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COMMISSION STAFF WORKING DOCUMENT

Market transparency in the EU's food supply chain

Accompanying the document

COMMISSION IMPLEMENTING REGULATION
amending Implementing Regulation (EU) 2017/1185 laying down rules for the application of Regulations (EU) No 1307/2013 and (EU) No 1308/2013 of the European Parliament and of the Council as regards notifications to the Commission of information and documents

{C(2019) 6908 final}

Contents

Acronyms

AMTF – Agricultural Markets Task Force

CAP – Common Agricultural Policy

EU – European Union

F&V – fruit and vegetables

FSC – food supply chain

GI – geographical indication

HVA – high value added

ISAMM - Information System for Agricultural Market Management and Monitoring

JRC – Joint Research Centre

LMRA – Livestock Mandatory Reporting Act

MIS – market information system

MS – Member State

MT – market transparency

SME – small and medium-sized enterprise

TFEU – Treaty on the Functioning of the European Union

US – United States

UTP – unfair trading practice

1 Introduction

1.1 Policy and legal background

Economic theory suggests that competitive markets require free and widely available information[1]. A market with a high level of free information availability is said to be a transparent market. The Commission currently collects and publishes market-relevant data from agricultural producers and some food industry operators in the EU's food supply chain (FSC). These data include price information (on a weekly or less frequent basis) and production information, such as planted areas and estimates of future planted areas, production levels and estimated production levels, quantities supplied, stocks, etc. (on a monthly or less frequent basis)[2]. While market and production data on agricultural products is widely collected and made publicly available by the Commission (and Member States (MSs)), less data are available on processed and traded products downstream in the chain. There are calls from many stakeholders in the FSC and from public authorities for increased levels of information at the different stages of the FSC[3], including from the European Parliament and from the Council of the European Union.

Developments in EU and world agricultural markets, as well as changes in the structure of the FSC and in the design and operation of the Common Agricultural Policy (CAP), have led, and will likely continue to lead, to an increasingly market-oriented agricultural sector. On average, the greatest share of EU agricultural producers' income comes from the market, rather than from public support[4]. International competition and changes in consumer demand are ongoing challenges for the EU's FSC as a whole. These developments in agri-food markets are also changing the role of public authorities that are responsible for market regulation. In this context, actionable information about the operation of the market is of increasing importance to agricultural producers and other operators in the FSC, regulators, and researchers focusing on FSC issues. There have also been calls for a more symmetric sharing of information along the FSC among some stakeholders to increase trust between operators at the different stages of the chain.

In December 2016 the Council of the European Union (EU) called on the Commission *'to address, in a reasonable timeframe and in a coordinated way, the issue of lack of transparency and information asymmetry in all levels of the food supply chain, where possible, including at consumers level'*. The Council also noted that *'in order to secure a better functioning food supply chain, it is crucial to reduce information asymmetry and increase market transparency, including at consumers level, in particular as regards timely information on prices or margins at every level of the food supply chain, where feasible, while minimizing administrative burden and costs'* and encouraged market observatories at

[1] Other characteristics of competitive markets include having a large number of buyers and sellers such that none is able to affect prices in the market, a homogeneous product, and full freedom of entry and exit of operators into the market. There are other assumptions that would need to apply under the theoretical case, such as behavioural aspects (full rationality of buyers, sellers, and consumers) and frictionless trade (zero transaction costs, such as through fully defined and protected property rights), etc.

[2] The availability of each of these types of data varies significantly by type of agri-food product.

[3] See, for example, Brooks J., 2018, Market transparency can contribute to a productive food system, http://europa.eu/!ww64Qn (pdf); McCorriston S., 2018, How price transparency affects markets for farmers, http://europa.eu/!xD46tY (pdf); OECD, 2015, Food price formation, http://oe.cd/2u2 (pdf), etc.

[4] EC, 2019, Farming income support, http://europa.eu/!Nx34kK.

the EU and national level to *'cooperate and exchange data in order to enhance market transparency and better assist farmers in making informed decisions'*[5].

In June 2016 the European Parliament called on *'on all stakeholders involved in food supply chain management to step up transparency in the overall food supply chain'* and *'for increased transparency and provision of information within the supply chain and for the strengthening of bodies and market information tools (…), with a view to supplying farmers and POs with accurate and timely market data*'[6].

In 9 April 2019 the Council, Parliament and the Commission made a joint statement, stressing that '*the transparency of agricultural and food markets is a key element of a well-functioning agricultural and food supply chain, in order to better inform the choices of economic operators and public authorities as well as to facilitate the understanding of operators on market developments'*. The Council and the Parliament encouraged the Commission *'to continue its ongoing work to enhance market transparency at EU level. This may include the strengthening of the work on EU market observatories and improving the collection of statistical data necessary for the analysis of price formation mechanisms along the agricultural and food supply chain*'[7].

In 2016 the Commission set up the Agricultural Markets Task Force (AMTF)[8], a group of twelve independent experts on agri-food markets, tasked with providing recommendations on how to enhance the position of agricultural producers in the FSC, in view of the Treaty on the Functioning of the European Union (TFEU) objectives for the agricultural sector. Among a number of other recommendations made, the AMTF recommended the EU to act to increase market transparency (MT) in the FSC, with the objective of fostering competition along the chain. The AMTF defined MT as "*the availability of relevant market information (e.g. concerning prices, weather, production, trade, consumption and stocks) for all market participants*'.

In particular, the AMTF report recommended that the Commission:

- expand mandatory price reporting to cover information gaps in the FSC, especially in the meat, fruit and vegetables (F&V) and dairy sectors;
- collect price data in a timely and standardised manner; and
- disseminate the data in a duly aggregated form so that the confidentiality of the operators that are supplying the data is ensured.

The AMTF report also recommended that the Commission:

- consider whether consumption data and producers' input prices could be integrated into EU information systems (see Box A);
- create a forum for exchange of best practices between MSs; and
- support agricultural producers and producer organisations to make better use of existing data.

[5] Council, 2016, Strengthening farmers' position in the food supply chain, http://europa.eu/!Yc83tK (pdf).

[6] EP, 2016, Unfair trading practices in the food supply chain, http://europa.eu/!GG99Wn.

[7] Council, 2019, Joint statement on transparency of the agricultural and food markets, https://europa.eu/!FC36bm.

[8] AMTF, 2016, Improving market outcomes, http://europa.eu/!fQ94cP (pdf).

The AMTF also recommended that the calculation of a 'food euro' for all major food products (akin to the 'food dollar'[9]) could be useful at the level of the EU and at the level of EU MSs. The 'food euro' would offer an accessible representation of what share of each euro spent on food in the EU goes to each stage of the FSC, and how that share evolves over time, as well as expert explanation for why such changes may be taking place. Work on this issue is being conducted by the Commission, in consultation with stakeholders, in parallel to the initiative to improve the FSC.

The Commission's Work Programme for 2018[10] stated that '*the Commission will propose measures to improve the functioning of the food supply chain to help farmers to strengthen their position in the market place and help protect them from future shocks'.* The proposals by the Commission for the future CAP post-2020 list as part of their objectives to ensure a fair income to farmers, to increase competitiveness and to rebalance the power in the food chain. The Communication on the Future of Food and Farming confirms market orientation as a key element of the CAP, adding that *'the most important role for the policy is therefore to help farmers anticipate developments in dietary habits and adjust their production according to market signals and consumers' demands. (…) [and] furthermore address citizens' concerns regarding sustainable agriculture production'*[11]. The Communication Towards a Stronger International Role of the Euro states that *'the Commission will also favour the recourse to futures markets and contracts in euro (e.g. through awareness raising and training) and increased market transparency for agricultural and food commodities in euro'*, adding that '*an increasing number of price references expressed in euro are now published through the EU market observatories since they were established in 2014* (…)' and that '*this will be further consolidated with the proposal ensuring more market transparency, planned for adoption in 2019'*[12].

The basis for the proposal to increase MT can be found in the Common Market Organisation (CMO) Regulation[13], which describes the rules for the operation of the markets in agricultural products and is one of the legal acts implementing the requirements for the agricultural sector that are set out in the TFEU. The CMO Regulation includes provisions on MT, which provide the legal framework for the existing systems of MT for agricultural product markets at EU level. Article 223 of the Regulation states that the Commission may adopt the necessary measures for the communication of data by undertakings and MSs, including with the aim of improving MT and monitoring, analysing and managing the market in agricultural products[14]. A delegated[15] and an implementing[16] regulation currently determine these data communication requirements.

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[9] USDA, 2018, Food dollar series, http://www.ers.usda.gov/data-products/food-dollar-series/.

[10] EC, 2017, Agenda for a more united, stronger and more democratic Europe, http://europa.eu/!Qw77NU.

[11] EC, 2017, The future of food and farming, http://europa.eu/!Nf73fc.

[12] EC, 2018, Towards and stronger international role of the euro, http://europa.eu/!XP96rF.

[13] Regulation (EU) 1308/2013, https://eur-lex.europa.eu/legal-content/EN/ALL/?uri=CELEX:32013R1308.

[14] 'For the purposes of applying this Regulation, monitoring, analysing and managing the market in agricultural products, ensuring market transparency, the proper functioning of CAP measures… the Commission may, in accordance with the procedure referred to in paragraph 2, adopt the necessary measures regarding communications to be made by undertakings, Member States and third countries… The information obtained may be transmitted or made available… subject to the protection of personal data and the legitimate interest of undertakings in the protection of their business secrets, including prices'.

[15] Regulation (EU) 2017/1183, http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:32017R1183.

[16] Regulation (EU) 2017/1185, http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:32017R1185. The implementing regulation lists in its annexes the products for which price and other information is required,

As such, this report sets out analysis focusing on the current level of MT in the FSC, its effects on agricultural producers and other FSC operators, the strengths and weaknesses of the current system of data collection and dissemination, and on how this system may usefully be improved through a targeted intervention. The report also considers the challenges presented by varying the level of information availability in the FSC, notably on the costs that increasing MT may entail (such costs include, for example, the costs of data collection and reporting by operators, and the possible anti-competitive effects that increased MT may have where there is unequal market power in the FSC).

Given that the proposal has a limited and targeted scope with no significant expected economic, environmental or social impacts, a full-fledged impact assessment was not required. However, this staff working document presents the analysis, including an assessment of costs, and the stakeholder consultation that prepared and preceded the proposal.

1.2 Types of market information systems

There are frequently varying interpretations of what is meant by 'market transparency'[17], and these are reflected in the variety of market information systems (MISs) that exist. Some MISs have a greater focus on providing relatively high-frequency information on market *operation* to FSC operators, while others aim at providing a more *structural* view of the FSC (and publish information on a less frequent basis)[18].

Under the heading of MT there are several types of information that can qualify as relevant for a MIS to focus on. These can be broadly divided into types of information pertaining to market operation and pertaining to market structure. Price formation[19] will result jointly from market operation and market structure conditions, but the process by which a public MIS aims to increase efficiency in price formation is different according to whether it has a greater focus on market operation or market structure. There are many elements that can influence how prices are formed, both conjunctural and structural, and one of the key challenges for existing and future MIS is to go beyond simple price reporting ('*what* the prices are') towards decomposing the reasons behind price developments ('*why*

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including frequency of the data and other determinations. The regulation also sets out the procedure for reporting by MSs to the Commission, measures to guarantee data integrity over time, a clause on confidentiality of personal data and data aggregation to guarantee anonymity, and related provisions.

[17] Ménard C., 2018, Market transparency in food supply chain, http://doi.org/10.2760/285157; see also the definition of MT by the AMTF ('the availability of relevant market information (e.g. concerning prices, weather, production, trade, consumption and stocks) for all market participants'), footnote **Error! Bookmark not defined.**.

[18] Generally, however, most MIS are hybrids seeking to provide both market-relevant information and clarify structural issues in the FSC. The difference being primarily on the level of emphasis placed on each of these objectives.

[19] Price formation is the process that leads to an equilibrium of supply and demand of a product; at the equilibrium price the volume that is offered equals the volume that is demanded (at a higher price more suppliers are willing to sell the good, but fewer buyers are willing to pay the price, while at a lower price more buyers are willing to buy the product, but fewer suppliers are willing to sell.) Price formation in spot markets is informed by available price benchmarks, which are in turn determined using price signals from other observable transactions in spot markets (including auctions) and price signals from futures markets or from forward contracts. The ability to observe these price signals is influenced by the way this information is made available by price reporting agencies. See: Baffes J., 2018, World Bank experience with commodity price monitoring, http://europa.eu/!rH79cK (pdf).

prices are what they are'). This was a key outcome of the Commission's workshop on market transparency where a main message from technical experts and stakeholders was that there is a need for more structural information and for data collection that goes beyond farm-gate and consumer prices[20]

1.2.1 Market operation information

Those MIS that offer market operation data with short time delays aim to improve the fluidity of the FSC, based on the principle that better-informed decisions are likely to be decisions that are more economically efficient. High-frequency and detailed data are expected to allow agricultural producers and other market operators to make better marketing, production and investment decisions[21].

Market operation information thus refers to the type of data that operators in any market will make use for their production, marketing and investment decisions (abstracting from how that particular market is structured – see below). A key variable here is price data for the operators own products, as prices in well-functioning markets offer a synthesis of overall market conditions.

There are other indicators of value beyond prices, however. Other elements include quantity-related data[22], prices in other markets[23], input prices and costs[24], margins, general economic conditions[25], or operating conditions throughout the business cycle[26]. As different indicators of value provide different types of information to market operators, it is important to consider not only price data but also other dimensions: for example, while a the production of a product may have low yields or low production volumes, the product may command a premium in the market place or may be experiencing high demand growth. Changes in the prices for a product alone may mask these underlying dynamics[27]. Box 1 shows an example of a MIS with a significant focus on market operations aspects of the FSC. Box 2 provides an illustration of the different elements that can be considered in the analysis of a market (in this example the dairy market).

1.2.2 Market structure information

MIS that offer structural information about the FSC also seek to improve the fluidity of the FSC, but here with a greater focus on promoting evidence-based dialogue and increasing trust between operators in the FSC. The very nature of the FSC makes it likely that there is, in the absence of public

[20] Ménard C., 2018, Market transparency in food supply chain, http://doi.org/10.2760/285157.

[21] For example, these decisions include coordinating between quantity and quality dimensions of production (to invest in low cost agri-food production, or in higher value-added agri-food with quality labelling).

[22] Such as volumes of production, stocks and quantities traded (including imports and exports).

[23] Prices developments in linked markets, (such as prices downstream for further processed products, down to consumer level, or prices in international markets); and prices in competing markets (for substitute products); or exchange rates (prices of foreign currencies).

[24] Such as energy prices and transport prices (including too the input prices for downstream operators' inputs), operational costs, credit costs, capital costs, land costs, etc.

[25] Such as GDP growth rates in the relevant markets for the operator's products, inflation and unemployment rates, etc.

[26] For agricultural producers, notably, weather conditions.

[27] Brooks J., 2018, Market transparency can contribute to a productive food system, http://europa.eu/!ww64Qn (pdf).

information systems, a structural asymmetry of information between the agricultural sector and other parts of the FSC[28]. In an economic sense, a higher level of trust is expected to result in lower transaction costs between operators (as it becomes easier to establish a basis for agreement between operators, including in contractual relationships)[29]. These systems often use rich datasets, provide significant amounts of interpretation of the data, and offer platforms for stakeholder to discuss the information they make available.

Market operation information on its own is thus not enough to build a full picture of a market; the structure of that market also matters[30]. The need to observe not only price developments (and related price and quantity determinants of prices) has been well established:

"A better understanding of price formation (and relevant costs incurred at every step of the food supply chains) is crucial (…). in particular, price formation should be assessed against the backdrop of the structure of the different supply chains"[31].

Market structure information refers to the way a market is organised, how the operators in that market interact between each other, and how these elements change over time. The type of variables that are of relevance to describe market structure include the number and size of the buyers and sellers in the market and in related markets (indicators of the level of competition in the market), the types of contracts in use (and the way in which those contracts are agreed upon between the parties)[32], the barriers to market development (such as to the development of futures markets, access to credit or to insurance), the ownership of producing units by economic groups, or private label penetration in the market. As market structure affects market operation, including price formation, MT that seeks to improve the evidence base for agricultural producers and other operators in the FSC, for regulators and other public authorities, and for the research community should increase the availability of information on structural aspects of the FSC[33]. Box 3 shows an example of a MIS with a significant focus on structural aspects of the FSC.

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[28] '…information available on agricultural markets make them relatively transparent because they are highly competitive while food markets are much less transparent because they are markets with high concentration ratio and involve information along intermediate steps of the supply chain that remain into private hands and are hardly accessible' (Ménard, C., 2018, Market transparency in food supply chain, http://doi.org/10.2760/285157).

[29] Cook M.L. & Iliopoulos C., 2016, Generic solutions to coordination, http://doi.org/10.3920/JCNS2016.x001.

[30] Ménard C., 2018, Market transparency in food supply chain, http://doi.org/10.2760/285157; Bardaji I. et al., 2016, State of play of risk management tools, http://www.doi.org/10.2861/305797.

[31] EC, 2009, Competition in the food supply chain, http://europa.eu/!ym48vu. In the text, this quote is followed by the recommendation that: 'Price formation follows complex patterns in all supply chains. Transparent information on the structure of price formation should be further gathered by the Commission and Member States' Authorities in order to have a better understanding of the mechanisms and criteria currently used to determine food prices. This exercise would also allow all the stakeholders involved in the supply chain, as well as consumers, to have a more transparent overview of price formations mechanisms'.

[32] For example, in the USA, the USDA maintains the Swine Contract Library, where it makes publicly available information on contract terms for swine (including forward contracts), with the objective *"to aid in the price discovery process and provide equal access to market information for all market participants"*. This information is also used by researchers, for example to assess how contract terms may be setting incentives or disincentives to innovation in the swine sectoral FSC. Reporting on such contracts is mandatory, and the USDA publishes information on contracts on a monthly basis. The Library is available at: https://www.gipsa.usda.gov/psp/scl.aspx.

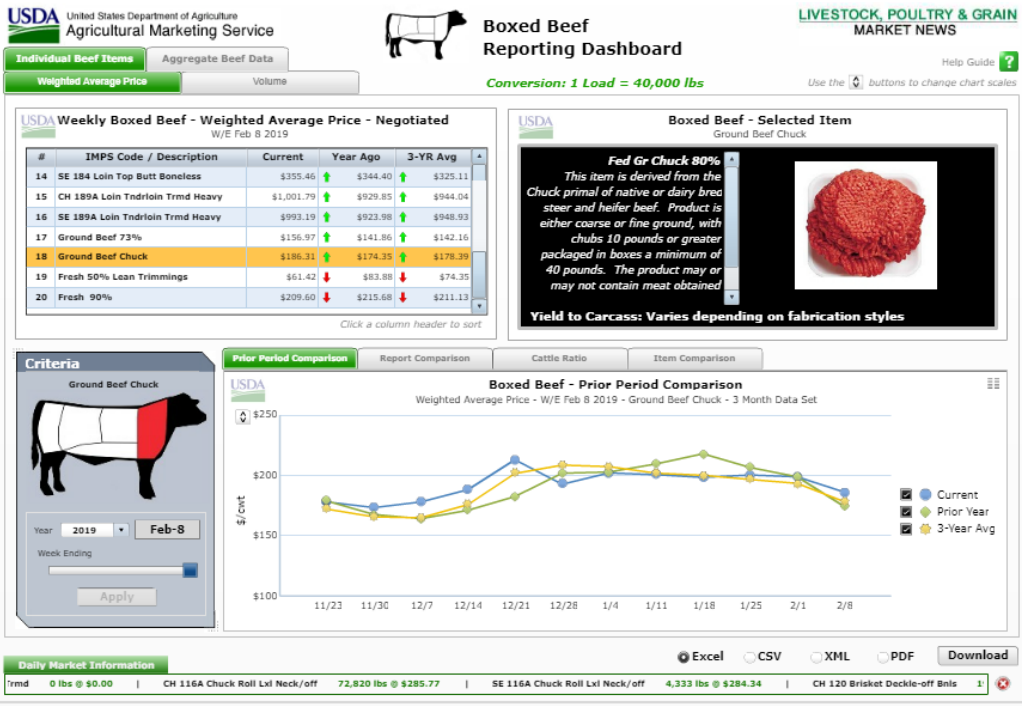
[33] McCorriston S., 2018, How price transparency affects markets for farmers, http://europa.eu/!xD46tY (pdf).

Box 1 - Livestock Mandatory Reporting Act (USA), focus on high frequency data reporting

This MIS was developed following the observation that over time fewer data on market transactions was available to be published, as bilateral contracting and vertical integration (ownership of several production stages of the FSC by the same entity) were replacing the model of open market transactions for several key agricultural products in the USA As a consequence there were growing concerns about price reporting, price discovery, and efficient transmission of market signals in the USA's livestock and meat sector. In 1999 the USA introduced the Livestock Mandatory Reporting Act (LMRA)[34], which went into effect in 2001. The act is meant to address the lack of market information that was available to livestock producers – at a time when downstream operators realised strong margins and there was a record high farm-to-retail price spread[35] that raised suspicions of non-competitive behaviour in the meat-processing sector[36]. According to the US' Secretary of Agriculture, the rationale for introducing the act was the 'need to ensure that small farmers and ranchers have a full and fair opportunity to compete in an increasingly concentrated agricultural economy. This new mandatory price reporting program will help producers by making the market more transparent, giving them better information about what is happening in the marketplace'[37].

The LMRA authorised the US Department of Agriculture (USDA) to require federally inspected slaughterhouses (that slaughter more than 100,000 hogs, 125,000 cattle, or 75,000 lambs per year) and importers (with annual average imports of at least 5,000 metric tons of lamb) to report their transactions two (cattle, lambs, boxed beef cuts) to three times per day (swine cuts). The act obliges the slaughterhouses in particular to report detailed price and quantity information. This is something that slaughterhouses had done already on a voluntary basis, but only for negotiated spot trade information; as more transactions were carried out under marketing arrangements where little information and no final purchase prices were publicly disclosed, it had become more difficult for producers to determine the actual prevailing purchasing price for livestock[38]. Regarding enforcement, the act stipulates that refusal or failure to report the information on time or to misreport it results in a civil penalty of not more than USD 10,000 for each violation. It also requires a quarterly audit and reviews. To preserve confidentiality of individual slaughterhouses, the act also stipulates that information will be published only if (a) three slaughterhouses report 50%of the time, (b) no single slaughterhouses provides more than 70% of the information, and (c) no single reporting slaughterhouses may be the sole reporting entity from an individual report more than 20% of the most recent sixty-day period[39].

Example of beef dashboard based on comprehensive USDA data collection on prices, by quality[40]



[34] USDA, 2019 (and http://

[35] A high farm low and retail prices

[36] Azzam A., 2 '. et al., 2012, Procu 2001, Strategic res

[37] Wachenhei agr.1010.

[38] Azzam A., 2003, Market transparency and market structure, http://doi.org/10.1111/1467-8276.00127; Njoroge K., 2003, Information pooling and collusion, http://doi.org/10.2202/1542-0485.1025; Wachenheim C.J. & DeVuyst E.A., 2001, Strategic response to mandatory reporting, http://doi.org/10.1002/agr.1010.

