 2010 (Ministre chargé de l'agriculture et du Ministre chargé de la consommation) | farm gate, processing and retail prices margins                             | Yes                | - to provide regular and objective information to market participants and consumers about the share of the different stakeholders along the chain in final food prices  
- to describe margins for different actors along the chain                                                                                                                                                                                                                                                                                                                                                     |
| Greece       | the Price Observatory - 2009 (Ministry of Development and Competitiveness)                        | retail prices                                                                | Yes                | - to monitor the evolution of retail food prices  
- to increase transparency along the food chain  
- to provide regular and accurate information to market participants, consumers and policy makers about retail food prices (available on www.e-prices.gr)                                                                                                                                                                                                                                          |
| Hungary      | Hungarian Central Statistical Office (HCSO)                                                     | farm gate and retail prices                                                  | Yes                | farm gate and retail prices are available via  
http://www.ksh.hu/docs/eng/xstadat/xstadat_infra/e_qsm0005.html  
http://www.ksh.hu/docs/eng/xstadat/xstadat_infra/e_qsf005j.html                                                                                                                                                                                                                                                                                  |
| Indonesia    | Central Bureau of Statistics (BPS), Center for Trade Data and Information-Ministry of Trade, Food Security Agency, Directorate General of Processing and Marketing of Agric Product-Min of Agric | retail prices                                                                | Yes                | - to monitor the evolution of retail food prices  
- to provide regular and accurate information to market participants, consumers, private sectors, researchers and policy makers about retail food prices  
- to monitor the effectiveness of price stabilization policy and enable government to decide intervention policies                                                                                                                                                                                                                                      |
<table>
<thead>
<tr>
<th>Country</th>
<th>Entities that are following prices</th>
<th>which prices</th>
<th>Regular monitoring</th>
<th>Purpose</th>
</tr>
</thead>
</table>
| Ireland   | Central Statistics Office                                                | Farm gate, processing and retail prices                                      | Yes               | - to monitor the evolution of prices at different levels along the food chain  
- to increase transparency along the food chain  
- to provide regular and objective information to market participants and consumers about the share of the different stakeholders along the chain in final food prices  
Prices can be found at http://www.cso.ie/en/releasesandpublications/prices/ |
| Israël    | Central Bureau of Statistics (CBS), Ministry of Agric and Rural Development | processing and retail prices (mandatory prices for some basic food products) | Yes               | Following social protest in 2011 against high living costs  
- to monitor the evolution of prices at different levels along the food chain  
- to increase transparency along the food chain  
- to regulate some retail food prices: maximum consumer prices and selling prices to retailers and mandatory retail prices, and mandatory milk price for producers |
| Italy     | ISMEA-1965- Institute for Services on the Agricultural and Agrifood Market (Ministry of Agriculture) | farm gate, processing and retail prices                                      | Yes               | - to monitor the evolution of prices at different levels along the food chain  
- to increase transparency along the food chain  
- to provide regular and objective information to market participants and consumers about the share of the different stakeholders along the chain in final food prices  
- to improve relationship between different stakeholders of the chain and between the agro-food operators and banks and insurance companies  
Data, studies and analysis are available at www.ismeaservizi.it |
| Japan     | Statistics Department- Ministry of Agriculture, Forestry and Fisheries (MAFF) | farm gate, processing and retail prices of fruits and vegetables and fishery products | for adhoc analysis | - to monitor the evolution of prices and distribution costs at different levels along the food chain  
- to enable appropriate policy actions for improving the development of the food chain and of the wholesale market |