[39] Azzam A., 2003, Market transparency and market structure, http://doi.org/10.1111/1467-8276.00127; Wachenheim C.J. & DeVuyst E.A., 2001, Strategic response to mandatory reporting, http://doi.org/10.1002/agr.1010.

Box 2 - Market operations: elements for the economic analysis of a sector (example from the dairy sector)[41]

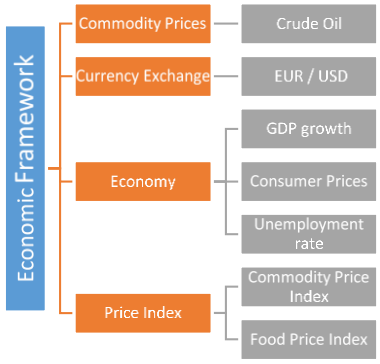


Figure 1 - General Economic Data

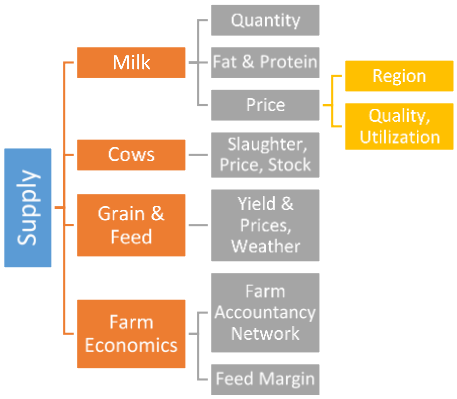


Figure 2 - Dairy Farming Data

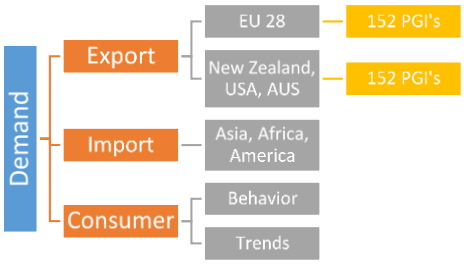


Figure 3 - Dairy Retail & Consumer Data - Demand

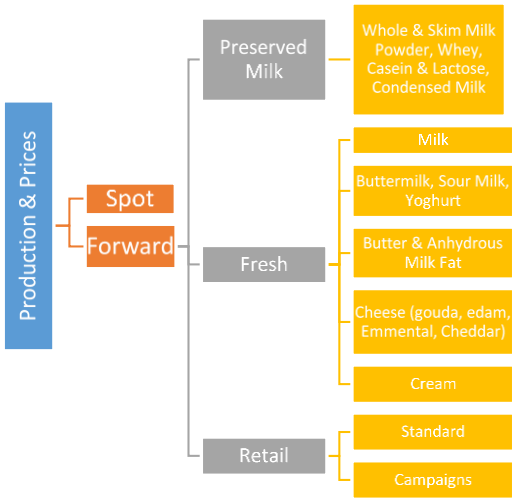


Figure 4 - Dairy Retail & Consumer Data – Supply

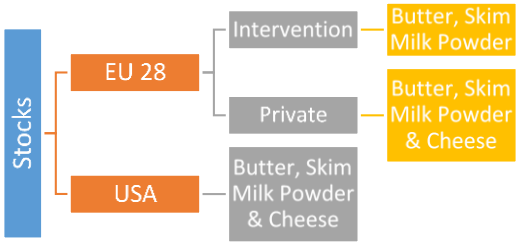


Figure 3 – Stocks

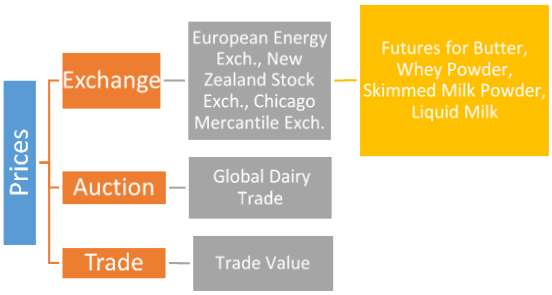


Figure 4 - Price Indicators

Figure 5 - Price Indicators (forecast)

[40] https://mpr.datamart.ams.usda.gov/amsdashboard/boxed_beef/BoxedBeef_Dashboard_Option_1.html.

[41] Adapted from Hildebrandt P., 2018, Dairy market data. http://europa.eu/!PU43WH (pdf).

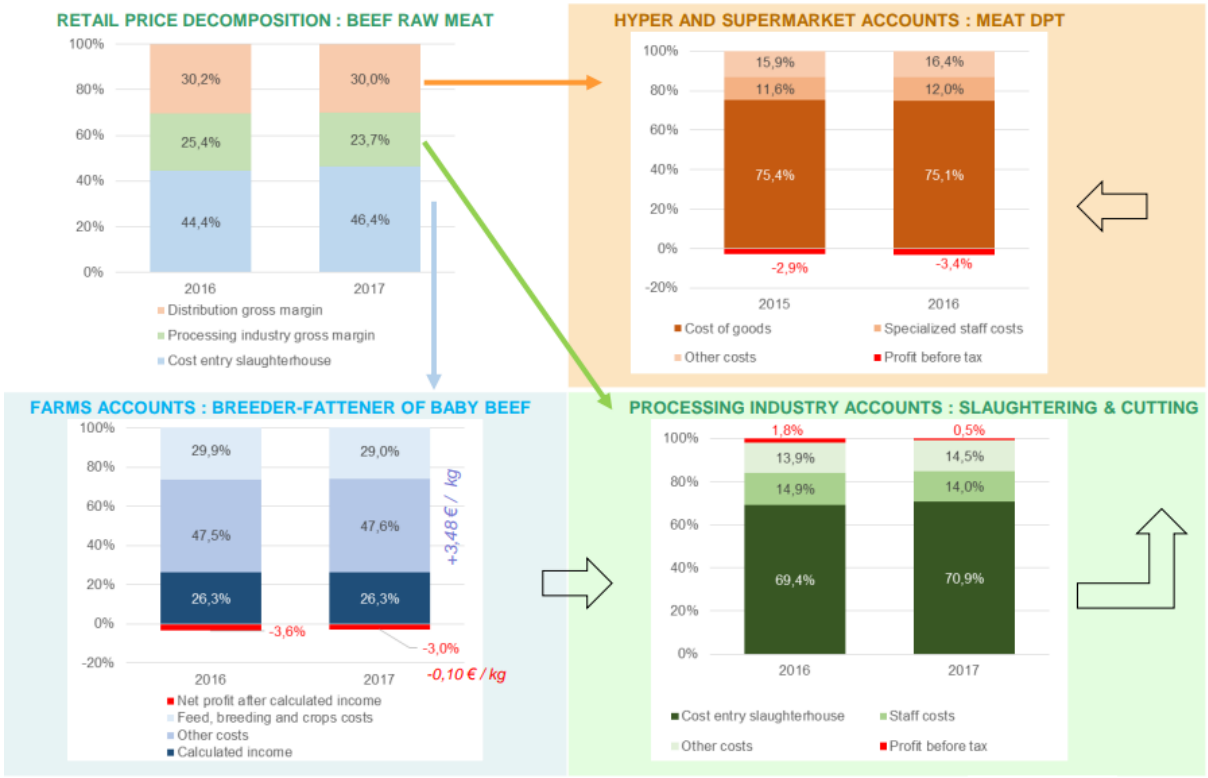
Box 3 - Observatoire de la formation des prix et des marges (France), focus on structural information

The French 'Observatory of prices and margins in the food chains'[42] was created by law in 2010 with the objective of measuring and explaining the differences observed in the value accruing to each stage in the FSC and, on this basis, to produce and disseminate factual information, with a view to improve trust between the different stakeholders in the FSC (also see section 6.1.1.5).

Among the issues that are investigated and reported on by the Observatory are the divergences in price variation between upstream and downstream stages of the FSC, the sharing of value between stages in the FSC for different sectors, market concentration at retail level, and regulatory aspects. The issues to be studied by the Observatory are defined by a steering committee that is presided by an academic and includes members from government, stakeholders in the FSC (including consumer groups), and technical experts. The technical work is managed by FranceAgriMer, a public body tasked with the implementation of government policy in the area of agriculture and fisheries.

The Observatory collects prices at retail level for an extensive list of agri-food products and disaggregates these prices upwards into the FSC into gross and net margins for the agricultural, processing and retail stages (including input costs and other costs at each stage; excluding food services)[43]. The following figure illustrates the type of output the Observatory publishes, showing, for example, that in 2015 and 2016 profits before tax were negative in the retail sector for meat (one possible explanation being that retailers often use meat products as a 'loss leader', a product sold at a loss in order to attract customers into shops).

Prices and margins in the French beef meat sector (2018 annual report)



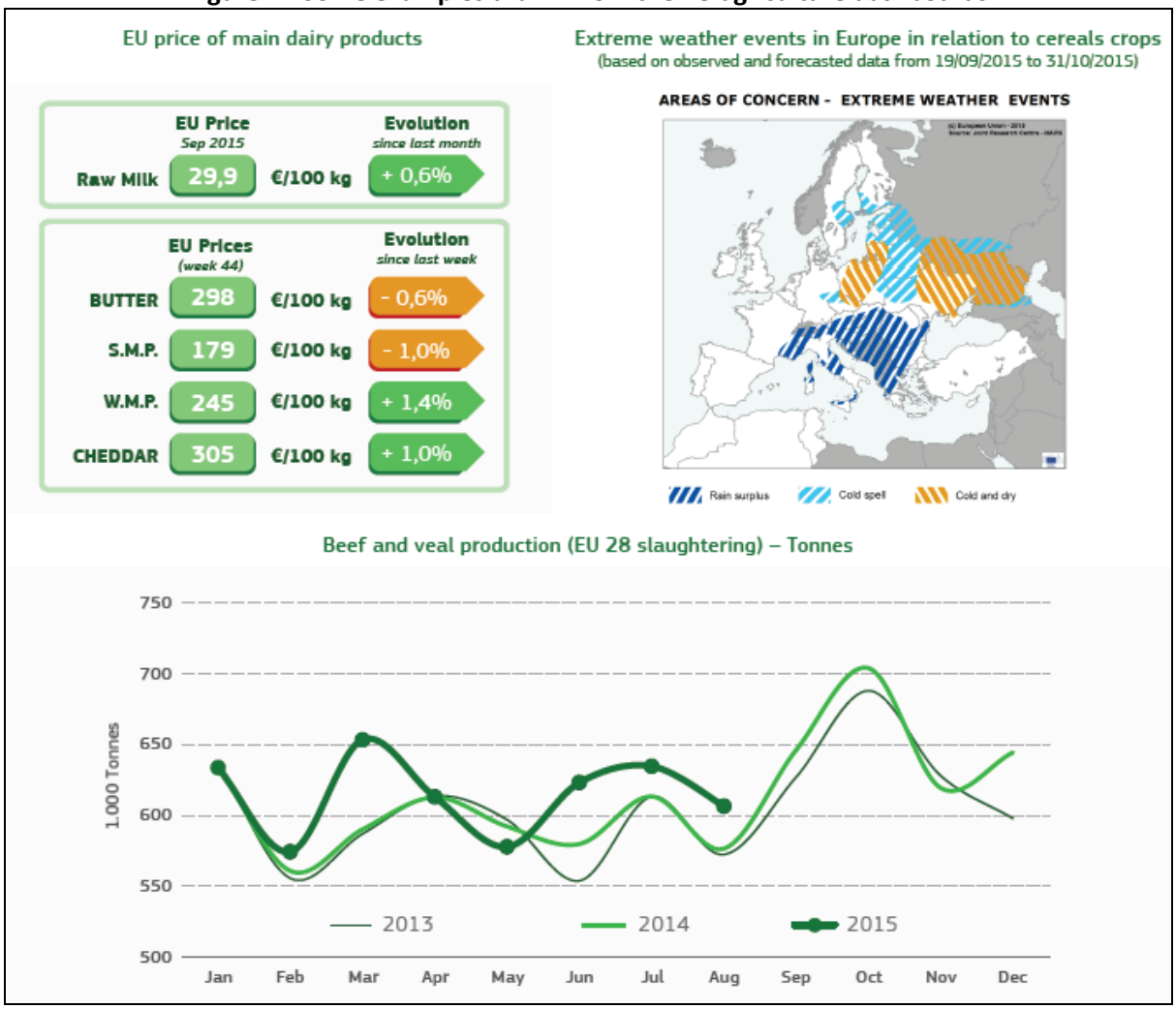
[42] FranceAgriMer, 2019, Observatoire de la formation des prix, http://observatoire-prixmarges.franceagrimer.fr.

[43] Testut-Neves M., 2018, The French Observatory of prices and margins, http://europa.eu/!Uk89WD.

2 The EU's Market Information Systems

The Commission's information systems disseminate agri-food market information, analysis and forecasts to the public at large and to stakeholders in the FSC, including agricultural producers and other market participants. The EU agriculture dashboards[44] offer a web-based, single-page overview of all available and most recent EU market data for various sectors, with more detailed data easily accessible through links. The dashboards have been well received and are extensively used by stakeholders (with several stakeholders reporting making use of the dashboards in their responses to the questionnaire and in various position papers, see Annex IV). Among the stated aims of the EU agriculture dashboards are to provide agricultural producers and other stakeholders in the FSC the information in a centralised and clear manner, and to assist them in making informed choices, including on how to better deal with volatility in agricultural markets and to better plan their production, marketing and investment decisions.

Figure 1 - Some examples drawn from the EU agriculture dashboards



The Commission is currently developing a tool to improve the data usability compared to the current systems, including improved data visualisation and the possibility for raw data downloads: the Agri-food data portal[45]. In terms of market data specifically, the Agri-food Data Portal currently covers the pig meat sector, cereals, and oilseeds and protein crops, with the beef and rice sectors under development. More sectors will follow, as the portal will be the single entry point for all relevant agri-food market data for the Commission.

[44] EC, 2019, Agricultural markets: dashboards, http://ec.europa.eu/agriculture/dashboards_en.

[45] EC, 2019, Agri-food data portal, http://agridata.ec.europa.eu/extensions/DataPortal/home.html.

The portal also includes data on tariff rate quotas. It is expected that the Agri-Food Data Portal will reduce time-to-publication for some of the data, as certain procedures will be automatized.

The EU market observatories[46] provide more in-depth information on market developments, and include an important component of stakeholder engagement, notably in frequent meetings with representatives of the various stages of the FSC and of civil society organisations to discuss ongoing market developments and perspectives for the market. To date four market observatories have been set up: for milk, meat products, sugar, and crops.

The EU agricultural markets and prices[47] webpage offers extensive analyses by the Commission based on public and private data, as well as expert input. Several reports on key issues of interest to agricultural markets are published throughout the year, including short- and medium-term outlooks.

The Commission has also set up the Food Price Monitoring Tool (FPMT)[48] to observe developments of food prices over time at the level of agricultural producers, processors and consumers. At present fifteen supply chains are covered. There are also attempts at analysing price transmission in the different sectors using the data available (experimental at this stage)

The rationale for public sector intervention to increase market transparency typically rests on the notion that significant asymmetries in a market constitute a type of market failure[49]. Public MISs seek to correct this under-provision of information through the market, so as to increase overall social welfare or the welfare of certain groups that enjoy specific legal protections under certain conditions (as is the case of agricultural producers or of consumers in the TFEU)[50]. In some cases, the public MIS is funded by a specific levy, compulsory to all stakeholders, to overcome coordination issues and address possible free rider behaviour.

Besides MSs and EU MISs, there exist a number of private data services and market intelligence companies that collect market information from private and public sources but, for the mostly part, sell it to their clients. There are also data that are publicly available coming from private sources, such as sectoral associations or others (for example, some slaughterhouses publish their buying prices to inform suppliers).

The academic literature identifies four main reasons for public administrations to design and develop public MISs[51]:

1. Improving efficiency in the FSC through better decision-making by operators;
2. Increasing trust between operators by offering a common, independent and factual basis for stakeholder dialogue on FSC developments;
3. Rebalancing bargaining power of smaller operators in the FSC through reductions in information asymmetries along the FSC[52];

[46] EC, 2019, EU Market Observatories, http://ec.europa.eu/agriculture/market-observatory_en.

[47] EC, 2019, Agricultural markets and prices, http://ec.europa.eu/agriculture/markets-and-prices_en.

[48] EC, 2019, Food Price Monitoring Tool, http://europa.eu/!wn97tc.

[49] Market failures can be broadly classified into four types: natural monopolies, externalities, public goods and asymmetric information (OECD, 2001, Effects of regulatory reform, http://oe.cd/2v7).

[50] TFEU Art. 39 (1): 'The objectives of the common agricultural policy shall be: (a) to increase agricultural productivity by promoting technical progress and by ensuring the rational development of agricultural production and the optimum utilisation of the factors of production, in particular labour; (b) thus to ensure a fair standard of living for the agricultural community, in particular by increasing the individual earnings of persons engaged in agriculture; (c) to stabilise markets; (d) to assure the availability of supplies; (e) to ensure that supplies reach consumers at reasonable prices'. Art. 40: 'The common organisation shall be limited to pursuit of the objectives set out in Article 39 and shall exclude any discrimination between producers or consumers within the Union'.

[51] Oosterkamp E.B. et al., 2012, Food price monitoring, http://library.wur.nl/WebQuery/wurpubs/fulltext/264471.

[51] Staatz J. et al., 2014, Measuring the impact of Market Information Systems. http://doi.org/10.1684/agr.2013.0631.

4. Improving policy-making and public enforcement through an expanded evidence base.

At EU level, these reasons are framed by the existing objectives for the Common Agricultural Policy, as well as by the objective of protecting and developing the internal market for agri-food products, as established in the TFEU. Regulation (EU) 1308/2013[53], defines the objectives for EU action on the collection of market data (Art. 223 (1)):

"For the purposes of:

- applying this Regulation,
- monitoring, analysing and managing the market in agricultural products,
- ensuring market transparency,
- [ensuring] the proper functioning of CAP measures,
- checking, controlling, monitoring, evaluating and auditing CAP measures, and
- complying with the requirements laid down in international agreements concluded in accordance with the TFEU, including notification requirements under those agreements,

the Commission may, in accordance with the procedure referred to in paragraph 2, adopt the necessary measures regarding communications to be made by undertakings, Member States and third countries. In so doing, it shall take into account the data needs and synergies between potential data sources'.

These aims can be broadly divided into two types: aims that contribute to a better functioning of the FSC (by the effect that market transparency has on the operation of undertakings in the FSC); and aims that contribute to an effective work by public authorities.

As such, EU-level MISs, among others:

1. Guarantee a minimum common level of availability of information across the EU, through the Commission's data collection activities;
2. Support a minimum common level of access to that information across the EU, through the Commission's data communication activities;
3. Support policy-making and the monitoring and enforcement of legislation in the areas of agriculture and of the FSC more generally.

The EU's MISs therefore contribute to levelling the playing field across the single market for agri-food products for all FSC operators, with benefits for competition between different types of players in the market[54]. This minimum common level of transparency offers advantages in particular to agricultural producers and other smaller operators downstream in the FSC (which likely have fewer resources to acquire privately held market data). More generally, MT can facilitate the EU objectives as defined in the TFEU by increasing production efficiency (*'to increase agricultural productivity')*; supporting increased demand for

[52] Bargaining power can be defined as the ability to obtain a concession from another party in a specific negotiation by threatening to impose a cost, or withdraw a benefit, if the party does not grant the concession, while market power can be defined as the more general ability of an operator to influence and maintain prices at a different level from the one that would prevail on a competitive market (Sorrentino A. et al., 2018, Market power and bargaining power, http://doi.org/10.30682/nm1804b). Both bargaining power and market power describe situations where an operator has the ability to take certain actions, not whether these actions in fact take place and the power is used abusively. Abuses of bargaining power could result in the imposition of UTPs on a weaker counterparty; abuses of market power could lead to collusion. For example, differences in the price transmission along the FSC can be indicative of abuses of market power, but can also be due to other types of causes, which motivates calls by some stakeholders for better structural data to understand the functioning of FSCs (see section 4).

[53] Regulation (EU) 1308/2013, http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:32013R1308.

[54] TFEU Art. 43(4) states that the common organisation of the markets should ensure 'conditions for trade within the Union similar to those existing in a national market'.

agricultural products (*'ensure a fair standard of living for the agricultural community'*); reducing volatility (*'stabilise markets')*; improving the matching of supply and demand (*'assure the availability of supplies'*); and by stimulating innovation, increasing production volumes, and creating competitive pressures that can lead to lower prices (*'ensure that supplies reach consumers at reasonable prices'*). These benefits are further detailed in section 4.

The MT situation in the EU varies by sector of the FSC and by MS (see Annex X). Still some general observations are possible[55]:

1. While there is information at both ends of the FSC (agricultural producer and consumer), there is little information at the intermediate stages, including on some inputs and on costs (the so-called 'black box' of the FSC)[56];
2. There is a wide variety of MS and regional approaches to MISs, with the result that depending on where agricultural producers and other operators are located within the EU they will have access to different levels of MT;
3. The degree of MT at the EU level varies between FSC sectors. Still, information is generally not available beyond first stage processing (and, even then, only to a limited level of detail beyond agricultural producer level).

The overarching system for data collection on the FSC at EU level for agricultural producers and first-stage processing is established in the Implementing Regulation (EU) 2017/1185 (the so-called 'ISAMM regulation')[57], which has as its basic act Regulation (EU) 1308/2013 (the so-called 'CMO Regulation')[58]. Data collected is then, together with other available data, reported through the Commission's own communication platforms for agri-food markets, in particular through the EU agriculture dashboards[59], EU market observatories[60], and EU agricultural markets and prices[61]. Figure 2 shows an example of an existing dashboard, for the dairy sector. The system is frequently used by MSs and by stakeholders in the FSC (see Annexes III and IV, respectively).

[55] Baltussen W. et al., 2019, Monitoring of prices and margins, http://doi.org/10.2760/197814; AMTF, 2016, Improving market outcomes, http://europa.eu/!fQ94cP (pdf).

[56] There is also little information on input prices to agriculture in the EU's MIS. Haniotis T., 2018, Market transparency in the EU, http://europa.eu/!MH34Jp (pdf).

[57] ISAMM, the Information System for Agricultural Market Management and Monitoring, is the data collection IT support system for the CAP (Regulation (EU) 2017/1185, http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:32017R1185).

[58] Regulation (EU) 1308/2013, http://eur-lex.europa.eu/legal-content/EN/ALL/?uri=CELEX:32013R1308.

[59] EC, 2019, Agricultural markets: dashboards, http://ec.europa.eu/agriculture/dashboards_en.

[60] EC, 2019, EU Market Observatories, http://ec.europa.eu/agriculture/market-observatory_en.

[61] EC, 2019, Agricultural markets and prices, http://ec.europa.eu/agriculture/markets-and-prices_en.

Figure 2 - Example of a dashboard (dairy)[62]

At a sectoral level in the EU, market data (notably price data) is available at agricultural producer level and, in some instances, at first-stage processing level. The AMTF recommended in particular that MT be increased through mandatory price reporting, especially in the meat, dairy, and F&V sectors (still, other sectors may also face significant problems with low levels of MT[63]).

The meat sector comprises, most notably, beef and veal meat, pig meat, poultry meat, and sheep and goat meat production, processing and trade. While there is a significant amount of data on both quantities and prices at the producer stage (and some information is available at the retail stage), there is little information available at the processing and manufacturing[64], and meat wholesale stages. Although much of the already existing information that is collected on quantities and prices in the meat sector is producer-level information, in practice the data are collected and reported by slaughterhouses (part of the processing stage), which have ongoing notification systems in place.

The dairy sector produces a wide variety of products for the retail and food services sector, for industrial processing into higher value added-products, and for use as ingredients in the food (and other) industries. In most MS there is a particularly strong presence of producer organisations in milk deliveries (compared to other sectors), and producer organisations are frequently involved in some of the processing of milk. There is already some information at EU level on processed milk products for the main uses of raw milk (such as cheese and butter), with some disaggregation by type for cheeses (Cheddar, Gouda, Edam, Emmental)[65],

[62] EC, 2019, EU Milk Market Observatory, http://ec.europa.eu/agriculture/market-observatory/milk_en.

[63] See Annex X for more information on the key sectors, including the structure of their supply chains.

[64] The processed meat information available at present at EU level (weekly basis) is for beef, pig, sheep and whole Class A chickens ('65% chickens') carcasses. In addition, and on a voluntary basis, MSs may report other types of presentation or specific cuts of chicken.

[65] Currently in the dairy sector and at EU level, prices are collected (on a weekly basis) for whey powder, skimmed milk powder, whole milk powder, butter and commodity cheeses (above certain minimum thresholds). The price of raw

while market data are not available at EU level on different types of fresh dairy products, certain key quality cheeses, and for high-growth niche markets (such as organic dairy products). First purchasers (in the case of raw milk) or the manufacturer (in the case of processed milk products) currently collect the producer-level market data and processed product market data in the dairy sector.

Fresh F&Vs have typically short supply chains, with a significantly greater share of fresh F&Vs being sold directly by agricultural producers or producer organisations directly retailers. In the F&V sector, market information reported at EU level is currently at the level of packaging stations (following sorting, packaging and, where applicable, placing on pallets of the fruit)[66].

The data currently collected at EU level is used by operators in the FSC, by policy makers, and by the research community. As explained in greater detail in Annex IV on the results from the specific questionnaire to undertakings, most respondents (71%) say they already use existing information on markets and prices provided by the Commission, 63% use market information from national authorities, and 63% of respondents also use other market information. About half of all respondents use data from market observatories and dashboards by DG AGRI, while only 8% of respondents did not know about the Commission data sources. A large group of respondents (41%) stated that they pay for price and market information from private sources, which gives an indication of the usefulness to operators of having access to more and better data – an avenue that is more likely to be open to larger enterprises than to individual farmers and SMEs.

The importance of MT and market information services in general to agricultural producers and other FSC operators can also be illustrated by the decision in the USA to designate parts of the market information services of the US Department of Agriculture as critical and to remain in operation in the event of a government shutdown (when there is an unforeseen interruption to government funding in the USA system). This decision was taken following the disruption caused by the ceasing of operation of these services during a shutdown[67]. This point is illustrated in a Report to Congress, which states that '*during the October 2013 Federal Government shutdown, the agricultural supply chain experienced an absence of LMR [Livestock Mandatory Reporting] data. Industry was left without a benchmark to accurately evaluate markets. Wholesalers and retailers appeared more cautious in making purchases, having to negotiate contract terms without reliable data. Commodity traders slowed or halted trading and adjusted settlement terms. The CME Group temporarily suspended its feeder cattle and lean hog indexes. Industry trade organizations could not provide their members with economic analysis and forecasting, and market analysts were without the basic agricultural commodity data needed to conduct their work*'[68].

There are 29 public MISs in operation in the EU at MS level that collect and publish data on the FSC[69]. These different MISs vary significantly in terms of their organisation[70]; their coverage of the FSC; how data are collected (e.g., using existing or new data); the extent of market data coverage (prices, margins, etc.); methodological approach (i.e., data are not harmonised across MSs[71]); the frequency of data publication[72];

milk and the prices of other cheeses relevant to MS markets are also reported at EU level (monthly basis). In addition, the total quantity of cow's raw milk (in kilograms) is also reported (monthly basis).

[66] Currently, in the F&V sector and at EU level, several types of unprocessed products are reported (on a weekly basis). The products are listed in Annex XV to Implementing Regulation (EU) 543/2011. This does not include bananas, which have their own reporting requirements. At present there is no data reporting at EU level for processed products.

[67] USDA, 2018, Services in the event of a government shutdown, http://bit.ly/2DuzvPQ.

[68] USDA, 2018, Livestock Mandatory Reporting, http://bit.ly/2MMQWfN.

[69] Baltussen W. et al., 2019, Monitoring of prices and margins. http://doi.org/10.2760/197814.

[70] National statistical authorities, ministries or other governmental institutions, separate price and margin observatories.

[71] Haniotis T., 2018, Market transparency in the EU, http://europa.eu/!MH34Jp (pdf).

the way data are presented upon publication; whether data analyses is also provided and, if so, how it is provided; and, consequently, in their costs[73].

Still, there are some common characteristics of MISs at MS level. These include a primary focus on the agricultural producer level and on consumer prices, and little coverage of prices, quantities, or costs for the intermediary stages of the FSC. Most initiatives cover the dairy, meat, F&V, and crops[74] sectors (but some only one or a few of these). There is little or no observable coordination in MIS initiatives between MSs. An accompanying analysis or interpretation of the data is often not present[75].

[72] Three MSs have MISs that publish at least some data daily (Bulgaria, Greece and Portugal). Most other MSs MISs that publish data also do so at regular intervals (weekly, monthly, annually), while a smaller but significant proportion publish data both on an *ad hoc* basis and at regular intervals.

[73] Baltussen W. et al., 2019, Monitoring of prices and margins, http://doi.org/10.2760/197814.

[74] Cereals, protein crops, sugar, rice, maize etc.

[75] Baltussen W. et al., 2019, Monitoring of prices and margins, http://doi.org/10.2760/197814.

3 The food supply chain in the EU

3.1 Key facts and figures

There are about 11 million farms in the EU, providing work for roughly 22 million people (both full time and part time, or around 9 million full-time equivalent[76]). These farms produce primary products for processing by about 300,000 enterprises of the food and drink industry. These food processors sell their products via the 2.8 million enterprises within the food distribution (wholesale and retail trade) and food service industry (restaurants, catering, etc.). Food distribution and food services deliver food to the EU's 500 million consumers[77].

As a whole, the FSC employs around 44 million people in the EU. The total turnover of food distribution and food services amounts to close to EUR 1,600 billion (2015 figures), representing around 14% of total consumption in the EU. Turnover in the food distribution and food services sector grew annually by 2.2% on average from 2009 to 2015. EU households spend, on average, 14% of their expenditure on food and beverages[78].

Figure 3 - Employment in the FSC[79]

Gross value added[80] generated in the whole FSC amounts to about 7% of the total value added of the EU economy. GVA generated in the FSC grew by 2.4% per year since 2008. GVA in the agricultural production part of the FSC grew on average at a slower pace in the same period, year-on-year (1%) than in the other segments of the FSC (2.5% for the processing sector; 3.2% for the food retail and food services sector). These differences in growth between these key stages of the FSC reflect longer-term trends in the FSC.

Following increasing consumer demand for convenience food and beverages products and services, the processing and retail stages of the FSC have added additional features to basic agricultural products. These

[76] EC, 2013, Full-time equivalent, http://europa.eu/!Mb48Pb.

[77] EC, 2018, Initiative to improve the food supply chain, http://europa.eu/!rX64CX.

[78] With wide variation, ranging from less than 10% in the UK to 32% in Romania (2015 figures).

[79] European Commission, COM(2017) 713 final, The Future of Food and Farming, https://europa.eu/!Vf86CX.

[80] EC, 2019, Gross value added, http://europa.eu/!UM33dk.

sectors have expanded their share in the total GVA in the food chain, while the share of agriculture (now at around 25% of the total GVA created in the food chain) has decreased by around 0.14 percentage points per year over the period (2008-15), and more so in a longer timeframe.

3.2 Market structure of the FSC

While there is variation by country, there are high levels of industrial concentration at both the food processing and the retail stages of the FSC in the EU[81]. No current data by product is available for the food processing stage, but data from the literature from the mid-1990s showed already high levels of concentration for several processed food products. The tendency since then will have been for further concentration in the food processing industry, including cross-border mergers and acquisitions. The existing data are presented in table 1. Increasing concentration at any stage in the FSC will tend to lead to a decrease in MT in the chain[82].

These figures are likely to underrepresent food processing industry concentration at a local or regional level, where fewer food processors may be available as buyers of agricultural products. The local or regional level is where the market analysis of most of the relationships between agricultural producers and buyers of their products is relevant[83].

Table 1 - Food manufacturing industry concentration (three-firm ratio, mid-1990s)[84]

	Ireland	Finland	Denmark	Italy	France	Spain	UK	Germany	Average
Baby Food	98	100	99	96	93*	54	78	86	88
Canned Soup	100	85	91	50	84	-	79	41*	76
Ice Cream	-	84	90	73*	52	84	45	72	71
Yoghurt	69	83*	99*	36	67	73	50	76	69
Chocolate Man	95	74	39	93	61	79	74	-	74
Pet Food	98	80	40	64*	73	53	77	87	72
Breakfast Cereal	92	-	70	88	70	82	65	67	76
Tea	96	90	64	80	82	62	52	55	73
Snack Foods	72	70*	78	71	50	56	73	48	65
Carbonates	85	50	-	60	69	79	55	60*	65
Pasta	83	97	61	51	57	65	37	49	63
Wrapped bread	85	44	59	80	70	96	58*	-	70
Biscuits	83	73	44	55	61	53	42	50	58
Canned fish	-	70	49	68	43*	33	43*	-	51
Mineral Water	-	100	70	37	-	31	14	22	46
Fruit Juice	-	70	65	62	26	38	35	46	54
Canned vegetables	-	68	50	36	29	-	-	-	46
Average	88	77	67	66	62	63	55	58	67

* Two-firm concentration ratio.

[81] Saitone T.L. & Sexton R.J., 2017, Agri-food supply chain, http://doi.org/10.1093/erae/jbx003.

[82] Fausti S., 2018, Effects of more transparency in the US fed cattle market, http://europa.eu/!gW87fv (pdf).

[83] Sexton R.J. & Xia T., 2018, Concentration in the agricultural supply chain, http://doi.org/10.1146/annurev-resource-100517-023312.

[84] Cotterill R., 1999, Concentration in food industries globally, http://fmpc.uconn.edu/publications/rr/rr49.pdf, quoted in OECD, 2014, Competition issues in the food chain industry, http://oe.cd/2u4.

At the retail stage concentration ratios in food retail are frequently between 40% to 70% across the EU (medium levels of concentration) but rarely above 70% (high level of concentration; see table 2 – shaded where concentration ratios are above 40%)[85]. The trend in food retail concentration is however for the most part increasing. As was the case for food processing, the retail figures are likely to underrepresent retail sector concentration at a local or regional level, where fewer retailers will be accessible within practical distance from individual consumers[86].

Table 2 - Concentration ratio in edible groceries (five largest retailers per MS)[87]

	2004	2006	2008	2010	2012
Austria	62%	62%	66%	66%	67%
Belgium	51%	55%	57%	58%	59%
Bulgaria	5%	7%	10%	17%	19%
Croatia	17%	20%	31%	40%	44%
Cyprus	10%	14%	17%	21%	25%
Czech Republic	26%	32%	38%	41%	44%
Denmark	51%	50%	54%	57%	58%
Estonia	48%	59%	73%	71%	76%
Finland	46%	43%	45%	48%	50%
France	56%	57%	58%	59%	60%
Germany	52%	57%	57%	60%	61%
Greece	18%	21%	25%	26%	28%
Hungary	26%	29%	30%	30%	30%
Ireland	36%	37%	37%	37%	39%
Italy	19%	19%	20%	21%	21%
Latvia	27%	33%	39%	43%	43%
Lithuania	49%	49%	53%	58%	60%
Luxembourg	54%	55%	55%	56%	54%
Netherlands	51%	47%	46%	53%	58%
Poland	13%	16%	23%	28%	32%
Portugal	37%	38%	44%	49%	54%
Romania	4%	7%	10%	15%	20%
Slovakia	19%	31%	39%	41%	42%
Slovenia	34%	43%	48%	51%	51%
Spain	34%	38%	45%	45%	46%
Sweden	52%	51%	48%	49%	50%
United Kingdom	46%	44%	42%	42%	39%

[85] Bukeviciute L. et al., 2009, Functioning of the food supply chain, http://europa.eu/!XM87vu; EY et al., 2014, Economic impact of modern retail, http://doi.org/10.2763/77405; 'all-product' retail concentration ratios are higher.

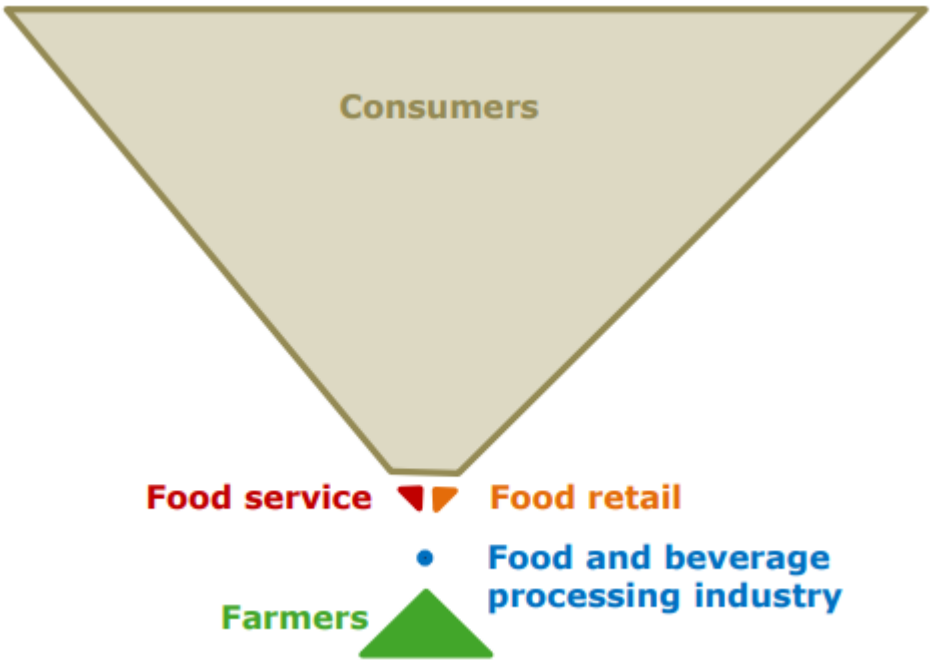
[86] There is evidence that mergers have an effect on increased consumer prices (the reduced competition effect dominates the efficiency gain effect). Allain et al. (2013) find that the reduced competition (consumer price increase) effect takes place primarily at local level and happens for both the merged firm and its competitors (Allain M.L. et al., 2013, Impact of retail mergers on food prices, http://hal.archives-ouvertes.fr/hal-00920460). Hovhannisyan et al. (2018) use econometric techniques that control for analytical problems that have affected previous research on the effect of increasing concentration, find that increasing concentration has a significant effect on food price increases and in decreasing food consumption in the USA, and state that similar conclusions are likely in Europe (Hovhannisyan V. et al., 2018, Relationship between price and retail concentration, http://doi.org/10.1093/erae/jby026.)

[87] EY et al., 2014, Economic impact of modern retail, http://doi.org/10.2763/77405.

3.3 Implications of the structure of the FSC for market transparency

The FSC can be thought of as an hourglass, where many agricultural producers sell to a small number of buyers (primarily the food processing industry or their intermediaries), who process and sell the processed agricultural products on to a small number of retailers, who sell these on to very many consumers (see figure 4). The levels of industrial concentration in the FSC mean that for agricultural producers there are very few buyers, and for consumers very few sellers. These situations are described, respectively, as oligopsonies and oligopolies. Where oligopsonies and oligopolies exist there is the potential for the larger firms in the concentrated sectors to exert their power in ways that are not beneficial to the efficient operation of the market. From the perspective of farmers and consumers the relevant number of buyers or sellers is typically largely determined in a relatively small geographical area (limited by reasonable travel distance), and this tends to increase the oligopsony or oligopoly power of concentrated industries. In addition, highly concentrated buyers of agricultural products and highly concentrated sellers of consumer food products trade among themselves, and the dynamics at these nodes of the FSC can have important consequences upstream to agricultural producers and downstream to food consumers.

Figure 4 - Representation of the food supply chain[88]



MT in the FSC tends to follow the same structure as that of concentration along the chain: there is a high level of transparency at the level of the agricultural producer, where there is also a very large number of operators. There is then little information at the intermediate stages of the FSC, where there are high levels of market concentration. There is then more information again available at the level of the consumer, where there are again many agents. This is not a coincidence and, from this perspective, low levels of MT can be seen as the natural result of high levels of concentration in the market[89]. The lack of MT in the intermediary stages of the FSC is then an element of market power, and reinforces that power. This explains the position

[88] European Commission, 2015, EU Agricultural Markets Briefs no. 4, https://ec.europa.eu/agriculture/sites/agriculture/files/markets-and-prices/market-briefs/pdf/04_en.pdf.

[89] Brooks J., 2018, Market transparency can contribute to a productive food system, http://europa.eu/!ww64Qn (pdf); Ménard, C. (2018), Market transparency in food supply chain, http://doi.org/10.2760/285157.

of some stakeholders that call for increased transparency as a means to rebalance asymmetries in bargaining power[90].

Compounding the issue of reduced transparency at the food processing stages of the FSC, operators at the intermediary stages of the chain are better positioned to gather their own data on transactions[91]. In addition, larger companies tend to have a higher frequency of transactions with other agents than smaller operators (such as farmers or SMEs), which allows them to gather a greater number of data points[92].

In the EU the FSC is characterised by large asymmetries of market information between actors at different segments of the chain, as well as between smaller and larger actors in the same segment of the chain and actors at the same level of the chain in different MSs. Asymmetry of information is not a problem per se. In every market in the real economy some agents will hold more information than others, and still the market may be deemed sufficiently competitive not to cause major concerns with efficiency, price formation and the transmission of price signals. However, where key market information is missing, at least for some agents or groups of agents, this can lead to distorted market signals and inefficient marketing, production and investment decisions in the private sector, as well as to reduced trust and less effective public policies. Ultimately, this leads too to avoidable negative externalities (for example, affecting environmental sustainability or levels of food waste). Should these issues occur to a significant extent a negative impact on social welfare can be expected.

3.4 Asymmetry in price transmission

One empirical observation from existing price data is that sectoral supply chains are often characterised by asymmetric price transmission: processor or retail prices tend to go up more, and more quickly, when agricultural producer prices go up, but be less responsive when agricultural producer prices go down. Equally, when retail prices go up, there is a slower or incomplete transmission of these changes up the FSC, but when they go down, the transmission if faster and more complete (a phenomenon known as 'rockets and feathers')[93].

Over time, these processes with price transmission tend to lead to widening mark-ups between agricultural producer prices versus processor and retail prices. This widening has resulted in claims by agricultural producers that downstream operators are using their greater bargaining and market power to extract value from smaller operators, namely farmers, leading to ever decreasing shares of the food expenditure by final consumers going to agricultural producers[94].

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[90] Some privately sourced data can be acquired by market operators for the intermediary stages of the FSC, but this data requires financial resources on the part of operators, and it is less likely that smaller operators such as farmers, smaller produce organisations, and SMEs can afford such data (or with as much frequency or as much detail as other larger operators paying for data).

[91] In the absence of public data being available to operators, or of these operators being able to purchase data from private companies, each operator would have information only on the prices of their own transactions. For example, while a processor would have a view of the prices at which producers agree to sell and retailers agree to buy, producers and retailers would have only their own sale and buy prices, respectively.

[92] That is, sheer size is a determinant of access to information.

[93] There is an important distinction here: price transmission can be from upstream to downstream or downstream to upstream (or indeed from midstream, e.g. at the processing stage, and transmitted both upstream and downstream). The direction of the signal matters, as its underlying processes are not the same (where in the FSC the shock takes place matters for how transmission in the FSC takes place).

[94] There are a ways in which a fair and efficient operation of the market can also result in a decreasing share of value-added in the FSC being attributable to agricultural producers. These include higher increases in productivity and innovation in downstream sectors than in the agricultural production sector (including more value creation through marketing and, proportionally, less through the product itself), and changes in how consumers acquire food (e.g. less

While there is evidence that asymmetric price transmission is common, why it occurs is less clear[95]. Public authorities and researchers currently do not have a sufficient understanding of how prices are determined and how price shocks are transmitted in the FSC. In part this lack of understanding is due to a lack of data on key market operations, and on data that allows taking into account structural change and the complexity of relations in the FSC (with interlinked markets and dynamics within and between these markets simultaneously at play), as well as on data allowing internationally comparable studies of price transmission[96]. Data are particularly lacking on processor selling prices and retailer buying prices[97]. This processor-retailer nexus is of particular importance as price transmission in the FSC needs to be seen a system-wide phenomenon, but there is a lack of information on which to develop a factual understanding of these dynamics. For example, it is possible that buyer power at the retailer stage is mitigated by seller power at the processor stage, whereby agricultural producer prices are de facto suppressed for the benefit of consumers, through an anti-competitive route rather than through the mechanism of effective market competition (the 'countervailing power' effect)[98]. Should this occur it is also possible that otherwise non-competitive market structures at the intermediate processing and retail stages can coexist with little harm to consumers, but with harm to agricultural producers. Behavioural aspects may also be important in explaining price transmission asymmetry in the FSC. For example, there is evidence that consumers react relatively more strongly to price increases (disbenefits to consumers) than to price decreases (benefits to consumers), and these behavioural patterns may have effects up the length of the FSC, especially if they are of sufficient magnitude to affect volumes demanded in the market. Increased availability of detailed consumer purchasing data could shed light on these effects.

3.5 Challenges from increased market orientation

After successive reforms to the CAP and the concomitant revision of public support schemes and opening of the EU market for agricultural markets to international competition, agricultural producers in the EU have become increasingly market-oriented. Public support has been decoupled from production, and most farm income in the EU now comes from selling on the market.

Reforms to the CAP have been accompanied by the gradual removal of trade barriers for agricultural products from third-countries. The prices for agricultural products in the EU are generally aligned with prices in world markets. The reforms towards a more market-orientated EU agriculture have offered EU farmers opportunities for entering new markets and resulted in a shift to more value-added production. The EU has been a net exporter of food and drink products since 2009, with the value of EU agri-food exports rising to EUR 131 billion in 2016 (compared to EUR 60 billion in 2005). The agri-food sector represented 7.5% of total EU exports in goods in 2016. With a surplus close to EUR 19 billion, the agri-food sector is a major contributor to the overall trade surplus of the EU in goods (EUR 39 billion in 2016). Export activity is a strong contributor to the creation of jobs, on farms as well as in the downstream food sector.

The move to a more market-oriented production has presented new challenges to the EU agricultural sector and for the FSC as a whole, as well as to public sector regulators trying to maintain rules that are fit-for-

purchases in supermarkets and more through food services, such as restaurants, which require a higher share of non-agricultural product inputs).