<table>
<thead>
<tr>
<th>Country</th>
<th>Entities that are following prices</th>
<th>which prices</th>
<th>Regular monitoring</th>
<th>Purpose</th>
</tr>
</thead>
</table>
| Korea   | Agricultural Outlook Center (since 1999) that depends of the Korea Rural Economic Institute (KREI) | farm gate prices of 35 agricultural products | Yes | - to monitor and assess the trends in agricultural prices  
- to provide short term estimates of prices based on the weather conditions, outputs and crop yields  
- to facilitate a wider use of the produced information, including assessments and estimates. |
| Latvia  | Latvian Institute of Agrarian Economics, Central Statistical Bureau | farm gate and retail prices | Yes | - to monitor and assess the trends in agricultural prices |
| Lithuania | AIRBC (Agricultural Information and Rural Business Centre, 2001), Statistics Department of Lithuania (SDL) | farm gate and retail prices | Yes | - to increase transparency along the Food chain  
- to provide regular and objective information to Market participants and consumers about the share of the different stakeholders along the chain in final Food prices  
- to improve relationship between different stakeholders of the chain |
| Mexico  | Sistema de Información Agroalimentaria y Pesquera (SIAP) SAGARPA’s specialized unit of data collection and analysis, Sistema Nacional de Información e Integración de Mercados (SNIIM), Instituto Nacional de Estadística y Geografía (INEGI). | farm gate, processing and retail prices | Yes | - to enable appropriate agricultural policy actions  
- to prevent price speculation and to measure inflation  
Data are available at http://www.siap.gob.mx/informacion-de-mercados/  
http://www.siap.gob.mx/optestadisticascon2012parcialesiacon-zip/  
http://www.economia-sniim.gob.mx/nuevo/  
<p>| Netherlands | Food price monitoring at LEI, Code of conduct of fair trade practises in 2013, Participate in European High Level forum on the food chain | farm gate, processing and retail prices for adhoc analysis | Food price monitoring available via <a href="http://www.agrimatie.nl/Default.aspx?subpubID=2424">http://www.agrimatie.nl/Default.aspx?subpubID=2424</a> |
| New Zealand | Statistics New Zealand, The Commerce Commission (only farm gate price of milk) | farm gate and retail prices | No | With the adoption of market economy and within the context of general competition law, such monitoring was not felt necessary. |</p>
<table>
<thead>
<tr>
<th>Country</th>
<th>Entities that are following prices</th>
<th>which prices</th>
<th>Regular monitoring</th>
<th>Purpose</th>
</tr>
</thead>
</table>
| Norway       | Statistics Norway, Norwegian Agricultural Economics Research Institute (NILF), Norwegian Agriculture Agency, Nielsen | farm gate, processing and retail prices               | for adhoc analysis | - to monitor the evolution of prices at different levels along the food chain  
- to increase transparency along the food chain  
- to provide regular and objective information to market participants and consumers about the share of the different stakeholders along the chain in final food prices |
| Poland       | Ministry of Agriculture and Rural Development, Central Statistical Office, the Agricultural Market Agency and the Institute of Agricultural and Food Economics – State Research Institute | farm gate, processing and retail prices               | Yes                | - to monitor the evolution of prices at different levels along the food chain  
- to increase transparency along the food chain  
- to provide regular and objective information to market participants and consumers about the share of the different stakeholders along the chain in final food prices  
- to increase competition  
- to improve the valorisation of the national production |
| Portugal     | Market Information System (SIMA, Ministry of Agriculture), Statistics Portugal (INE), PARCA (Platform for Monitoring Food Chain Relations), High Level Forum for a Better Functioning Food Supply Chain | farm gate, processing and retail prices               | Yes                | - to monitor the evolution of prices at different levels along the food chain  
- to increase transparency along the food chain  
- to provide regular and objective information to market participants and consumers about the share of the different stakeholders along the chain in final food prices  
- to increase competition  
- to improve the valorisation of the national production |
| Romania      | Farm Accountancy Data Network (FADN), Ministry of Agriculture and Rural Development                  | farm gate prices                                     | No                 | - to fulfill obligations as a Member State of the European Union regarding the communication of information relating to agricultural and food products market  
- to monitor the evolution of market prices of agricultural products |
| Slovenia     | Statistical Office, Market Information System of The Agency for Agricultural Markets and Rural Development (AKTRP, Ministry of Agriculture, Forestry and Food), "Code of good practice amongst stakeholders in the agri-food chain" 2011 | farm gate and retail prices                           | Yes                | - to monitor the evolution of prices at different levels along the food chain  
- to increase transparency along the food chain  