[95] Baltussen W. et al., 2019, Monitoring of prices and margins, http://doi.org/10.2760/197814.

[96] OECD, 2014, Competition issues in the food chain industry, http://oe.cd/2u4; Wohlgenant M.K., 2001, Marketing margins, http://doi.org/10.1016/S1574-0072(01)10024-1; Sheldon I., 2018, Industrial organization of the food industry, http://doi.org/10.4324/9781315623351.

[97] Sheldon I., 2018, Industrial organization of the food industry, http://doi.org/10.4324/9781315623351; Baltussen W. et al., 2019, Monitoring of prices and margins, http://doi.org/10.2760/197814.

[98] OECD, 2014, Competition issues in the food chain industry, http://oe.cd/2u4.

purpose, and to the research community aiming to understand and offer reflections on change. Among these challenges is the increased complexity of consumer demand, be it in the way food is acquired (a shift from 'bricks and mortar' retail to online retail and to an increasing share of food services), or in the product characteristics demanded (organic, local, GMO-free, animal welfare standards going beyond legal requirements, fair trade, geographic origin, etc.). Consumer demand can shift quickly in some sectors and products, while in others trends are observable but the rate of change is unclear, posing problems for planning and adjustment throughout the FSC. Simultaneously, global population and income growth is leading to increasing demand for food, but also to significant changes in the patterns of food consumption (for example, there is an increasing demand for high quality agri-food products, on which the EU has a strong competitive advantage). Future trends are expected to see a continuation of demand for increasing product and retail channel diversification (including increasing demand for convenience in acquiring food products).

Increasing levels of concentration in the FSC as a whole, but in particular at the processing and retail stages, have raised concerns that abuses of buyer or market power are occurring that damage the efficient functioning of the FSC as well as undermine trust between operators in the chain[99]. This happens in a context where increases in industrial concentration compound the market power of buyers in the intermediary stages of the FSC, and where information asymmetries favour operators in those same, already powerful, intermediary stages. Agricultural producers observe price developments at farm level that often appear dissociated from prices at consumer level. This means that for farmers it is unclear whether observed changes in prices are due to fundamental changes in demand or to the expression of buyer power by their counterparties, which adds to mistrust and calls by farmers and their representatives for more MT. On the other hand, processors fear anti-competitive developments in the chain if MT is increased, while retailers refer to their relatively low margins as evidence of high competition at their stage in the chain, while pointing out that higher margins and less MT exist in the processing sector. These tensions and mistrust in the FSC can lead to unnecessary friction in the operation of the chain, with real economic consequences[100]. Trends towards increased food processing and retail industry concentration are expected to continue[101].

Price volatility is also increasingly an issue of concern, in particular for agricultural producers. The integration of markets around the world is leading to specialisation on the basis of competitive advantage, which, while providing greater economic benefit (on the basis of production efficiency), has led to increases in systemic risk and the risk of contagion[102]. A greater frequency of unfavourable climatic events, pests or other high impact phenomena in high-production volume areas of the world can send ripple effects throughout the food system, driving up prices of commodities. Political responses, such as embargos or sudden steep increases in duties on agri-food products, seem to become more common (even if international free trade also offers the possibility of shifting production to new markets as a coping strategy). On the other hand, particularly

[99] Ménard C., 2018, Market transparency in food supply chain, http://doi.org/10.2760/285157; EC, 2018, Initiative to improve the food supply chain, http://europa.eu/!rX64CX.

[100] See for example: Dakhli M. & De Clercq D., 2004, Human capital, social capital, and innovation, http://doi.org/10.1080/0898562040100016778 35; Kim B.-Y. & Kang Y., 2014, Social capital and entrepreneurial activity, http://doi.org/10.1016/j.jebo.2013.10.003; Bloom N. et al., 2009, Organization of firms across countries, http://doi.org/10.3386/w15129.

[101] Except where concentration levels are already very high, where a natural levelling off would occur. On past evidence, major players in food processing and retail are expected to expand into niche markets through acquisitions of smaller players, removing some of the benefits to competition in the market of new entrants.

[102] Agricultural markets are highly inelastic in supply and demand for quantity (at least in the short term), which means that deviations from market equilibrium tend to highly absorbed by price changes alone. Adjustments to production (supply) are slow due to the nature of the underlying physical production processes or to asset specificity, and as such can lead to over-adjustments that add another layer of volatility to the already existing idiosyncratic volatility of prices of the agricultural sector.

favourable production years can lead to significant price drops in all regions. Such volatility can have an effect on agricultural incomes the world over. Although EU farm incomes have stabilised, after several years of a downward trend, there is still significant variability around the average. Every year about 20% of EU farmers see their income vary by 30% or more[103], which can have significant implications on the ability of farms to stay in business (for example, on farmers' ability to avoid defaulting on loans due to a liquidity squeeze in a bad year). Increased MT may help mitigate the effects of volatility by increasing the ability to observe changes at an early stage, by facilitating the management of risk, limiting speculation, or better anchoring expectations from governments and economic operators[104].Experts in agricultural policy draw attention to barriers to effective management of risk at the level of agricultural producers that add to the challenges posed by increased market integration. These include difficulties in developing futures markets and forward contracting, given the need for market information for effective contract settlement, and difficulties in accessing finance as opacity in the market drives up credit risk for agricultural producers and SMEs in the FSC[105]. The effective use of value-sharing agreements, i.e. of contracts whereby gains or losses are distributed between FSC operators on pre-determined terms, can be compromised by a lack of transparency at individual stages of the FSC. The operation of producer organisations can be negatively affected by a lack of MT, which reduces their effectiveness as a buffer to risks for their members[106].

On current trends, public financial support for agriculture at the EU level is expected to decrease in the long run, as other political priorities gain relevance. Within the support that is available priorities also shift, towards lower levels of income support and greater levels of payments for the provision of public goods. These developments expose the income of agricultural producers to greater uncertainty, which affects the welfare of agricultural producers and rural populations in the EU. To balance these changes, ensuring that clearer market signals are passed upwards the FSC, can help farmers reduce the costs of reacting to the market and adjust investment.

The increasing complexity of the environment in which the FSC operates, and of the FSC itself, poses then challenges at various levels, and multiple policy interventions may be useful to facilitate the more fluid operation of the chain (competition and other market regulation rules; support in training and development of the agricultural community, including on the operation of the markets; adapting public support to agricultural producers; etc.). Note that MT can also affect the effectiveness of other EU public policies, working as a multiplier. For example, the success of policies increasing the market orientation of agricultural producers will depend on the availability and accessibility of MT data to those producers. The successful promotion of professional management structures in producer organisations requires that these managers can get actionable information on the market. The EU's budget for research and innovation is increasing, including for FSC-related research, and the availability of evidence for researchers to analyse the functioning of the FSC is key for insightful research. Ultimately, better research should benefit both operators in the FSC and policy-makers.

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[103] EC, 2018, Agricultural and farm income, http://europa.eu/!KC39bh.

[104] Giot P., 2003, Volatility in agricultural commodity markets, http://doi.org/10.1002/fut.10069; Gilbert C.L. & Morgan C.W., 2010, Food price volatility, http://doi.org/10.1098/rstb.2010.0139; G20, 2011, Food price volatility and agriculture, http://bit.ly/2Jw2mql.

[105] Ecorys, 2017, Study on risk management in EU agriculture, http://doi.org/10.2762/387583; AMTF, 2016, Improving market outcomes, http://europa.eu/!fQ94cP (pdf).

[106] 'improving the understanding and knowledge of price transmission as well as of contractual arrangements along the FSC is of crucial importance and should be a priority action of existing national "Markets and Price Observatories". The outcome of these actions would contribute to improving the effectiveness of market positioning strategies by agricultural producers through the setting up of producer groups and agro-food cooperatives' (HLG, 2009, Competitiveness of the European agro-food industry, http://europa.eu/!tD47bV).

4 Market transparency and the functioning of the food supply chain

According to economic theory, MT is a prerequisite for the efficient functioning of a market, which ensures the optimal allocation of available resources and allows the maximisation of social welfare. For agricultural producers this means lower search costs to find the best deals, geographically as well as intertemporally[107], and to be able to make better marketing, production and investment decisions. However, in all real life markets there are certain distortions (imperfect competition) and transparency can raise concerns (e.g. where the market is organised around only a few buyers or sellers and, thus, there is a heightened risk of collusion – see section 5)[108].

Essential elements to consider when seeking to improve the operation of the FSC are the level and nature of MT. Public policy can contribute to increased MT by disseminating existing information and by accessing privately held data, including in voluntary arrangements with stakeholders (for example, exchange of information in the context of market observatories)[109]. MT at EU level has been increasing in recent years, particularly on the aspect of communication with stakeholders (as described above). By now, there are significant amounts of data available on agricultural commodity markets, and some public data exist already on a limited number of processed agricultural products.

The question to consider at this stage is whether the status quo is sufficient, whether the communication of existing data at EU level should be improved but no new data should be collected, or whether further data collection would be useful and contribute to a better functioning of the FSC[110]. This section addresses the potential benefits of increased MT.

If increased MT is deemed desirable, it is then necessary to analyse the implementation challenges that arise with an increased effort of collecting, processing and reporting data (both at private sector and public sector level), including the associated costs of doing so. There are also concerns that MT can increase the risk of anti-competitive behaviour in the FSC (to the detriment of consumers and agricultural producers), among others. The potential challenges of increasing MT are discussed in the next section (section 5).

Increasing MT in the FSC, and in particular at its intermediary stages, can bring benefits to different groups. The main potential beneficiaries are operators in the FSC (agricultural producers and producer organisations, and other private enterprises, including SMEs), public authorities (in their role as regulators and policy makers), as well as other groups, such as the research community (as data users) and consumers (under certain conditions). If increased MT results in increased efficiency, there may also occur other benefits, for example to the environment through a more rational use of resources.

[107] Increased market transparency has the potential to provide structural information about the nature of demand in the FSC, including on how demand is changing over time (from a technical and economic perspective).

[108] Even if one can argue that in such cases problems due to imperfect completion should be addressed, in order to create more ideal markets, rather than using one shortcoming (lack of transparency) to compensate the negative consequences of another shortcoming (imperfect competition).

[109] Brooks J., 2018, Market transparency can contribute to a productive food system, http://europa.eu/!ww64Qn (pdf); Haniotis T., 2018, Market transparency in the EU, http://europa.eu/!MH34Jp (pdf).

[110] Ménard C., 2018, Market transparency in food supply chain, http://doi.org/10.2760/285157.

4.1 Benefits to agricultural producers and other FSC operators

4.1.1 Increased operator efficiency and a better functioning of the market

Lack of MT leads to low allocative efficiency[111], whereby operators have high costs in gathering information about the markets they operate in (price, supply and demand, capacity, stocks of products, etc.). This affects their decisions on when to harvest, and when or where to buy, to sell, to invest, or to disinvest. Where there is greater MT, better-informed operators can adjust their production and investments to changing market conditions (for example, to shifts in consumer preferences towards organic food, or to food mindful of animal welfare). However, improvements in MT can have public good characteristics, whereby agricultural producers and other operators in the FSC can benefit from increased information availability but fail to do so due to own-coordination problems and competition rules to avoid anti-competitive behaviour[112].

In markets with highly inelastic demand and supply[113], such as the agri-food market, the social welfare costs of an inefficient allocation of resources are higher than in other markets[114]. Over time, if MT contributes to better decision-making in the FSC, greater access to information can be expected to lead to greater market integration (convergence between prices in different markets) and to a more effective matching of supply and demand (due to improved price signals), with lower costs and greater social welfare[115]. As it improves market signals, MT can also contribute to the development of new products and niche markets (which have low overall market shares but often high growth profiles). MT can also inform decisions to more quickly disinvest from products in waning market segments (with reduced adaptation costs). However, by stimulating competition and efficiency in the FSC, some firms may see reduced profits, and these firms have a disincentive to share information[116]. Figure 5 shows how price comparisons over space and time are possible with existing data at EU level.

[111] 'Allocative efficiency' refers to the rational use of resources by operators or sectors of the economy, reflecting the fact that resources in the economy are scarce and choices about how to use these resources have opportunity costs. In particular, in a sector where there is high allocative efficiency, production decisions are closely aligned with consumer demand preferences and there is low to negligible deadweight loss (that is, the social cost of operators making bad decisions due to, for example, lack of knowledge about market operation).

[112] Hueth B. & Marcoul P., 2006, Information sharing and oligopoly, http://doi.org/10.1111/j.1467-8276.2006.00903.x; Staatz J. et al., 2014, Measuring the impact of Market Information Systems, http://doi.org/10.1684/agr.2013.0631.

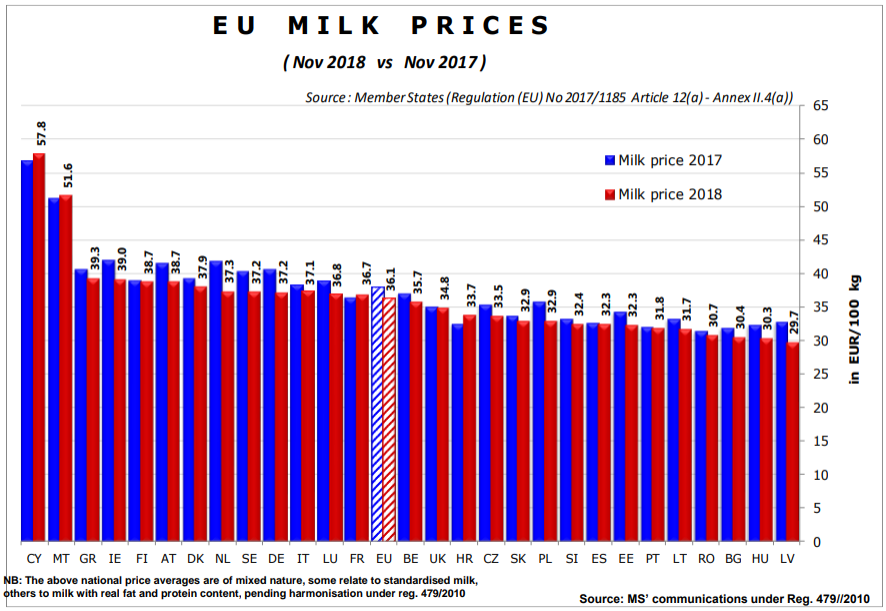
[113] 'Inelastic' means that even if prices change a significantly, demand and supply does not: Once tomatoes are ripe, farmers have to harvest and sell them, no matter the price they get. Similarly, people can only eat so much, no matter how cheap food gets.

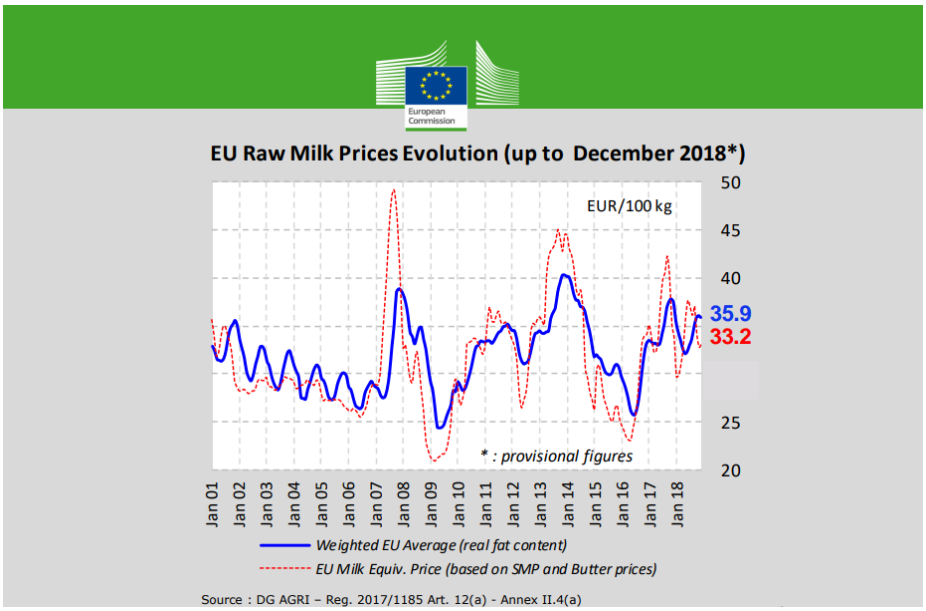
[114] Kizito A.M. & Staatz J., 2014, Improved agricultural market information, http://doi.org/10.1684/agr.2014.0709.

[115] Shepherd A., 1997, Market information services, http://www.fao.org/3/a-x6993e.pdf

[116] Hueth B. & Marcoul P., 2006, Information sharing and oligopoly, http://doi.org/10.1111/j.1467-8276.2006.00903.x.

Figure 5 - Milk prices in the EU across space and time[117]





Much of the evidence in the literature on the efficiency effects of increased MT in the FSC comes from the US experience with mandatory reporting in the livestock sector, in the form of the LMRA (see box X)[118]. The LMRA was introduced by the US government as a response to increasing difficulties in gathering data on market operations in the livestock sector in the late 1990s. The act requires meatpacking plants

[117] EC, 2019, Milk Market Observatory, http://ec.europa.eu/agriculture/market-observatory/milk_en.

[118] USDA, 2019, Livestock mandatory price reporting, http://www.ams.usda.gov/rules-regulations/mmr/lmr (and http://uscode.house.gov/view.xhtml?path=/prelim@title7/chapter38&edition=prelim).

(slaughterhouses, meat preparation or meat product manufacturers) to report prices of carcasses and individual cuts (as well as minced meat)[119].

Failure to comply with the mandatory reporting requirements of the LMRA comes with a penalty of USD 10,000 per violation. There are, in addition, provisions for gathering price data from the retail sector for meat, including prices for representative food products made from beef, pork, chicken, turkey, veal, or lamb (including conventional and organic).

The USA also introduced mandatory reporting in the dairy sector in 2010. Data are available for several processed products on a weekly[120] or monthly basis, both conventional and organic, and for several separate US regions (reporting differs across regions, depending on the significance of each product for local production). Mandatory reporting in the US dairy sector applies to manufacturers of dairy products.

The effects of the LMRA on the operation of the meat sector in the USA have been studied from different perspectives, since the entry into force of the Act, and continue to be a subject of research. While findings vary across studies[121], in part due to methodological issues, the latest empirical findings (2018) suggest that the LMRA had a pro-competitive impact on US livestock markets. According to these findings, by 2010 the average degree of exercised market power in the US meat-processing sector had decreased by 27% in the US beef processing industry and by 18% in the pork processing industry, as compared to before the entry into force of the LMRA in 2001 (even as concentration ratios in the industry increased)[122].

One mechanism for how more transparency can improve competition had been elucidated in earlier theoretical analyses: increasing information on transactions reduces uncertainty, and, to the extent that operators are risk averse, greater certainty promotes competition and results in higher livestock prices[123]. Increased levels of MT that lead to increased market competition in the FSC can be expected to increase production volumes or to reduce rent-seeking by operators with market power[124]. The positive effects of increased MT is likely to be maintained for as long as the additional information is made available, and can represent a structural shift in the operation of the FSC. In the EU, increased MT has the potential to promote cross-border competition, with the associated positive effects of internal market integration[125]. Increased competition and production volumes can be expected to benefit consumers and agricultural producers (see below).

On the other hand, other studies concluded that reporting too much information about rival pricing could facilitate coordination and foster (at least tacit) collusive behaviour among slaughterhouses. However, the

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[119] USDA, 2018, User's guide to USDA's LMR pork reports, http://bit.ly/2DRAelb (pdf). The USDA also reports other types of market-relevant data and information, such as transport costs (http://bit.ly/2Dzf4l4) or analyses and in-depth studies on various topics (http://bit.ly/2IkFnhu).

[120] USDA, 2019, Dairy market news, http://bit.ly/2V2URrO. (Weekly processor prices include different classes of milk, various types and qualities of cheese, whey, and butter. These are reported in detail, including averages or ranges for market variables (as well as premiums for marketing standards, such as organic).)

[121] Koontz S.R. & Ward C.E., 2011, Livestock mandatory price reporting, http://doi.org/10.2202/1542-0485.1254; Perry J. et al., 2005, Did the mandatory requirement aid the market? http://bit.ly/2OoKZ9F (pdf).

[122] Panagiotou D., 2018, Market power effects of the LMRA, http://doi.org/10.1007/s10842-018-0280-9.

[123] As one study in this line of research puts it, producers benefit from the LMRA regardless of whether price uncertainty decreases for slaughterhouses or producers. If the slaughterhouses' price uncertainty is reduced, the producer benefits from an increase in competition between the slaughterhouses. If the producer's price uncertainty is reduced, the producer benefits from imposing more accurate reserve prices (Koontz S.R. & Ward C.E., 2011, Livestock mandatory price reporting, http://doi.org/10.2202/1542-0485.1254). See also [123] Jensen R.T., 2010, Information, efficiency, and welfare, http://doi.org/10.1111/j.1574-0862.2010.00501.x, and Hueth B. & Marcoul P., 2006, Information sharing and oligopoly, http://doi.org/10.1111/j.1467-8276.2006.00903.x;

[124] Staatz J. et al., 2014, Measuring the impact of Market Information Systems, http://doi.org/10.1684/agr.2013.0631.

[125] Molnár A. et al., 2013, Price transparency for fair competition, http://doi.org/10.1007/978-94-007-6274-9_13.

analysis of such effects is complicated by confounding factors: while rising economic profits of slaughterhouses after the introduction of the act can be an indication of their greater oligopsonistic power, there were also other changes taking place in the market during that period that could have led to similar effects. For instance, increased market concentration makes it difficult to attribute changes solely to the LMRA[126]. In terms of the ability of slaughterhouses to tacitly collude and exercise market power at the expense of livestock sellers, the USDA argues that already before the act slaughterhouses had high levels of information about other firms' bids, which means that the LMRA provided less new information to the slaughterhouses (as buyers) than it did to livestock sellers. Hence, rather than increasing the possibilities of slaughterhouses to collude, the act reduced asymmetric information; this benefits livestock sellers, and should also benefit consumers[127]. Competition issues are further discussed in section 5.1.4.

While information sharing tends to benefit consumers and agricultural producers, it has ambiguous consequences for firms' profits. Information sharing allows firms to increase the precision of estimated future demand, but because each firm receives the same information, transparency can lead to a convergence of firms' strategies[128]. However, consumers typically have little knowledge about sellers' actual costs and profit margins. Therefore, delivering a clear, complete, and comprehensive overview of prices can increase customers' price fairness perceptions by indicating that the company has nothing to hide. Price fairness, in turn, increases perceived consumer satisfaction[129].

4.1.2 Better risk management

Agriculture is an exceptionally risky business activity. In addition to conventional business risk, there is a significantly greater exposure than in other sectors to environmental risk (meteorological, and animal and plant health risks) that affects market outcomes. There are also linked climate change risks that affect agriculture in a structural way. In addition, agriculture is particularly vulnerable to political risk – agricultural products are often the first targets of politically motivated embargos and tariff increases. These risks compound market risk, and make insights into likely future price movements that can help mitigate market risk particularly important[130]. In the longer run, better production and investment decisions can also reduce farmers' overall business risk, as more effective investments make the agricultural sector more resilient[131].

For agricultural producers to assume their share of responsibility for risk management they need the informational tools to manage that risk. Besides having the potential to contribute to better marketing, production and investment decisions, MT can support better risk management in the agricultural sector through an increase in the availability, and in the better functioning, of insurance and mutual funds, as well as through the facilitation of new or improved contract types, especially through price transparency (including value-sharing agreements, and forward and futures contracts)[132].

By lowering information costs, MT can contribute to the development of better insurance instruments and policies for the agri-food sector[133]. Most clearly, this is the case for price insurance schemes, which require

[126] Mathews Jr. K.H. et al., 2015, Mandatory price reporting, http://bit.ly/2X4yTXg; Panagiotou D., 2018, Market power effects of the LMRA, http://doi.org/10.1007/s10842-018-0280-9.

[127] Mathews Jr. K.H. et al., 2015, Mandatory price reporting, http://bit.ly/2X4yTXg.

[128] Hueth B. & Marcoul P., 2006, Information sharing and oligopoly, http://doi.org/10.1111/j.1467-8276.2006.00903.x.

[129] Rothenberger S., 2015, Influence of price transparency on consumer perceptions, http://bit.ly/2TUYDDA.

[130] Including in the very short term, such as for agricultural products for which delayed harvesting or stocking is possible.

[131] Brooks J., 2018, Market transparency can contribute to a productive food system, http://europa.eu/!ww64Qn (pdf).

[132] Ecorys, 2017, Study on risk management in EU agriculture, http://doi.org/10.2762/387583.

[133] Ecorys, 2017, Study on risk management in EU agriculture, http://doi.org/10.2762/387583.

easily verifiable price data for the assessment of losses in the case of an insurable event. Revenue insurance contracts can be linked to prices in futures markets, but these need to be further developed in the EU[134].

MT can help reduce contract ambiguity, for example by linking contract results to publicly available prices (instead of prices communicated between parties). For example, linking value-sharing agreements along the FSC to product prices that are publicly available may be more effective and lead to higher levels of trust between the parties than depending on parties' communication of downstream sales prices to settle the contract. Ambiguity in contracts can increase transaction costs (for example leading to costly litigation to settle disputes)[135].

Forward contracts are private agreements that define the conditions for buying and selling of a product (including the price) at a date in the future. Forward contracts are used to remove uncertainty from transaction prices. In combination with other types of contracts (including spot market sales), they allow for some, but not excessive, exposure to risk (and to the positive returns from the upside of risk). MT helps reduce the transaction costs of forward contracts by setting, at a low cost, expectations of price developments for both parties.

When sufficiently standardised, forward contracts can be traded in open markets (exchanges), in which case they are called futures contracts[136]. For futures markets to develop, it is important that there is sufficient MT in spot markets: the parties may agree that at the date of the settling of the futures contract there is no delivery of the commodity, but instead to settle the contract through a financial transaction with reference to the commodity's spot market price ('cash settlement')[137]. In turn, futures markets themselves offer FSC operators information about expected future prices, which is a form of increased MT (that is, where they exist, futures markets provide the dual function for operators in the FSC of risk hedging and price discovery). While it is possible to develop futures markets on the basis of price data that are privately held, certain rules might apply that are restrictive when compared to settling contracts on the basis of publicly available prices[138].

A review by the USDA of research on the LMRA finds that the Act not only contributes to better MT (in the sense described in the previous section), but also that futures and cash prices respond to new information better after the introduction of the Act than before. Because it provides futures market participants with information to which they otherwise would have no access, the LMRA improves the functioning of product markets and allows for more effective risk management through futures markets. After the introduction of the LMRA there is also greater convergence between spot and future market prices, an indicator of increased efficiency of futures markets (including in their function of contributing to price discovery)[139].

A particular aspect of risk is price volatility. Price volatility is damaging to agricultural producers as it can cause significant variation in incomes (as mentioned before, every year about 20% of EU farmers see their

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[134] Diaz-Caneja M.B. et al., 2008, Agricultural insurance schemes, http://doi.org/10.2788/88983.

[135] UNIDROIT et al., 2015, Legal guide on contract farming, http://www.unidroit.org/studies/contract-farming.

[136] Futures markets also provide certain important additional benefits over forward contracting, such as the removal of certain risks introduced by forward contracts (like the risk of defaulting by one of the parties). Knowledge of the volatility of prices in the spot market for the underlying product is important for these additional benefits to be made concreted (e.g., a certain amount of money may be requested from the parties buying or selling a futures contract in an exchange as an insurance against the risk that one of the parties may default, in which case knowledge of the price volatility of the underlying product is useful to decide what that amount of money should reasonably be).

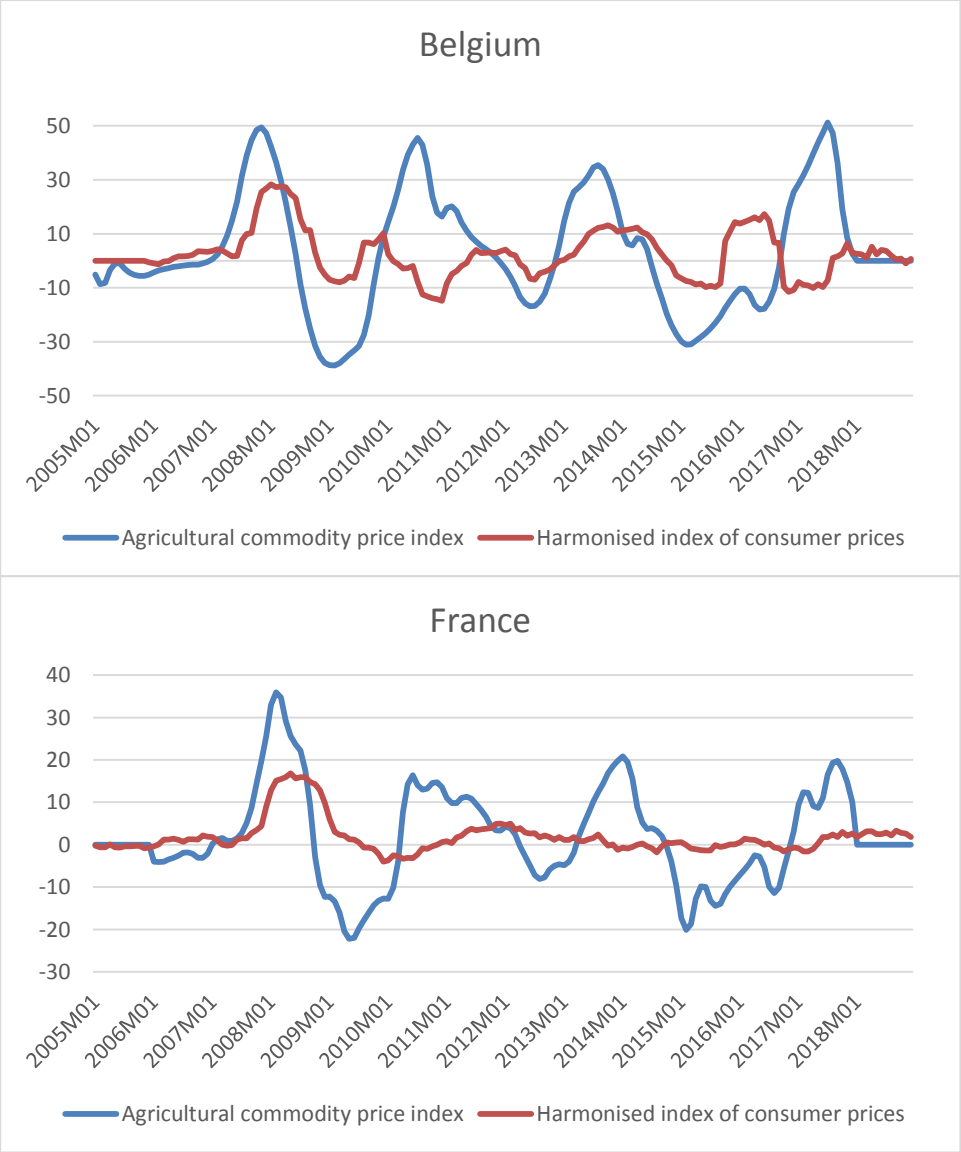
[137] When no delivery of the contract is necessary, speculators can enter the market and provide more liquidity.

[138] Where a benchmark is used in contracts, the entity with proprietary rights to the benchmark should provide adequate and non-discriminatory access to the relevant information needed by operators employing such contracts (Regulation (EU) 600/2014, http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:32014R0600).

[139] Mathews Jr. K.H. et al., 2015, Mandatory price reporting, http://bit.ly/2X4yTXg.

income vary by 30% or more[140]), which can impact, among others, business viability and the potential for farmers to invest (including making it difficult to have access to credit or to repay outstanding loans). Agricultural commodity prices can be volatile for several reasons, such as stock levels (e.g., lower stock levels can increase volatility), changes in oil prices and exchange rates, demand and supply shocks, etc.[141] Prices for agricultural products are typically significantly more volatile than prices downstream in the FSC, as exemplified in figure 6 comparing agricultural commodity prices with prices for consumer products.

Figure 6 - Price trends along the FSC, annual rate of change (%) for agricultural commodity prices and consumer prices (example of liquid milk in Belgium and France)[142]



MT can have a dampening effect on volatility in the market (if the volatility in a market is due to lack of information that leads, for example, to herd behaviour by operators or other inefficiencies)[143]. However, the persistence of high and increasing levels of volatility (even where there is a high level of price

[140] EC, 2018, Agricultural and farm income, http://ec.europa.eu/agriculture/statistics/facts-and-figures_en.

[141] Information on agricultural price information alone is, then, not sufficient to map price volatility.

[142] EC, 2019, Price trends along the food supply chain, http://europa.eu/!vj46pM.

[143] Brooks J., 2018, Market transparency can contribute to a productive food system, http://europa.eu/!ww64Qn (pdf).

transparency[144]) indicates that MT beyond prices may be needed to reduce such volatility. Experts point to the need to understand costs (and cost structures) and margins to understand volatility and price transmission in the FSC, but very few MISs collect this type of data (in the EU only France and Spain do so)[145].

Different public policies and private sector initiatives have been introduced to try to address concerns with price volatility, including contracting (vertical coordination), attempts at creating frameworks for the development of futures contracts, creating flexible credit instruments, etc. Increased MT can support these initiatives, as well as lead to more informed marketing, production and investment decisions, which should have a moderating influence on the effects of price volatility on agricultural producer income. Increased MT can in addition provide the basis for more informed policies to handle price volatility, especially when large price swings occur and there are calls for ad hoc policy responses[146].

4.1.3 Increased trust between operators

Increased transparency has the potential to contribute to increased trust between operators in the FSC. Where transparency is lacking, farmers are more likely to suspect unfair treatment by the buyers of their products, regardless of whether that suspicion is justified or not[147].

For instance, providing farmers with information about prices can force middlemen to make better offers, thus demonstrating that price transparency can benefit farmers in situations where trust was lacking[148]. Farmers can also perceive conflicts of interest when it comes to the rating or grading of their products by traders and slaughterhouses. Yet, integrity and trust in the grading system are essential, given its role in determining prices received by producers. In such contexts, gains can be achieved through greater transparency. Otherwise, producer distrust in the grading system can reduce its usefulness as a feedback mechanism of market signals that might encourage producers to adjust their operations to market requirements, which leads to distinctive inefficiencies[149].

This lack of trust stems from an information imbalance: while typically there is ample data on farmers, and on their products, publicly available, this is not the case for data on downstream operators and on processed products. Once this imbalance is redressed, the problem can move downstream, though: after the introduction of the LMRA in the US, there is now support within the industry for extending mandatory

[144] For instance in the EU's cereals market, which is fully integrated into global markets and on which there is a high level of transparency (including futures markets), there are nevertheless high and increasing levels of volatility (Santeramo F.G. & Lamonaca E., 2019, Drivers of global grain price volatility, http://doi.org/10.17221/76/2018-AGRICECON).

[145] Ménard C., 2018, Market transparency in food supply chain, http://doi.org/10.2760/285157.

[146] 'Finally, an essential ingredient of the strategic response to agricultural market volatility is optimal information on market developments and full transparency. It would be futile to believe that extreme price spikes on international food markets can be predicted with any degree of accuracy – if that were the case, then it would be easier to avoid them. However, the better the market information is that can be made generally available, the more rational the response to a run-up in prices is likely to be at all levels, from private agents through national governments to the international donor community. In particular, it would appear important to be able to distinguish a price explosion that it likely to be transitory from a fundamental and lasting change of market conditions – a distinction that was frequently not made during the 2006-08 crisis' (Tangermann S., 2011, Agricultural market volatility, http://ictsd.org/i/publications/108969/).

[147] In the questionnaire to MSs, the main benefit identified by respondents was that increased MT would contribute to levelling the playing field for farmers (including trust, as well as access to market information, and improving bargaining power; 81% of respondents mentioning this benefit). The same element was identified as the second most likely benefit on increased MT in the specific questionnaire to undertakings (about 25% of respondents mentioning this benefit). See Annexes III and IV, respectively.

[148] Mitchell T., 2017, Information and switching costs in agricultural markets. http://doi.org/10.1093/ajae/aax035.

[149] ACCC, 2017, Cattle and beef market study, http://bit.ly/2zZYOa6; ECORYS, 2011, Competitiveness of the European meat processing industry, http://doi.org/10.2769/11795.

reporting to wholesale prices because lack of trust in voluntarily reported prices implies greater costs for firms to collect reliable market intelligence on prices[150]. However, farmers generally also have fewer resources to acquire commercially available data. Moreover, they typically engage in much fewer commercial transactions for their products than the buyers of their products and, thus, they have a narrower view of overall market developments and less first-hand experience than their counterparts do.

Lack of trust between trading partners increases transaction costs (e.g. longer negotiations to provide for greater contractual protections to be put in place, or for lawyers that double-check the contracts), as it becomes more difficult to establish the basis for agreement[151]. Increased transaction costs can be especially harmful to smaller operators, who have fewer resources to bear these costs and arrive at an agreement[152]. Increased MT can also reduce the cost of finding new business partners or markets (reduced search costs). In this sense, increasing MT can also contribute to increased market efficiency.

Increased market transparency (for instance through the mapping of gross and net margins and related discussions) has the potential to create greater consensus between operators at the different stages of the FSC on what information their negotiations should build on. This means that greater market transparency can improve trust within the chain[153]. Not least, greater market transparency can also help operators expose misleading or biased arguments by supplying better evidence to double-check and validate claims made by stakeholders or policy-makers.

4.1.4 Unfair trading practices and asymmetries in bargaining power

Increased MT can redress unequal bargaining power in the FSC that specifically derives from asymmetric information[154]. Asymmetries in bargaining power in the FSC that are related to asymmetries in information tend to harm those operators that are already in a weaker bargaining position, typically due to sheers size or a lack of alternative trading partner for their products. The lack of MT in the FSC thus compounds existing power imbalances in the FSC. Increased MT would thus tend to benefit above all agricultural producers and producer organisations and SMEs in the FSC.

Market power helps explain price developments, interacting with other relevant factors such as perishability of products or seasonal effects, etc.[155] Active anti-trust policies can help improve the functioning of food supply chains, including improving price transmission[156]. Increased MT that leads to increased market competition in the FSC can be expected reduce rent-seeking by operators with market power[157].

Lack of MT, inequalities in bargaining power, and anti-competitive practices lead to market distortions with potentially negative effects on the competitiveness of the FSC as a whole[158]. Greater MT gives more

[150] Mathews Jr. K.H. et al., 2015, Mandatory price reporting, market efficiency, and price discovery http://www.ers.usda.gov/publications/pub-details/?pubid=37627.

[151] [151] EC, 2018, Initiative to improve the food supply chain (unfair trading practices) – impact assessment, http://europa.eu/!rX64CX.

[152] Adjemian M.K. et al., 2016, Thinning markets in US agriculture, http://www.ers.usda.gov/publications/pub-details/?pubid=44035.

[153] Oosterkamp E. et al., 2013, Food price monitoring and observatories, http://edepot.wur.nl/264471.

[154] Brooks J., 2018, Market transparency can contribute to a productive food system, http://europa.eu/!ww64Qn (pdf).

[155] [155] Baltussen W. et al., 2019, Monitoring of prices and margins, http://doi.org/10.2760/197814; AMTF, 2016, Improving market outcomes, http://europa.eu/!fQ94cP (pdf).

[156] Cacchiarelli, L. & Sorrentino, 2015, Antitrust intervention and price transmission, https://doi.org/10.1186/s40100-016-0046-9; Pagano, M., & Röell, A., 1996, Transparency and liquidity, https://doi.org/10.1111/j.1540-6261.1996.tb02695.x.

[157] [157] Staatz J. et al., 2014, Measuring the impact of Market Information Systems. http://doi.org/10.1684/agr.2013.0631.

[158] Glöckner J., 2017, Unfair trading practices in the supply chain, http://doi.org/10.1093/jiplp/jpx035.

bargaining power to farmers, including vis-à-vis middlemen who facilitate sales[159], and creates a more open trading environment, fostering a more efficient market system for all stakeholders[160]. In particular, supplier bargaining power can be strengthened by improved MT[161]. Asymmetric information (in combination with incomplete contracts, switching costs and asymmetric enforcement costs) allows firms with significantly greater bargaining power to inflict unfair trading practices (UTPs) onto their commercial partners[162]. Lack of transparent prices may also contribute to price discrimination, which can cause weaker parties to get worse deals[163]. Thus, a lack of MT generally benefits the party that already holds greater bargaining power (frequently due its sheer size), i.e. it contributes to a weaker position of farmers and SMEs and can make them more vulnerable to UTPs.

Consequently, some MSs' prohibitions of UTPs include general clauses and principles that require, for instance, compliance with principles of transparency and respect for free market competition[164]. However, practices that are commonly considered UTPs are difficult to measure due to poor and incomplete data. Much of the relevant information is private and companies involved in UTPs are not willing to reveal it. Therefore, there is an urgent need for increasing transparency within the FSC. This would not only be of great importance for policy-makers – and the effectiveness of UTP regulations – but also for researchers[165]. Because currently the knowledge accumulated on UTPs has scope for improvement there is an imperative for additional research on the topic and for measuring more precisely the economic effect of such practices[166].

Data are especially lacking at the processing and trading stages of the FSC. It is precisely at these intermediate stages (for example, where large processors contract with large food distributors and retailers) that transparency is critically necessary if research is to cast light on questions of concentration, competition, and price transmission. And while price data are clearly of special importance in this regard, data on quantities transacted, market structures, and contractual arrangements are also required to link price transmission results to underlying causes and to assess their distributional implications. Yet, the available data do not permit addressing many of the most pressing questions about food prices and the performance of the FSC in a consistent manner across commodity sectors and MSs[167].

4.1.5 Producer organisations

Agricultural producer organisations – groups of farmers that have formed on their own initiative and are controlled by them, such as cooperatives – are important players in the FSC. By having their members work closely together and carrying out a wide array of activities, producer organisations strengthen farmers' position vis-à-vis other, more powerful, operators.

Producer organisations can assist their members by making forecasts for future market demand (quality and volume). This can help farmers adapt their production and, for the longer term, make better investment decisions (in anticipation of structural changes). The effective fulfilment of these roles relies, among others, on a clear and comprehensive view of the direction for downstream demand for their products. Producer

[159] Lokanathan S. et al., 2011, Price transparency in agricultural produce markets, http://bit.ly/2G0LzKr.

[160] Tollens E., 2006, Market information systems in sub-Sahara Africa, http://purl.umn.edu/25590.

[161] Picot A., 1989, Information management, http://doi.org/10.1016/0268-4012(89)90047-9.

[162] Marcantonio F.D. et al., 2018, Unfair trading practices, http://ageconsearch.umn.edu/record/275886.

[163] Austin D.A. & Gravelle J.G., 2007, Price transparency, http://fas.org/sgp/crs/secrecy/RL34101.pdf.

[164] Cafaggi F. & Iamiceli P., 2018, Unfair trading practices, http://doi.org/10.2760/946607.

[165] Fałkowski J.C. et al., 2017, Unfair trading practices in the food supply chain, http://doi.org/10.2760/800.

[166] EC, 2018, Initiative to improve the food supply chain (unfair trading practices) – impact assessment, http://europa.eu/!rX64CX.

[167] McCorriston S. & Cramon-Taubadel S.v., 2016, Transparency of food pricing, http://bit.ly/2SBpuaZ.

organisations can also achieve synergies and realise economies of scale when processing and marketing the products of their members[168].

Regulation (EU) 1308/2013[169], offers agricultural producer organisations the possibility of becoming recognised producer organisations. This offers benefits in the form of a derogation from the application of EU competition rules (namely of the 'cartel prohibition' of Article 101 (1) of the TFEU). To be recognised by MSs, producer organisations must, among others, pursue the adjustment of production to demand, the stabilisation of producer prices, research on economic competitiveness, the development of markets, or the provision of technical assistance for the use of futures markets[170] – all of which can benefit from greater MT. On the other hand, as producer organisations can also provide market information to farmers, balance bargaining power in the FSC and increase farmers' competitiveness and welfare[171].

Similarly, in the EU recognised interbranch organisations – which are self-organised, vertically integrated entities created by different players and branches of the FSC[172] – can play an important part in allowing dialogue between operators and in promoting MT[120]. Indeed, this is one of the five objectives of such organisations in the EU, which may increase the bargaining power of farmers[173].

However, while information sharing tends to benefit consumers and farmers, it has ambiguous consequences for profits of other operators in the FSC: while the sharing of information allows operators overall to better estimate future demand, each operator on their own has an incentive not to disclose all their information. In this context, cooperative bargaining can be a solution, and producer organisations can be institutional responses to market imperfections[174].

Communication – including the exchange of information by farmers in producer organisations – is thus integral to trust and the improvement of the functioning of the FSC, not least because it aids transparency in the business environment and in price formation[175]. Moreover, by facilitating the exchange of information also between producers and end-users (in situations where there is a growing importance of quality variability in the marketplace), producer organisations can help farmers capture income gains[176].

By making the market more transparent and thereby reducing transactions costs, producer organisations support the economic well-being of their members. However, even where markets are transparent, most individual producers are too small to obtain interesting trading partners, resulting in a lack of market opportunities or an adverse bargaining position. In this case too producer organisations can be a solution to identify and offer new markets to their members[177].

According to a consultation by the Commission, producer organisations themselves consider MT important for their work[178]. For instance, the General Committee for Agricultural Cooperation in the EU (COGECA) as well as various national associations of cooperatives agreed that collecting and publishing information on agricultural markets at EU level brings benefits, compared to what the national public or private systems of

[168] EC, 2019, Producer and interbranch organisations, http://europa.eu/!Kg44jK.
[169] Regulation (EU) 1308/2013, http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:32013R1308.
[170] EU, 2013, A common organisation of the markets in agricultural products, http://europa.eu/!gv48CY.
[171] Sin A. et al., 2015, About asymmetries in cow milk chain in Romania, http://bit.ly/2Gbt2uO.
[172] EC, 2019, Interbranch organisations, http://europa.eu/!xb76TP.
[173] Arcadia et al., 2016, Study on agricultural interbranch organisations, http://doi.org/10.2762/901778.
[174] Hueth B. & Marcoul P., 2006, Information sharing and oligopoly, http://doi.org/10.1111/j.1467-8276.2006.00903.x.
[175] Fischer C., 2007, Trust and economic relationships, http://doi.org/10.1080/16507540701192543.
[176] Jones E. & Mercier S., 1999, New grain and oilseed market structures, http://doi.org/10.2307/1349984.
[177] Bijman J., 2007, Producer organisations in agrifood chains, http://doi.org/10.3920/978-90-8686-600-7.
[178] EC, 2017, Initiative to improve the food supply chain, http://europa.eu/!Cr87RM.

information collect and publish. According to their responses, precise and timely information on market signals is necessary for operators to counter information asymmetries, anticipate market developments, react to market imbalances, enable the functioning of futures markets, and ensure better and more stable prices. In their view, related data collection should cover the entire FSC, and not only prices but also margins.