- to provide regular and objective information to market participants and consumers about the share of the different stakeholders along the chain in final food prices  
( Code of good practice amongst stakeholders in the agri-food chain" ) |
<table>
<thead>
<tr>
<th>Country</th>
<th>Entities that are following prices</th>
<th>which prices</th>
<th>Regular monitoring</th>
<th>Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td>South Africa</td>
<td>Food Price Monitoring Committee (FPMC) that is administered by the Agricultural Marketing Council (NAMC, created in 1996)</td>
<td>farm gate, processing and retail prices</td>
<td>Yes</td>
<td>FPMC, appointed in 2003 after sharp depreciation of the Rand and resultant spikes in food prices</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>- to monitor the evolution of prices at different levels along the food chain</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>- to increase transparency along the food chain</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>- to provide regular and objective information to market participants and consumers about the</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>share of the different stakeholders along the chain in final food prices</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>- to enable appropriate actions by competition authorities and legal services</td>
</tr>
<tr>
<td>Spain</td>
<td>The Food Prices Observatory - created in 2000, strengthened in 2008 (Ministry of Agriculture, Food and Environment (MAGRAMA))</td>
<td>farm gate, processing and retail prices</td>
<td>Yes</td>
<td>- to monitor the evolution of prices at different levels along the food chain</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>- to increase transparency along the food chain</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>- to provide regular and objective information to market participants and consumers about the</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>share of the different stakeholders along the chain in final food prices</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>- to enhance coordination, creating a most favourable atmosphere for discussion and cooperation</td>
</tr>
<tr>
<td>Sweden</td>
<td>Official Statistics</td>
<td>farm gate, processing and retail prices</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>Switzerland</td>
<td>Market Monitoring, Federal office for Statistics</td>
<td>farm gate, processing and retail prices</td>
<td>Yes</td>
<td>- to monitor the evolution of prices at different levels along the food chain</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>- to increase transparency along the Food chain</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>- to provide regular and objective information to Market participants and consumers along the</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>chain in final Food prices</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>- to describe margins for different actors along the chain</td>
</tr>
<tr>
<td>Country</td>
<td>Entities that are following prices</td>
<td>which prices</td>
<td>Regular monitoring</td>
<td>Purpose</td>
</tr>
<tr>
<td>--------------</td>
<td>--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
<td>------------------------------------------------------------------------------</td>
<td>--------------------</td>
<td>--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
</tbody>
</table>
| Turkey       | Turkish Statistical Institute, Turkish Grain Board (TGB), Turkish Sugar Authority (TSA), Meat and Milk Board (MMB), Monitoring and Evaluation Committee on Food and Agricultural Product Markets (secretariat at Ministry of Food, Agriculture and Livestock) | farm gate and retail prices, international prices                            | Yes                | - to increase qualified and diverse data to analyse and predict agricultural markets,  
- to contribute to production and consumption decisions through food chain,  
- to provide fast and reliable information to the decision makers  
- to analyse potential effects of market changes on food and agriculture commodity prices over the short and long term |
| United Kingdom | Office for National Statistics (ONS), Department for Environment, Food and Rural Affairs (DEFRA)                                                                                                                                 | farm gate, and wholesale prices and retail prices                            | Yes                | - to monitor the evolution of prices at different levels along the Food chain                                                                                                                            |
| USA          | The Bureau of Labor Statistics (BLS, US department of Labor), USDA Economic Research Service (ERS)                                                                                                                                 | farm gate, processing and retail prices                                      | Yes                | - to monitor the evolution of prices at different levels along the Food chain  
- to increase transparency along the Food chain  
- to provide regular and objective information to Market participants and consumers about the share of the different stakeholders along the chain in final Food prices |