4.1.6 Agricultural producers and SMEs

The CMO Regulation offers the legal structure within which markets for agricultural products operate in the EU, with the aim of meeting the objectives in the TFEU. Notably, one of the objectives for EU policy in the TFEU is to ensure a fair standard of living for the agricultural community (Article 39 TFEU)[179]. It is to this purpose and to ensure that CAP interventions are effective that the CMO Regulation includes provisions to ensure MT in the FSC. It is thus important that the effect of measures that increase MT in the FSC on the agricultural community be understood. Given the frequently small size of agricultural producers, similar considerations may be relevant to other smaller operators in the FSC (SMEs).

The effect of increased MT on agricultural producer prices has been considered in some of the literature. Among the possible effects of increased MT are increased competition in the FSC, the reduction of uncertainty for operators, and generally increased efficiency in decision-making[180]. Increased MT leading to increased market competition in the FSC can be expected to increase production volumes and have a reduction in rent-seeking by operators with market power[181], which benefits farmers through increased demand for their products and higher prices[182]. Increased MT can also reduce the perception of risk for processors, which, for risk-averse processors similarly results in increased demand for agricultural producers' products[183]. Understanding market developments downstream can also allow agricultural producers and producer associations, as well as SMEs, to seek opportunities for disintermediation, to shorten the supply chain and obtain a greater share of value added from sales to consumers. In general, producer organisations can assist small farmers to benefit from increases in market transparency.

Similar positive effects can be expected where there is a pro-competitive impact in markets for SME products from increased MT. Studies in other policy areas of the effects of increased MT that take into account operator size have found that increased MT has benefitted proportionally more smaller operators than larger operators in the same market segment, with relatively higher reductions in transaction costs for the former[184].

In the stakeholder questionnaire, 80% of SMEs state the current level of market transparency has a negative impact in their sector to a large (60%) or some extent (20%). The remaining 20% assessed the negative impact as minor. No SME respondent mentioned there was no negative impact. 96% of agricultural sector respondents state that the current level of market transparency has a negative impact in their sector to a large or to some extent[185].

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[179] This objective should be weighed with the other objectives listed in Article 39 TFEU.

[180] Panagiotou D., 2018, Market power effects of the LMRA, http://doi.org/10.1007/s10842-018-0280-9.

[181] Staatz, J., et al., 2014, Challenges in measuring the impact of Market Information Systems. http://doi.org/10.1684/agr.2013.0631.

[182] Boyer C.N. & Brorsen B.W., 2013, Changes in beef packers' market power, http://doi.org/10.1093/ajae/aat005. (Positive effects of increased MT introduced by the LMRA had previously sometimes been identified in the literature and sometimes not. Boyer & Brorsen state that the latter may be due to the use of less appropriate methodologies.)

[183] Mathews Jr. K.H. et al., 2015, Mandatory price reporting, http://bit.ly/2X4yTXg.

[184] Bessembinder H. & Maxwell W., 2008, Markets: Transparency, http://doi.org/10.1257/jep.22.2.217.

[185] See previous section.

4.2 Market transparency and the work of public authorities

An adequate level of MT allows policy makers to design effective policies for the FSC through an improved knowledge basis (improvements to evidence-based policy), monitoring of policy and evaluation of impacts, and improvements to the enforcement of competition rules[186]. In addition, increases in MT can lead to the positive effects of related market-oriented public policies being greater (the 'multiplier' effect).

4.2.1 Better policy-making

Access to market data is a key element for an evidence-based regulatory framework. Increased access to MT information can inform better public policy aimed at improving the functioning of the FSC. MT can offer a better understanding of market operation to policy-makers and improve the focus of public market development activities[187]; better preparing and responding to market crises[188]; allowing for better monitoring of the impacts of public policy; lowering the risk of negative unintended consequences of regulation; and by increasing the effectiveness of other policies that promote the market-orientation of farmers[189]. There is also a reduction in the risk of regulatory capture occurring through asymmetries of information between the regulator and the regulated industry[190].

There is evidence that a lack of MT in the global FSC contributed to high volatility and market crises in the past[191]. Increased transparency would allow operators to better manage volatility and this would serve as a preventative measure against pressures for public intervention, for particularly damaging downside effects of volatility[192]. In the event of a market crisis, the ability to access relevant market data quickly can be crucial in forming an effective response by public authorities[193].

Increased MT also assists public policy by communicating more effectively market signals to agricultural producers of structural shifts in demand at consumer level, including through public policy (for example public interventions in support of health and nutrition policies or changes in consumer preferences for certain types of products), which reduces pressures for public intervention or assistance to mitigate structural changes and improves the coherence of agricultural policy and other public policies. Some structural changes can occur within relatively short timeframes and the ability to observe such changes occurring downstream in the FSC in a timely manner can benefit public authorities and agricultural producers (e.g., for some types of products and in some MSs there were significant shifts in demand from conventional to quality-differentiated products, such as demand for certain organic products, taking place in short periods of time).

[186] Ménard C., 2018, Market transparency in food supply chain, http://doi.org/10.2760/285157.

[187] Brooks J., 2018, Market transparency can contribute to a productive food system, http://europa.eu/!ww64Qn (pdf).

[188] Oosterkamp E.B. et al., 2012, Food price monitoring, http://library.wur.nl/WebQuery/wurpubs/fulltext/264471.

[189] Kizito A.M. & Staatz J., 2014, Improved agricultural market information, http://doi.org/10.1684/agr.2014.0709.

[190] Gönenç, R., et al., 2000, The Implementation and the Effects of Regulatory Reform, https://doi.org/10.1787/413754754615.

[191] FAO et al., 2011, Price volatility in food and agricultural markets, http://bit.ly/2ITfqpE.

[192] Garrido A. et al., 2016, Agricultural markets instability, http://doi.org/10.4324/9781315676265.

[193] OECD, 2015, Food price formation, http://oe.cd/2u2 (pdf).

Box 5 - Uses of EU market transparency data[194]

Outlook analysis

- The short-term outlook: origin, change and impact
- The long-term outlook: the internal preparation cycle and outreach
- Stakeholders: MSs and the management committee process; OECD/FAO outlook cycle

Analysis

- Impact Assessment of main CAP reforms
- Ad-hoc analyses: trade agreements, market crises, other (e.g. risk management)
- Internal AGRI analyses and specific requests

Public information

- Data and the dashboards: market management and potential crisis anticipation
- Statistical briefs, factsheets, FADN
- Outlook Conference process; Workshops

Generally, a much wider set of data than what is available to public authorities is necessary for effective policy analysis, and the current piecemeal access to those data is impeding the design of effective food and agricultural policies. How to increase access to data by public authorities, both through mandated increases in MT and through ad hoc arrangements with stakeholders, needs to be discussed (while addressing concerns with confidentiality). In general, there is a mutual interest between the public and private sectors in the design of effective policies to support productivity, sustainability and resilience in the FSC[195].

Box 6 offers an illustration of how market data collected in Hungary is put to use through the Hungarian MIS (AKI).

Box 6 - The Hungarian Market Information System

The Hungarian Research Institute of Agricultural Economics, founded in 1954 with the objective of supporting policy-making, has been managing a MIS for the last 20 years[196]. The system collects information on operators along the FSC (producers and processors, wholesale markets and livestock auctions, as well as, trough external contractors, consumer prices) for 13 FSC sectors. As of 2018, the system had received close to 36 thousand transmissions.

The Hungarian MIS meets the objective of complying with mandatory reporting of price information to the European Commission, supplying up-to-date market information to operators and professional organisations, and generally allowing the follow-up of the latest market developments. Other significant benefits of the information provided include helping determine land lease rates, easing access to agricultural credits, and helping operators in operational/marketing/strategic decision-making.

The system has also yielded significant benefits to the Hungarian government and to public bodies. The system has, for example, been used as a basis for *ex ante* and *ex post* impact assessments of VAT reductions in Hungary.

The prices collected are used by public bodies in diverse areas, such as:

- defining reference prices for the Hungarian Agricultural Risk Management System, which is a

[194] Haniotis T., 2018, Market transparency in the EU, http://europa.eu/!MH34Jp (pdf).

[195] Brooks J., 2018, Market transparency can contribute to a productive food system, http://europa.eu/!ww64Qn (pdf).

[196] http://sertesinfo.aki.gov.hu/.

mandatory scheme for farmers;

- defining reference prices for calculating the value of grains in interventions;
- providing prices needed for consumer price comparability studies;
- providing benchmarks for the evaluation of public procurement bids;
- providing prices needed in cases of tax controls and court processes;
- helping discover deficiencies in displayed prices on retail shelves;
- helping define new minimum prices for bread.

The cost of managing the system has been estimated at about EUR 13.5 thousand per sector of the food supply chain. The Research Institute deems the administrative burden of supplying information marginal compared to the above-listed benefits. FSC operators in Hungary are supportive of the MIS. Currently the possibility of linking the existing data with other datasets to enrich the analytical potential of the data is being explored.

Several agricultural policies in the EU are aimed to supporting agricultural producers to a more market-oriented type of production. Examples of these include the establishment of POs, farmer training, or public support for certain types of investment or disinvestment activities. Other public actions support the same objective of improving market-orientation through co-financed public investment in rural infrastructure, for example to better link producers in rural areas to their buyers. Increased MT may thus contribute to a greater impact of these policies, by allowing operators to achieve a greater return on their investments to become more market-oriented, be it in terms of developing their market operation education and skills, physical investment to become more efficient, or others. In this sense, MT can benefit other public policies through a multiplier effect.

4.2.2 Improved enforcement of competition rules

The level of MT in the FSC affects the ability of competition authorities to effectively maintain competition in the market. Competition authorities face asymmetric information vis-à-vis firms operating in the market, and the larger that asymmetry the larger the possibility that anti-competitive behaviour goes unnoticed[197].

Possible anti-competitive practices in the FSC through increases in MT (e.g. cartels) are only a risk where there is already a significant susceptibility for such practices[198]. It is possible that anti-competitive practices already exist but are difficult for the regulator or for researchers to observe, in particular due to a lack of data[199]. In these cases there can be said to be 'internal transparency' (cartel members have access to each other's price data in some non-public form) but no 'external transparency' (those outside the cartel, including competition authorities, are purposefully cut off from relevant information by the cartel)[200]. It can also be expected that in industries where such anti-competitive practices exist, operators that benefit from them will oppose publicly mandated increases in MT[201].

Information on prices alone is unlikely to constitute proof of cartel behaviour, and more precise evidence is needed to demonstrate collusion. However, price data can offer competition authorities a useful screening mechanism that can help target future investigations[202]. In a recent report on the application of competition rules to the agricultural sector, it was found that, in the FSC, processors were most frequently subjected to investigations by competition authorities and also frequently found to be infringing competition rules[203], incidentally this is the segment of the FSC where there is typically less MT.

4.3 Other benefits of market transparency

4.3.1 Increased knowledge basis for analysis and research

Besides FSC operators and public authorities, a third group with links to the FSC typically benefits from increases in MT, the research community[204]. Researchers can offer a better and rigorous understanding of the fundamentals of price movements and of the structural characteristics of the FSC. Better and more research on the nature of price movements in agri-food products, in turn, can help policy makers develop better public policies, and understand better the nature of market volatility and of market crises. Better knowledge on the structural nature of the FSC can result in a better understanding of the relationships between operators in the FSC, from farmers to consumers, in terms of market and bargaining power, which can be an important input to build trust within the FSC[205]. For instance, a review of the literature on the LMRA highlighted the usefulness of being able to rely on economic research to support policy change

[197] Gugler P., 2015, Transparency and competition policy, http://doi.org/10.1093/oxfordhb/9780199917693.013.0006; Brooks J., 2018, Market transparency can contribute to a productive food system, http://europa.eu/!ww64Qn (pdf).

[198] OECD, 2001, Competition policy roundtable: Price Transparency, http://oe.cd/2vj (pdf).

[199] Jenny F. et al., 2011, Les échanges d'informations, http://bit.ly/2ImJkSP.

[200] Gugler P., 2015, Transparency and competition policy, http://doi.org/10.1093/oxfordhb/9780199917693.013.0006.

[201] OECD, 2001, Competition policy roundtable: Price Transparency, http://oe.cd/2vj (pdf).

[202] Schinkel M.P., 2007, Forensic economics in competition law enforcement, http://doi.org/10.1093/joclec/nhm033; OECD, 2018, Market examinations in Mexico: Case study of the chicken meat market, https://www.oecd.org/daf/competition/market-examinations-in-mexico-chicken-meat-market-2018.htm.

[203] EC, 2018, Application of Union competition rules to the agricultural sector, http://europa.eu/!Cx69Ku.

[204] Ménard C., 2018, Market transparency in food supply chain, http://doi.org/10.2760/285157.

[205] When asked to identify the top three types of beneficiary from increased MT, 19% of respondents to the MS questionnaire mentioned academia.

discussions[206]. At the same time, the USDA found that the data obtained through the LMRA facilitates research on related topics, which helps future decision-making[207].

To the extent that market transparency helps reveal the composition of food prices, it can e.g. also contribute to improving macro and micro research, which currently is limited to (mainly) using aggregate price information as an input into econometric models. Such information can be of key importance for sound decision making, especially in the context of competition law[208]. Likewise, analyses of market structure and behaviour issues in the FSC could be improved with better data on procurement transactions, operating costs and revenue, and contractual arrangements. If sustained, such analyses provide a good opportunity to generate timely, meaningful information as the industry evolves and market conditions change[209]. Similarly, while there are many different models on vertical markets, modelling results are sensitive to underlying assumptions. Consequently, currently these models can be hard to evaluate because of a lack of data on wholesale prices[210].

4.3.2 Consumers

While there is some variation from market to market, consumers are increasingly choosing products not on the basis of price alone, but on a widening range of 'quality' attributes, such as nutrition profile, convenience, origin, local or organic production, vegan or animal-welfare mindful products, or products respecting other dietary or ethical standards.

In the EU, food expenditure by the poorest consumers (from the lowest income quintile) ranges from 20% to 30% of total expenditure. Within this income quintile, the rates of households classified as food deprived range from about 10% to about 80%[211]. This income group is therefore particularly vulnerable to non-competitive (i.e. higher) pricing for food products, and may benefit the most from effective MT increases[212].

An increase in MT in the FSC can benefit consumers through different channels[213]. There are often asymmetries in price transmission in the FSC. Asymmetries in price transmission from agricultural producer to retailer[214] may be perceived to lead to consumer harm. While there may be justifiable underlying reasons for such asymmetric price transmission, these remain empirically unproven, in part due to a lack of comprehensive information on the operation and structure of the FSC.

More generally, increased MT can lead to significant gains in consumer and producer welfare, as it improves the efficient functioning of markets[215], including by stimulating competition and lowering informational

[206] Koontz S.R. & Ward C.E., 2011, Livestock mandatory price reporting, http://doi.org/10.2202/1542-0485.1254.

[207] Mathews Jr. K.H. et al., 2015, Mandatory price reporting, market efficiency, and price discovery, http://www.ers.usda.gov/publications/pub-details/?pubid=37627.

[208] ECORYS, 2011, Competitiveness of the European meat processing industry, http://doi.org/10.2769/11795.

[209] USDA, 1996, Concentration in the red meat packing industry, http://www.gipsa.usda.gov/psp/publications.aspx.

[210] Sheldon I., 2019, Industrial organization of the food industry, http://doi.org/10.4324/9781315623351.

[211] García-Germán S., 2016, Impacts of increased food prices and volatility, http://europa.eu/!nQ87Jt.

[212] Castellari E., 2018, Retailers' strategies and food price dynamics, http://doi.org/10.1016/j.foodpol.2017.12.005.

[213] Whether there is a net benefit to consumers depends mainly of whether increased MT will lead to increased competition in the FSC, or whether it will lead to increased collusion between operators in concentrated segments of the FSC – see section 5.4 on addressing risks of collusion (Njoroge K. et al., 2007, Effects of the US Livestock Mandatory Reporting Act, http://www.jstor.org/stable/20111964).

[214] When there is an increase in agricultural producer prices, that increase is quickly and fully passed on to consumers, but when agricultural producer prices decrease, retailers pass on the decrease to consumer prices only slowly and partially.

[215] Jensen R.T., 2010, Information, efficiency, and welfare, http://doi.org/10.1111/j.1574-0862.2010.00501.x.

barriers to entry for new firms. Greater price transparency along the supply chain also enables operators to meet consumer preferences more precisely[216].

A questionnaire specifically targeted at consumer organisations was published to gather views on the likely consumer effects of increased MT. Three national consumer organisations replies to the questionnaire were received, all supporting increased MT in the FSC. According to the respondents, a lack of transparency along the FSC diminishes consumer trust in the FSC and in public administrations, as well as limits the ability of consumers to make informed choices. More details of the results are given in Annex V.

According to 33% respondents to the questionnaire to MSs, consumers are among the top 3 groups that can be expected to benefit from increased MT, and no MS believes that consumers would be harmed by increased MT. According to respondents to the specific questionnaire to undertakings, consumers are among the groups least likely to be penalised by increased market transparency, and rank 4th in those most likely to be benefitted.

By increasing transparency on markets for agricultural inputs, increased MT generates a positive 'risk effect' that reduces the perceived cost of uncertainty for processors. This provides economic incentives for increased demand and increased production and, thus, also generates welfare gains for consumers[217]. This effect has been observed in the USA, where the introduction of the LMRA has reduced informational barriers for meat packers. Consequently, livestock producers benefitted from increased demand for their products, and consumers from a greater supply[218].

Increased MT can also offer incentives for innovation in the FSC, which could result in decreased retail and distribution prices, higher quality products, and increased choice for consumers. Increases in MT can stimulate innovation through both greater competition and efficiency in the FSC and increased trust and collaboration between partners in the FSC[219].

However, while providing consumers with better information is commendable, using misleading and simplistic data is not helpful[220]. For instance, the publication of data on farmers' share of the added-value in the FSC has contributed to a widespread misunderstanding of the true economic relation of agriculture to food processing and distribution, as it made FSC operators appear as competitors for a fixed value, rather than as partners in the production of greater value overall. A small share of a big cake can be significantly bigger than a larger share of a smaller cake, i.e. farmers can benefit from added value in the FSC (a larger cake) even though this may lower their share in the added value in the FSC[221]. Thus, a business and policy focus on the FSC as a whole can contribute to a better functioning FSC and to increased consumer welfare.

Finally, increased MT can also contribute to improved public health policies, by providing information about how consumers determine their food choices and insights into what can be done to encourage healthier food choices[222].

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[216] Chi Chung K. et al., 2010, Evaluating the impacts of ICT on trade in fruit and vegetables, http://purl.umn.edu/59077.

[217] Njoroge K. et al., 2007, Effects of the US Livestock Mandatory Reporting Act, http://www.jstor.org/stable/20111964.

[218] Mathews Jr. K.H. et al., 2015, Mandatory price reporting, http://bit.ly/2X4yTXg.

[219] Renwick A. et al., 2014, Innovation in the Irish Agrifood sector, http://bit.ly/2XcoKIj (pdf).

[220] Matthews A., 2015, Farmers' share of food chain value added, http://bit.ly/2TSNFhH.

[221] Brester G.W. et al., 2009, Evaluating the farmer's-share-of-the-retail-dollar statistic, http://bit.ly/2NfSFui; Lusk J., 2018, Farmer's share of the retail dollar, http://bit.ly/2T42ukq.

[222] Brooks J., 2018, Market transparency can contribute to a productive food system, http://europa.eu/!ww64Qn (pdf).

4.3.3 Environmental sustainability and food waste

MT can play an important role in improving the sustainability of the FSC[223]. Differences in the availability of and access to information can have a profound influence on decision-making[224]. For instance, risk-averse operators faced with uncertainty tend to misallocate resources and to cause unnecessary environmental damage. Likewise, food waste in the FSC can be the result of mismatches between supply and demand caused by unclear or distorted price signals[225].

There is also an increasing demand from consumers and investors for responsible production practices, and related initiatives to increase the transparency of the FSC are becoming more important[226]. Providing clearer price signals to agricultural producers who deliver environmentally friendly products can stimulate the development of these markets.

Cross-sectional data across supplier firms and their transactions with retail partners has been used to analyse 'take-back agreements' between retailers and food processors. Such agreements can lead to food waste when stronger operators have a low incentive for accurate inventory forecasting if they do not have to bear the costs of the unsold products. Similarly, lack of MT can prevent potential new producers from entering an oligopolistic market where they must absorb wastage cost that they cannot forecast[227].

Low levels of MT and poor demand forecasting and replenishment systems in the FSC often drive over-production and significant levels of wastage[228]. For instance, when producers' expectations about future market prices are wrong, they are more likely to make bad production decisions that result in food waste (e.g., when actual future market prices do not cover the expenses of harvesting the crops they produced)[229]. Similarly, distributors and retailers may overstock (perishable) food products due to inaccurate ordering and forecasting demand. And while some operators in the food service sector have advanced planning tools that can forecast the demand of different food and beverages based on historical consumption data, weather conditions and other key parameters, this only underlines the importance of having access to market-relevant data[230].

[223] Brooks J., 2018, Market transparency can contribute to a productive food system, http://europa.eu/!ww64Qn (pdf); Bastian J. & Zentes J., 2013, Transparency as a key prerequisite, http://dx.doi.org/10.1080/09593969.2013.834836.

[224] Gardner T.A. et al., 2018, Transparency and sustainability, http://doi.org/10.1016/j.worlddev.2018.05.025.

[225] EC, 2018, Support for strategic plans, http://eur-lex.europa.eu/legal-content/EN/ALL/?uri=CELEX:52018SC0301.

[226] Fowler M.D., 2018, Blockchain as a solution for certification in an age of 'do-good' business, http://bit.ly/2DnkbDs.

[227] Ghosh R. & Eriksson M., 2018, Food waste due to retail power, http://doi.org/10.1016/j.gfs.2018.10.002.

[228] Parfitt J. et al., 2010, Food waste within food supply chains, http://doi.org/10.1098/rstb.2010.0126.

[229] Priefer C. et al., 2016, Food waste prevention in Europe, http://doi.org/10.1016/j.resconrec.2016.03.004.

[230] Bräutigam K.-R. et al., 2014, Options for cutting food waste, http://doi.org/10.2861/33619.

5 Implementation issues in increasing market transparency

Increases in MT can involve some actual and potential costs and practical adaptations that have to be borne in mind at the design stage of the policy[231]. Chief among these are the additional costs of data collection and transmission by private operators; the additional costs to public administrations of collecting, quality-checking and publishing the data (as well as, possibly, the additional costs of providing data analysis for the new data); and the concern that the publication by the EU of additional market data to what is currently available may increase the risk of collusion in the FSC, to the detriment of agricultural producers and of consumers. Other relevant issues are the effect that increased MT in the FSC would have in relation to third country competitors; that the new data publicised is of sufficient quality to serve the aims of MT; and that the analysis and communication around the data collected provides useful information to stakeholders that is relevant, timely and unbiased.

5.1 Costs to public administrations

The study on *Food price and margin monitoring: Alternative methodologies in the EU*[232], coordinated by the Commission's Joint Research Centre, assesses the costs that accrue to public administrations for their monitoring of food prices and margins. The study is based on the collection of information on ten different public MISs, through direct exchanges with representatives of those MISs (statistical offices, ministries, observatories, etc.) from Belgium, Bulgaria, France, Lithuania, the Netherlands and the EU. The researchers then categorised these approaches in four classes, according to the extent to which they fulfilled pre-defined quality criteria, with class 1 comprising the lightest approaches and class 4 representing 'ideal' food price and margin monitoring (that none of the analysed approaches in practice conform with).

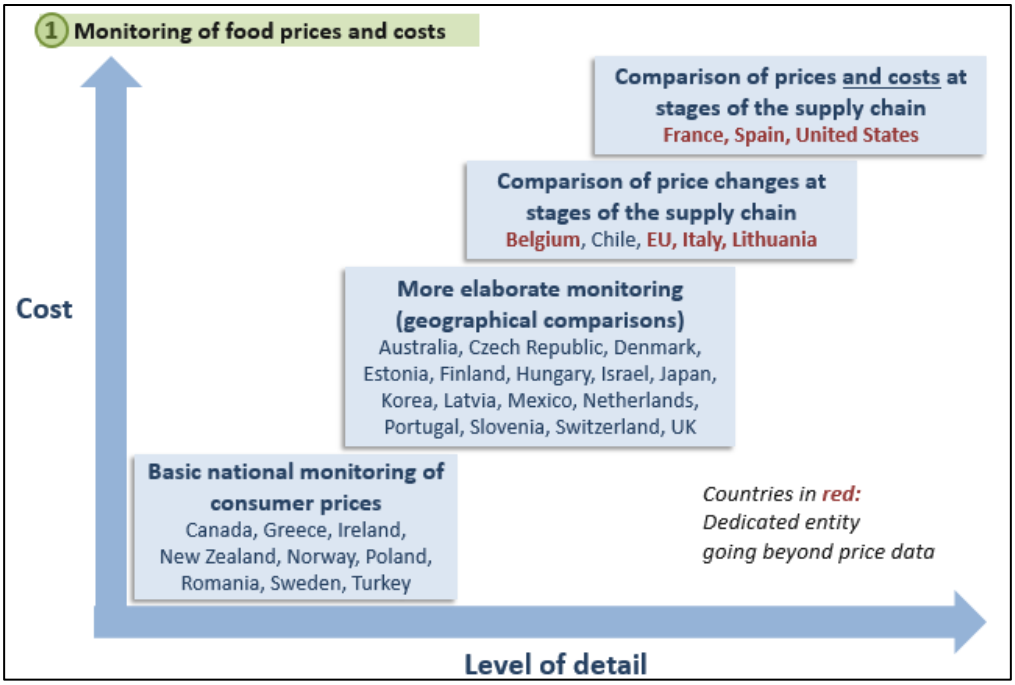
To varying degrees, the data collected on costs covers information on the total costs of the monitoring initiatives, the costs to produce the output of specific monitoring approaches, and the value of staff time spent on the monitoring – all of which greatly depend on the scope of the monitoring (such as numbers of products, supply chain stages or geographical areas covered). This makes it difficult to compare the different classes of approaches, but if only the national approaches are considered and the EU-wide monitoring efforts are excluded, the higher classed monitoring approaches also show higher costs, and monitoring efforts that cover *more stages of the FSC* are likewise more costly than those that cover fewer stages. In the study, the average costs per monitored product or per monitored sector are EUR 34,000 per year if the monitoring covers no more than three stages of the supply chain, EUR 40,000 per year if the monitoring covers four stages of the supply chain, and EUR 58,000 per year if the monitoring covers five and more stages.

Even though the study finds a clear relationship between the scope of the monitoring in terms of *products covered* and the costs, it also finds that the variation in the costs is very large. Per sector or product per year the average costs range between EUR 2,000 to EUR 80,000. This is mainly due to the amount of primary data collection that is done for each approach and the number of indicators used, and the inclusion of costs and margins besides price data in the data gathering of the observatory. Note the study looks at total and average costs of specific public MISs, not at the marginal costs of collecting more data in the case where the MIS is already in place. Generally, the higher the level of detail of the system the more costly it is (see figure 7).

[231] Russo C., 2018, Considerations on market transparency, http://europa.eu/!vW69PU.

[232] Baltussen W. et al., 2019, Monitoring of prices and margins, http://doi.org/10.2760/197814.

Figure 7 - The cost to public administrations of increased MT increases with the level of detail[233]



5.2 Costs to operators in the FSC

There may be costs associated with increased market transparency for those having to report data to public authorities[234]. Variables affecting operator costs include whether the operator already has a data gathering system in place (for own use or for reporting to third-parties, including public authorities or private market data reporting agencies), if the system exists, whether that system can be easily adapted to new reporting obligations[235], what are the one-off capital and human resource costs of adapting the system or putting a new system in place, and what are the running costs of operating such a system[236].

One possible approach to increasing MT in the FSC is to mitigate operator costs, for example by targeting increases in transparency to sectors and operators already reporting data to public authorities and maintaining the current reporting mode (for example, not requiring the use of automatic, high frequency data reporting based on IT systems). Note this approach would reduce the negative impacts in terms of costs, but also limit to an extent the potential for a positive impact of the policy (low frequency data can be less useful to operators making buying and selling decisions with higher frequency; large scale data collection, including of many product types, requires automated systems). Other possibilities include restricting the type of MT information communicated (to prices and quantities, rather than data on costs and margins).

[233] Brooks J., 2018, Market transparency can contribute to a productive food system, http://europa.eu/!ww64Qn (pdf).

[234] In the specific questionnaire to undertakings in the FSC, cost was the second most highly mentioned potential risk from increasing market transparency, expressed by 46% of respondents (mostly from trade, business or professional organisations and, of these, mostly in processing sector).

[235] If own-use systems or existing systems to report to public authorities are in a format compatible with public reporting requirements, for example they are compatible with automatic reporting based on IT systems.

[236] For example, a fully automated reporting system similar to the USA experience with the LMRA (where data on transactions for certain processed products is automatically transmitted to public authorities) may have relatively high set up costs but, once it is in operation, has negligible operating costs. Conversely, a data system based on data inputting by individuals onto commonly used electronic spreadsheets would have negligible set-up costs, but higher operational costs (labour costs, in this case).

A study by the JRC analyses the implications in terms of costs to operators from increased MT within the FSC (see Annex VII). The study is based both on an online questionnaire and on structured interviews with stakeholders in the FSC that have expertise in data collection and reporting, both for internal company use and to report to third parties[237]. Respondents were asked about both set-up costs and running costs for a market data reporting system. Respondents were private companies and associations representing these companies. Overall, 73% and 53% of the respondents report negligible costs or costs below EUR 10,000 for set-up and running costs, respectively (excluding respondents that did not provide or did not know the costs). For 88% of respondents set-up costs are less than EUR 50,000. Annual total running costs are less than EUR 50,000 for 83% of respondents

5.2.1 Online questionnaire

There were 113 responses to the online questionnaire, with a majority of respondents (82%; 93 respondents) having a market data reporting system in place. Of those, about 68% report data to a third party (63 respondents)[238]. Of the respondents that report to a third party, 23 respondents provided information on estimated set-up costs and 30 on estimated running costs, and much of the analysis focuses on the results of these groups. The type of data most frequently reported to a third party, according to respondents, refers to production volumes, output prices, trade volumes, and trade values. The type of data least frequently reported refers to net margins, gross margins, transport costs, and 'other' (such as sustainability indicators, for example carbon footprints).

Of the respondents providing information on set-up costs, 87% (20 respondents) stated that costs of providing data to a third party was lower than 20% of the overall set-up costs of their data reporting systems, and 13% (3) that the costs were between 20% and 50% of overall costs (no respondents had estimated set-up costs above 50% for reporting to a third party).

Of the respondents providing information on running costs, 73% (22 respondents) stated that the share of costs of reporting to a third party was less than 20% of the total annual running costs, 23% (7) that the costs are between 20% and 75%, and 3% (1) that the costs were greater than 75%.

Respondents were in addition asked to estimate hypothetical set-up and running costs in order to report a large range of data to a third party[239]. Respondents were also asked to estimate hypothetical set-up and running costs of reporting to a third party a significantly more limited range of data[240]. Of 113 respondents, 46% (52 respondents) provided estimates for set-up costs and 51% (58 respondents) provided estimates for running costs[241].

For set-up costs, 52% of respondents who provided cost estimates suggested that the hypothetical costs of reporting a full range of data to a third party would be lower than EUR 10,000. For 79% the costs would be between below EUR 50,000, and for the rest of respondents (21%) the costs would be higher than EUR 50,000 (of these, one is currently reporting to a third party). If reporting was only of input and output prices data, then for 58% of respondents these costs would be reduced by 80% or more, for 13% of respondents

[237] The responses are based on voluntary and own-initiative participation in the surveys conducted, and as such cannot be seen as a representative sample.

[238] This third party can be a public administration, a private market data reporting company, or other.

[239] Hypothetical costs of reporting to a third party all information related to input/output prices, volumes (production, stocks, trade), transport costs and margins. These should then be seen as an upper bound of estimates for costs of reporting to a third party (with fewer data reported costs should be lower).

[240] Namely, costs of reporting to a third party only input and output prices.

[241] Full results are in Annex VII.

costs would be reduced by between 50% and 80%, for 4% of respondents costs would be reduced by between 25% and 50%, and for 13% of respondents costs would be reduced by less than 25%.

For running costs, 55% of respondents who provided cost estimates suggested that the hypothetical annual running costs of reporting a full range of data to a third party would be lower than EUR 10,000. For 84% the running costs would be less than EUR 50,000. For the rest of respondents (16%) the costs would be higher than EUR 50,000 (none of these are currently reporting to a third party). The share of hypothetical running costs of reporting only input and output prices to a third party is lower than 80% of the total annual running costs of reporting to a third party for most operators (for 79% of respondents who provided cost estimates).

5.2.2 Structured interviews

As a complement to the online questionnaire, the JRC ran a series of structured interviews to obtain further insight into reporting costs and related aspects of providing data to a third party. The interviews consisted of 10 questions and separated into several sections: an introductory section, a section dedicated to the interviewee and the business or organisation that he/she represents, a section on MT and the perceived benefits and risks on increasing MT, a section related to the existing data gathering and reporting practices on which the respondent has expertise, and the estimated costs of reporting data to a third party. There were 21 interviews conducted, mostly to individuals representing cooperatives or associations representing groups of operators in the FSC.

On the benefits of increasing MT, several interviewees stress the need for MT to be ensured across all stages of the FSC (particularly MT on prices and volumes) in order to reduce information asymmetries between operators at different stages in the FSC. MT can help benchmark business decisions and better understand the operation of the market. For the full benefits to be reaped, training and education of operators in the FSC, including farmers and POs, is important.

On the costs of increasing MT, interviewees see input price reporting as commercially sensitive and raised concerns with infringements of competition rules. MT increases that go beyond prices and volumes can be costlier to provide, unless this information is already available in the information systems of the operator. In particular, respondents mentioned providing information on margins and transport costs as possibly costlier. Some interviewees believe there is already a sufficient level of MT in their sector of activity, or that further MT information would be difficult to provide for the benefits it would bring, and thus unnecessarily costly. Some interviewees mention that the automation of data reporting can significantly reduce costs to operators. Some interviewees mentioned that data quality aspects, such as product definition and data collection methodology, are important for meaningful MT. There is also a challenge in providing information that is meaningful in terms of product value changes along the FSC, as some products can be subject to significant transformation or high distribution costs and the link to the original agricultural product thus be diluted. These respondents suggest focusing increases in MT on final processed products with a high content of single agricultural products.

Several of the interviewees point out that the cost of data reporting to third parties is often negligible, as the data are in most cases already available in digital form in the operators own systems. Several of the interviewees already report various types of data to third parties (public or private).

5.3 Costs to price reporting agencies

There is a cost for operators in the FSC of buying data from private price reporting agencies, which makes up some of the revenue of the latter. Increased MT can also, while making price formation more efficient,

displace business activity of price reporting agencies operating in the market[242]. However, price reporting agencies provide various services besides market data, and competition in the sector would continue for data not reported by public administrations (as is currently the case) and for other value-added activities, such as market analysis (see table 6).

Table 4 - Price reporting agencies[243]

- Price-reporting agencies (PRAs) **are publishers** that report on and bring transparency to the physical commodity markets. They are a longstanding and critical part of the global commodity market infrastructure. They provide transparency, allowing markets to function efficiently.
- PRAs **publish price assessments** of the prevailing open-market price level in specific physical markets according to specific published methodologies. Within the commodities space, PRAs assess the price of numerous energy, agricultural, chemical and metal commodities.
- They publish their assessments daily, weekly or monthly, and allow access to them in exchange for a subscription fee. **PRAs also publish databases, analysis and real-time market news, and some are involved in related businesses, such as consultancy and conferences**.
- PRAs are independent of the markets they report on and **have no vested interest in the level of any price assessment** that they publish.
- PRAs **compete with one another** to publish the most accurate and most relevant assessment of a commodity's price.

Still, the existence of private data sources, complementing public data sources, leads to a fragmentation effect in access to market information in the FSC. This in itself is not a problem, but if this fragmentation leads or adds to a significant distortion of a structural nature in the market then the fragmentation effect of private information sources may contribute to market failure[244]. For example, if there is already an oligopsonistic or oligopolistic market structure or significant imbalances in bargaining power, access to key market information being available only to those able to pay for that information (typically larger operators) can exacerbate inefficiencies in the market. In such cases the centralisation and publication of market information can lead to more efficient market pricing and to a reduction of asymmetry in relationships in the FSC (typically to the benefit of smaller operators).

5.4 Competition and confidentiality

In economics a market is considered to be perfectly competitive when, among others, there is perfect information for all market participants[245]. Highly competitive markets are seen as desirable as they produce

[242] Bessembinder, H. & Maxwell, W., Markets: Transparency and the Corporate Bond Market, http://www.doi.org/10.1257/jep.22.2.217.

[243] Massey D., 2016, Introduction to price reporting, as quoted in Baffes J., 2018, World Bank experience with commodity price monitoring, http://europa.eu/!rH79cK (pdf).

[244] IOSCO, 2001, Transparency and Market Fragmentation, https://www.iosco.org/library/pubdocs/pdf/IOSCOPD124.pdf.

[245] Other standard conditions for a market to be considered perfectly competitive include having a large number of buyers and sellers such that none is able to affect prices in the market, a homogeneous product, full freedom of entry and exit into the market. There are other assumptions that would need to apply under the theoretical case, such as behavioural aspects (full rationality of buyers, sellers, and consumers) and frictionless trade (zero transaction costs, such as through fully defined and protected property rights), etc.

the lowest prices for consumers (at least in the short term). As an empirical fact, however, the conditions for perfect competition are not met in any market, and the FSC is no exception: there are non-trivial deviations from the model of perfect competition, including in access to information.

In general, the presence of imperfect access to information creates a divergence from competitive market pricing (even when all other conditions for competition are met). Some firms operating in such a market environment would enjoy market power attributable to imperfect information (even if all such firms are completely unable to affect market prices, are producing a homogeneous product, there are no barriers to entry or exit from the market, etc.). In cases where other conditions for perfect competition are also not met (besides perfect information not being present) a lack of MT tends to compound other distortions (such as sufficient firm size to affect market prices, less than homogeneous products, etc.). That is, a lack of MT is generally working against social welfare[246].

In the FSC the asymmetries of information between operators are such that there is typically significantly more data available on the market operation of agricultural producers (and, to an extent, of the nexus retailer-consumers) than there are data on the operation of operators further down the FSC (processors, wholesalers, retailers, etc.). From an agricultural producer perspective there is an asymmetry of information that disadvantages the seller in relation to the buyer.

An important issue to address when there are increases in MT is that increased levels of information may increase the ability of operators to act anti-competitively. This is only an issue where there is oligopsonistic or oligopolistic[247] power (in fully competitive markets MT is unquestionably positive). In the case of the FSC, anti-competitive behaviour by operators in the intermediate stages (where high levels of concentration exist) could cause detriment to agricultural producers and/or consumers. The risk of restrictions of competition is greater when operators holding market power compete solely on price[248], which is tends to be the case where products are highly homogeneous (such as is the case for many agricultural and processed agricultural products)[249].

For collusion (in the presence of market power) to be successful, it is necessary that cartel members have a high degree of confidence that they can identify and punish any other cartel members who break the agreement (that is, members who sell below the agreed price or buy above the agreed price). For such identification to occur it is necessary that there is access to reliable price data by the cartel members, and that the data should be accessible frequently and within short timeframes[250]. Regulations that increase MT run the risk of offering cartels or would-be cartels such data, and thus of facilitating cartelisation[251]. There is

[246] One possible exception is where increased availability of information is met by operators that are not able to effectively analyse or understand the data and to use the information appropriately (due to the sheer volume or complexity of that information). Note that an assumption of irrationality is also a departure from the classical approach in economics (Ménard C., 2018, Market transparency in food supply chain, http://doi.org/10.2760/285157).

[247] 'A *monopsony* consists of a market with a single buyer. When there are only a few buyers, the market is defined as an *oligopsony*. In general, when buyers have some influence over the price of their inputs they are said to have monopsony power'; 'An *oligopoly* is a market characterized by a small number of firms who realize they are interdependent in their pricing and output policies. The number of firms is small enough to give each firm some market power'. (OECD, 2007, Glossary of industrial organisation economics, http://oe.cd/2vk.)

[248] Prices are then the main element for competition, and deviations from price agreements are more clearly deviations from the collusion agreement, whereas product heterogeneity may complicate the identification of such deviations.

[249] OECD, 2001, Competition policy roundtable: Price Transparency, http://oe.cd/2vj (pdf).

[250] EC, 2004, Horizontal mergers, http://eur-lex.europa.eu/legal-content/EN/ALL/?uri=CELEX:52004XC0205(02); Albæk S. et al., 1997, Government-assisted oligopoly coordination? A concrete case, http://doi.org/10.1111/1467-6451.00057.

[251] Including the possibility of assisting tacit collusion (Ivaldi M. et al., 2003, Economics of tacit collusion, http://www.idei.fr/publications/economics-tacit-collusion).

also a risk of 'leaks' of the data to some participants. In practice, however, the question remains of whether large companies in segments the FSC that are highly concentrated know or not already enough about each other's buying and selling prices to be able to tacitly collude, irrespective of publicly mandated increases in market transparency.

To prevent such risks, which have been shown in hypothetical settings to potentially lead to lower prices for perishable products[252], the data that are published should be made available only in an aggregate form or with a sufficient time-lag for it to be ineffective in helping to maintain the cartel. The underlying legislation must then ensure this. In the words of the German Competition Authority, when investigation collusion in dairy markets in Germany:

'[There are] information systems (…) which publish information on milk supply volumes, milk prices and production quantities for dairy products, as well as butter and cheese quotations (for the whole of Germany). These publications are rather infrequent and do not contain any data that can be attributed to specific businesses or business transactions. The information provided is aggregated and therefore unidentifiable (…). In addition, trade journals publish spot milk prices on a weekly basis. Spot milk prices are prices for milk that is traded between the dairies (…). The data published is highly aggregated and indicates data for the "south" and the "north/west" of Germany without naming individual dairies. The market information systems mentioned above are unproblematic under competition law'[253].

Thus, the existing EU legislation on MT in the FSC already incorporates provisions to anonymise data that are published through aggregation, in Regulation (EU) 1308/2013 and in Implementing Regulation (EU) 2017/1185 (see table 5)[254].

[252] Menkhaus D.J. et al., 2009, Public information, http://doi.org/10.1111/j.1467-8276.2009.01253.x.

[253] Bundeskartellamt (2012), Milk Sector Inquiry: Final Report.
http://www.bundeskartellamt.de/SharedDocs/Publikation/EN/Sector%20Inquiries/Milk%20Sector%20Inquiry%20-%20Final%20Report.pdf?__blob=publicationFile&v=7.

[254] The obligation to take measures to ensure confidentiality extends to MS's authorities.

Table 5 - EU legislation to guarantee anonymity and prevent anti-competitive behaviour in the FSC

Regulation (EU) 1308/2013[255]:

'Article 224 - Processing and protection of personal data

1. The Member States and the Commission shall collect personal data for the purposes set out in Article 223(1) and shall not process those data in a way incompatible with those purposes.

2. Where personal data are processed for monitoring and evaluation purposes as referred to in Article 223(1), they shall be made anonymous and shall be processed in aggregated form only.

3. Personal data shall be processed in accordance with Directive 95/46/EC and Regulation (EC) No 45/2001. In particular, such data shall not be stored in a form which permits identification of data subjects for longer than is necessary for the purposes for which they were collected or for which they are further processed, taking into account the minimum retention periods laid down in the applicable national and Union law.

4. Member States shall inform the data subjects that their personal data may be processed by national and Union bodies in accordance with paragraph 1 and that in this respect they enjoy the rights set out in, respectively, Directive 95/46/EC and Regulation (EC) No 45/2001.'

Implementing Regulation (EU) 2017/1185[256]:

'Article 4 - Protection of personal data

1. The provisions of this Regulation shall apply without prejudice to Directive 95/46/EC, Regulation (EC) No 45/2001, Regulation (EC) No 1049/2001, and Directive 2002/58/EC and the provisions adopted pursuant to them.

2. Member States shall take the necessary steps to protect the confidentiality of data received from economic operators.

3. Where information notified to the Commission is obtained from less than three operators, or where information from a single operator accounts for more than 70% of the quantum of such information notified, the Member State concerned shall signal this to the Commission when notifying the information.

4. The Commission shall not publish information in such a way that can lead to the identification of an individual operator. Where such a risk exists, the Commission shall only publish such information in an aggregate form.'

Conversely, if firms are already colluding but such behaviour is difficult to detect by competition authorities, access to individual operator price data may aid in the identification of possible cases of anticompetitive behaviour and to further investigation of such cases (see section 4.1.2.2 – improved enforcement of competition rules). In fact, price transparency is particularly important where the market structure is characterised by oligopolies or oligopsonies[257].

[255] Regulation (EU) 1308/2013 of the European Parliament and of the Council of 17 December 2013 establishing a common organisation of the markets in agricultural products and repealing Council Regulations (EEC) No 922/72, (EEC) No 234/79, (EC) No 1037/2001 and (EC) No 1234/2007

[256] Commission Implementing Regulation (EU) 2017/1185 of 20 April 2017 laying down rules for the application of Regulations (EU) 1307/2013 and (EU) 1308/2013 of the European Parliament and of the Council as regards notifications to the Commission of information and documents and amending and repealing several Commission Regulations.

[257] Baffes J., 2018, World Bank experience with commodity price monitoring, http://europa.eu/!rH79cK (pdf).

Another concern is that MISs may themselves be object of anti-competitive practices, for example by coordinated misreporting of prices, especially where there is significantly high concentration in the reporting industries sector[258]. If, in addition, misreporting were done for prices that support or inform futures (and derivatives) markets, possible negative effects would be amplified. In some cases misreporting is explicitly prohibited in EU legislation[259].

In general, public policy, including competition policy, should contribute to make the FSC competitive in all its segments, conditions under which the competition concerns associated with increased MT would dissipate[260].

5.5 Third country effects

One issue raised by some stakeholders is that increased transparency at EU level may benefit competitors in third countries, which in such a scenario would have access to information they do not currently hold. However, the type of information for publication that would be under consideration at EU level is often already available, be it from MS public authorities[261], from wholesale markets[262], from sectoral associations[263], or from market data reporting companies (generally available for purchase)[264]. From this perspective, there would not be significant generating of new information, but rather making existing information accessible to all parties, and with a basic common level of access across different MSs where the relevant markets are present (with a benefit to those who currently face the largest hurdles to accessing such information, namely agricultural producers, certain producer organisations, and SMEs). In addition, data are compulsorily anonymised and not company specific, rather giving information about a market as a whole.

5.6 Data quality and data communication

The AMTF Report highlighted the need for the harmonisation of data collection standards and the need for increased timeliness of the data, so that the data are more useful to users. An important dimension of quality in a market such as the EU market, where implementation is largely conducted by one or more public administration agencies at MS level, is the coherence of the system and the consistency of the practices in different parts of the system[265]. The AMTF recommended establishing mechanisms for coordination between

[258] European Commission - Press release (2015), Antitrust: Commission opens formal investigation in the biofuels sector concerning ethanol benchmarks http://europa.eu/rapid/press-release_IP-15-6259_en.htm

And the case of the Georgia Dock index for the price of chicken (Baffes J., 2018, World Bank experience with commodity price monitoring, http://europa.eu/!rH79cK (pdf)).

[259] Regulation (EE) No 1227/2011 of the European Parliament and of the Council of 25 October 2011 on Wholesale Energy Market Integrity and Transparency.

http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32011R1227.

[260] Brooks J., 2018, Market transparency can contribute to a productive food system, http://europa.eu/!ww64Qn (pdf).

[261] The Food Price Monitoring Tool of Eurostat usefully lists MS price observatories throughout the EU: http://ec.europa.eu/eurostat/cache/infographs/foodprice/index.html.

[262] For example, the Athens wholesale market (http://www.okaa.gr/en/organization/our-facilities/central-market-of-athens/); the Rome wholesale market (http://agroalimroma.it/utilita/info-utili/listino-prezzi/); the Bronisze wholesale market (http://www.bronisze.com.pl/en); Spain's Mercasa (http://www.mercasa.es/red-de-mercas/precios-y-mercados-mayoristas), etc.

[263] For example, ASSOLATTE (http://www.assolatte.it/it/home/economia), FEPEX (http://www.fepex.es/home.aspx), etc.

[264] For example, MEG (http://www.marktinfo-eier-gefluegel.de/), Euromonitor Passport (http://go.euromonitor.com/passport.html), CLAL (http://www.clal.it/).

[265] For example, in the USA the LMRA offers market data information in multiple locations across State lines, within a common set of rules, including on data quality aspects. In the EU, currently MSs report the method for data collection,

MSs on data collection and for the exchange of best-practices on how the different MS MISs work should be developed. Equally, better coordination and integration between EU MISs and MS MISs should be pursued. There is room for improvement in this respect, as currently there is no inter-MS coordination mechanism in place for MT in the FSC. In addition, the varying MISs in the EU MSs may afford useful exchanges of best-practices that would benefit the EU MIS as a whole.

The AMTF also recommended working on better communication of data and analysis, and that up-to-date and user-friendly IT communication systems be increasingly adopted[266]. According to some external analysis, some improvements in the Commission's MISs[267] can be envisaged, including making information available in more languages (currently information is only available in English); making the underlying raw data behind the graphs and tables available to users or including links where sources are quoted (for further independent analysis); adding interpretative text to assist in understanding the tables and graphs presented; in some cases improving information to show not only EU but also MS level developments; or clarifying the calculation methodologies used for indices[268]. Some of these issues are addressed in the Agri-food data portal, which will, in time, become the single-entry point for all agri-food data in the Commission[269].

The private sector also plays a key role in data analysis and communication, for example through producer organisations, traditional and online agricultural press, and dedicated apps[270].

In addition, the Food Price Monitoring Tool (FPMT)[271] makes use of already existing data to provide price change information over time on a range of food products (in the form of indices and percentage changes). The FPMT includes data showing changes in agricultural producer prices, EU food industry prices, imported products, and consumer prices. Possible limitations of the FPMT include that it reports data at a relatively high level of aggregation, which increases the likelihood that extraneous confounding factors complicate the analysis (for example, there is data for 'fruit' but not for 'apples')[272]. For some agricultural products and some MSs the retail share of final demand can be smaller than the demand through other routes (mainly further food processing or for the food services industry)[273]. This is compounded by the fact that (for some sectors more than others) there may be other inputs than agricultural products that make up a significant, and even dominant, share of the final price to the consumer (such as transport, energy, labour, etc.), and it may be difficult to establish the nature of developments in the FSC on price changes alone[274]. Finally, and as the FPMT only makes use of data that are already existing in public databases, there are significant gaps in processor price data (as well as other data gaps)[275].

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according to Art 9 of the Implementing Regulation (EU) 2017/1185. These elements help ensure that there is statistical continuity of data series.

[266] The AMTF further recommended that the value share of each euro spent by consumers (the 'food euro'), both at MS and EU level, should be calculated; and that MSs promote the effective use of 'big data' on- and off-farm, including helping agricultural producers make informed use of such data.

[267] EU agriculture dashboards, EU market observatories, and EU agricultural markets and prices.

[268] Baltussen W. et al., 2019, Monitoring of prices and margins, http://doi.org/10.2760/197814.

[269] Agri-food data portal, http://agridata.ec.europa.eu/extensions/DataPortal/home.html.

[270] Hanrahan, K., 2018, Transparency in beef markets in Ireland, https://europa.eu/!cm73Cf.

[271] Food Price Monitoring Tool, http://ec.europa.eu/eurostat/web/hicp/methodology/food-price-monitoring-tool.

[272] Baltussen W. et al., 2019, Monitoring of prices and margins, http://doi.org/10.2760/197814.

[273] And the retail-focused nature of the FPMT would not allow to capture such effects well when assessing price transmission throughout the chain

[274] Eurostat, Food price monitoring tool - Reference Metadata (version 16/08/2018).

[275] Eurostat, Food Price Monitoring Tool, Price transmission along the food supply chain; Rezitis A.N. & Tsionas M., 2018, Asymmetric price transmission, http://doi.org/10.1016/j.econmod.2018.08.004.

When considering data quality, one key aspect to consider is the allocation of resources to public authorities dealing with MISs, as the importance of the work on data quality may be less apparent than other elements provided by the MIS, but it is of crucial importance[276].

In terms of timeliness of the data, the existing non-automated systems (relying on manual data input, in-person verification of outliers before publication, etc.) pose a limit on the speed at which data can be made available. Automated data systems could provided significantly faster market data availability, a possibility that could be further explored in future (similarly to existing systems in the US, such as those under the LMRA).

[276] Baffes J., 2018, World Bank experience with commodity price monitoring, http://europa.eu/!rH79cK (pdf).

6 Options

The previous sections explain the importance of market transparency for the efficient functioning of competitive markets, describe what market information is already available and published by the Commission (weekly and non-non weekly prices and production information on agricultural products), and identify what data are missing (information on the 'black box', i.e. on products that are processed and traded downstream of agricultural producers). They also outline the calls from numerous stakeholders, public authorities and expert groups – as well as from the European Parliament and the Council – for more transparency at the different stages of the food supply chain (FSC). Furthermore, the analysis provides some context on the ongoing, policy-driven shift in the EU towards an increasingly market-oriented agricultural sector – that makes it imperative for all operators in the FSC to have access to more and better market-relevant information.

As such, the analysis focuses on the current level of market transparency in the FSC (baseline), on its effects on agricultural producers and other operators, on the strengths and weaknesses of the current system of data collection and dissemination, and on how this system could be improved as well as on related challenges and costs. The options below complement that work by presenting the different narratives that the Commission developed to describe and categorise the possible measures that the Commission or EU legislators could take to address lack of transparency in the FSC. When discussing and assessing these different options, a key question is what the *optimal* level of market transparency is. For instance, it may not be cost-effective to aim for maximum transparency, or in imperfect markets an increase in transparency could reduce their competitiveness, i.e. in such cases the underlying structural issues would have to be addressed first.

6.1 Policy options

Building on the insights from the analysis report, six key elements are relevant for assessing policy options that aim at increasing market transparency:

1. Type of market data that are collected;
2. Type of products that are covered;
3. Stages of the FSC that are included;
4. Geographical scope of the data collection;
5. Mode of transmission of the data to the Commission;
6. Coordination mechanisms.

Combined, these elements result in a wide range of possible actions (options) for increasing market transparency. Assessing various combinations of these options requires taking into account the costs and benefits of each.

6.1.1 Type of market data

In the EU's FSC, currently market data are collected to fulfil the objectives set out in Regulation (EU) 1308/2013[277] and in Implementing Regulation (EU) 2017/1185[278]. These data include mainly agricultural

[277] 'For the purposes of… monitoring, analysing and managing the market in agricultural products, ensuring market transparency… the Commission may… adopt the necessary measures regarding communications to be made by undertakings, Member States and third countries. In so doing, it shall take into account the data needs and synergies between potential data sources. The information obtained… may be made public, subject to the protection of personal

producer prices and the prices of some processed agricultural products[279], as well as a limited amount of non-price data for some agricultural products on production areas, storage and stocks, production capacity, or consumption[280]. MSs also provide some estimates for some types of quantities on sugar, fibre crops, olive oil, and wine. These data on agricultural producers are 'core' data for the sectors and feed into the stakeholder engagement and information activities of the Commission (dashboards, market observatories, etc.). These data are then also used by agricultural producers and other operators in the FSC, as well as by researchers investigating the functioning of agricultural markets and the FSC as a whole.

Data that are currently not available at EU level, but which can be of interest for the fulfilment of the objectives set out in Article 223 of Regulation (EU) 1308/2013, include:

1. Production volumes for specific inputs (e.g. fodder), products, or qualities (e.g. GIs)[281].
2. Quantities on produce stocks or uses (e.g. consumption, industrial uses, food waste, etc.)[282].
3. Costs of production of agricultural producers, operators in the processing industry, and retailers, per tonne of product, disaggregated by product, product quality, cost type (type of input, etc.), and by variable or fixed costs[283].
4. Data on economic margins from companies' annual accounts, in a format that allows the reconstitution of the structure of each sectoral chain, by commodity type[284].
5. Representative selling prices of operators in the processing industry by type of buyer (retail, food services) and by type of product, and buying prices of retailers by type of product.

Some of this information is available from commercial sources, which the Commission is buying in some cases to use it for analytical purposes. However, this private data can only be published in a highly aggregated format or it cannot be published at all, and the Commission can often not check the quality of the data nor ensure consistency of time series. Data that are relevant to operators in the FSC is thus not available in the public domain, which is in particularly to the disadvantage of smaller operators in the chain.

6.1.2 Product coverage

In terms of product coverage, current data collection by the Commission under Implementing Regulation (EU) 2017/1185 includes a significant number of agricultural products and a few processed agricultural products, as listed in Annex I to the TFEU. The data on these products are collected on a voluntary or compulsory basis and cover weekly, monthly, and annual prices as well as some quantities. The product

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data and the legitimate interest of undertakings in the protection of their business secrets' (Article 223 (1), Regulation (EU) 1308/2013, http://eur-lex.europa.eu/legal-content/EN/ALL/?uri=CELEX:32013R1308).

[278] Implementing Regulation (EU) 2017/1185, https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:32017R1185.

[279] Although these data refer to the prices received by agricultural producers for their (unprocessed) products they are usually collected and reported at the stage of first processing: the silo or elevator for cereals, the packing station for fresh F&V, the dairy for dairy products, or the slaughterhouse for carcases. Only in a minority of cases is data collected on real farm-gate producer prices, before any transport or marketing costs (e.g. for raw milk or live animals). When such 'production prices' are reported at the first processing stage, they generally do not represent the prices that agricultural producers receive, which will typically be lower.

[280] For example, the Commission collects some information on volumes, when not available in Eurostat agricultural statistics or elsewhere (e.g. sugar, wine or ethyl alcohol production, wine stocks, number of eggs production site per farming method, rice balance sheet, etc.). This data are sometimes considered to limit possible analyses (Caivano A. & Gorrín C., 2018, Apparent use of meat, crops and dairy products, http://www.doi.org/10.2760/389335).

[281] In some cases data exist at EU level, but their quality needs to be improved or they should be made available faster.

[282] Including supply and demand balance sheets, e.g.: EC, 2019, Market Observatory Cereals, http://europa.eu/!Vu67xB.

[283] Some information is available from the Farm Accountancy Data Network and Eurostat, but the information is not sufficiently precise to support meaningful analyses or it is not made available in a timely manner.

[284] In the mould of the French Observatory on Prices and Margins.

coverage could be expanded in several ways, to better achieve the objectives set out in Regulation (EU) 1308/2013:

1. Expand the current coverage of agricultural products by making some of the voluntary notifications compulsory and by creating new notifications for certain key agricultural products[285].
2. Expand the limited coverage of processed agricultural products in line with the recommendations of the AMTF (in particular to meat, F&V, and dairy products)[286].
3. Expand the limited coverage of agricultural and processed agricultural products with higher value added, through collecting information on both representative prices and quantities[287].
4. Expand the coverage of processed agri-food products beyond processed agricultural products (as specified in Annex I of the TFEU)[288].

Suitable disaggregation of data (e.g. along quality dimensions) provides better price signals than reporting data at an aggregated level and could better stimulate competition between products[289]. Such disaggregation could be done for instance for products that comply with certain marketing standards, such as GIs or organic production[290]. In the US, the Department of Agriculture collects and publishes a range of data on organic markets[291], as well as related analyses and background information[292]. Such disaggregation allows producers to compare mark-ups for products complying with a given marketing standard and e.g. decide whether to invest in shifting to organic production. A detailed list of what could be proposed for increased market transparency in terms of coverage of specific agricultural and processed agricultural products is listed in the Annex.

6.1.3 Stages of the FSC

Currently, data on agricultural products is collected at the nexus of agricultural producers and downstream operators (e.g. food processors), while data on processed agricultural products is collected at the nexus of primary food processors and downstream operators (e.g. secondary food processor or retailers). Most data collection and reporting is done by primary food processors, which have systems in place for this purpose (including for collecting market data on agricultural products).

In case data collection is expanded to cover more types of market data or products, as discussed above, this could be done at different stages of the FSC:

1. Data could be collected at (primary) processor level (as is currently most common), also for types of market data or types of products that are currently not collected.
2. Data could also be collected further downstream in the FSC, at secondary processing stages or the retail level (for types of market data and products that are already covered and those that are not yet covered).

[285] Such as oilseeds and oilseeds complex products or protein crops.

[286] For example, for meat this could include cuts for beef, pork, poultry or sheep meat; for dairy this could include drinking milk or yogurt; for F&V this could include canned tomatoes or orange and apple juice.

[287] For example, for key organic products or geographical indication (GI) products.

[288] This would include a large number of additional products such as pasta, biscuits, beer, etc.

[289] Molnár A. et al., 2013, Price transparency for fair competition, http://doi.org/10.1007/978-94-007-6274-9_13.

[290] García T., 2018, Options to improve the EU food value chain, https://europa.eu/!nw86Kc.

[291] USDA, 2019, Organic reports, http://www.ams.usda.gov/market-news/organic.

[292] USDA, 2018, Organic agriculture, https://bit.ly/2TPcrP2.

6.1.4 Geographical scope

In terms of the geographical scope, currently data are reported for representative markets by MSs according to the rules set out in Implementing Regulation (EU) 2017/1185. For some products all MSs report data (e.g. cereals, meat, or eggs), while for other products MSs report data only above certain thresholds or if there is production of the underlying agricultural product in their country (e.g. rice or olive oil).

In terms of geographical coverage, the following options exist for expanding data collection:

1. Additional data (more types and products) are collected only in MSs with markets that are representative for the whole of the EU.
2. Additional data are collected by all MSs.

6.1.5 Mode of transmission of the information to the EU

Currently market data are collected at EU level under Implementing Regulation (EU) 2017/1185. All MSs report the data to the Commission through the Information System for Agricultural Market Management and Monitoring (ISAMM), but each MS has its own data collection procedure, based on its own methodology[293]. Moreover, currently any communication on data problems and quality checks takes place exclusively between the Commission and MSs, without direct contact between the Commission and stakeholders. The following options present themselves when expanding data collection:

1. The current system is replicated, i.e. MSs collect, verify, and report the data to the EU, and any further verification takes place on a bilateral basis.
2. To reduce the administrative burden on MSs, operators report relevant information directly to the Commission.

The choice of the preferred option could also be left to each MS (which could base their decision on consultations with the stakeholders of their national FSCs).

6.1.6 Coordination mechanisms

The existing market information system (MIS) at EU level offers limited opportunities for coordination between MSs, the Commission and stakeholders[294]. This can limit the coherence of approaches (with possible inconsistencies in data quality), and the opportunities for exchanging best practices and for learning from each other. Currently, the engagement between the MSs and the Commission is limited to the provision of data by MSs, the checking of the data quality by the Commission, where needed the request for corrections to the data, and the dissemination and analysis of the data by the Commission. However, MSs maintain their own autonomous MIS (that can be more ambitious and complete than what is required under Implementing Regulation (EU) 2017/1185) and a dialogue between MSs and between MSs and the Commission on their separate MISs is essentially non-existent. Complementing the data from MSs, in the context of the Commission's Market Observatories some stakeholder associations provide data to the Commission on an ad hoc basis[295], though.

Options for improving the current level of coordination include:

1. Introduction of a regular consultation and coordination process on agri-food market transparency systems in the EU between MSs and the Commission.

[293] For instance through spot market quotations, surveys to traders or other stakeholders, or expert committees.

[294] Implementing Regulation (EU) 2017/1185, https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:32017R1185.

[295] For example, the European Dairy Association (EDA) provides data on private stocks of dairy products; the European Livestock and Meat Trades Union (UECBV) provides a price index of pig meat cuts.

2. Introduction of a regular consultation and coordination process on agri-food market transparency systems in the EU between MSs, the Commission and operators in the FSC.

6.2 Option 'packages'

Depending on the level of ambition, the scope of the market transparency initiative can go from a slight improvement of the status quo to the creation of an EU observatory of the food supply chain, with various options in-between. When drafting the analysis report, initially four options 'packages' presented themselves as key narratives that described for each of the elements mentioned above a similar degree of fulfilment on the scale between the status quo and an all-out data collection effort. These packages include an only slightly 'improved status quo' (option 1), a 'digitised improved price notification system' (option 2), an 'agricultural costs and price transparency system' (option 3), and a full-blown 'food supply chain observatory' (option 4). These options exclude the maintenance of the status quo, which is a self-evident option, but also the possibility of an even more ambitious option than option 4, which could encompass the routine collection of data on processed products (and which could be pursued in a joint initiative by DG AGRI and DG GROW). Table 8 summarises the options in 'packages'.

Table 8 - Option packages

	Option 1 Improved status quo	Option 2 Digitised improved price notification system	Preferred option Combination of 2 & 3	Option 3 Agricultural costs and price transparency system	Option 4 Food supply chain observatory
Type of market data	Unchanged	Producer and representative processing prices	← Option 2, plus representative retail prices and some information on quantities, stocks & use (consumption)	Producer, processing & retail representative prices; some information on quantities, stocks, use; costs (production, processing)	Producer, processing & retail representative prices; some information on quantities, stocks, use; costs; margins
Product coverage	Few additional raw products, e.g. oilseeds, protein crops	Annex I processed and HVA products, e.g. some meat cuts, dairy products, processed F&V, sugar, plant protein products, organic & GI products	← Option 2	Annex I processed and HVA products, e.g. some meat cuts, dairy products, processed F&V, sugar, plant protein products, organic & GI products	All Annex I products, as well as some non-Annex I processed products (incl. biscuits, pasta, beer, sausages etc.)
Stages of the FSC	At production and processing level	At production and processing level	Option 3 →	At production, processing and retail level	At production, processing and retail level
Geographical scope	Representative markets	Representative markets and operators	← Option 2, if production in the MS is >1% of the overall EU production	Representative markets and operators	All markets and operators
Mode of transmission	MSs to Commission via ISAMM	MSs or representative (larger) firms to Commission via ISAMM	← Option 2	Representative (larger) firms directly to MSs and Commission via new integrated system	All firms directly to MSs and Commission via new interoperable system
Coordination mechanism	Unchanged (bilateral talks between Com-mission and MSs)	Dedicated meetings of the expert group on the Common Market Organisation (CMO) twice a year (MSs only)	Option 3 →	Dedicated meetings of the expert group on the CMO combined with a horizontal CDG twice a year (MSs and stakeholders)	EU market observatory for the food supply chain (stakeholders only)

7 Preferred option

After extensive consultations within DG AGRI, across Commission services, with stakeholders and with MSs (see annexes of this report)[296], the preferred choices that emerged did not map on any of the given options but, rather, triggered the development of a 'preferred option' as a combination of options 2 and 3[297]. The preferred option is thus an improved price notification system with the reporting of some information on quantities as well as a more inclusive coordination mechanism[298].

Regarding the type of market data, for instance going as far as collection information on margins – to be able to reconstitute a full picture of the supply chain for each agricultural commodity, as e.g. implemented by the French Observatory on Prices and Margins – would require companies to share their annual accounts data. This could imply complex procedures and a significant delay before the information becomes available; the same is true for information on costs[299]. Moreover, if costs and margins were subject to data collection, all operators in the FSC would need to be covered.

In terms of product coverage, extending data collection to only a few unprocessed products would increase market transparency but not address issues with the asymmetry of information in the FSC in other sectors (which was a recommendation by the AMTF). On the other hand, a more ambitious goal, such as a full coverage of the FSC (including of non-agricultural processed products), would pose problems with the legal basis or it would require a change in the basic act, not a simple review of an implementing act. The choice of products to include can be driven by the significance of those products for their sector, be it in terms of sheer market share, high growth rate, or explanatory power for the price movement of similar products in the sector. Prices collected would be representative prices (not average prices), which would reduce the burden of data collection (while average prices require all quantities and prices to be calculated, representative prices seek to capture market price by sampling a smaller set of the market). Collection would apply only for MSs with significant volumes of production at EU level, to avoid costs in MSs that represent a small share of EU production. Product choice is also driven by avoiding overlaps with public data collection already in place.

Including some high-value-added (HVA) products in the data collection effort is expected to offer significant benefits for operators that seek to understand structural changes in the FSC and how to best adapt to these (in particular agricultural producers and SMEs, which typically face higher barriers of access to relevant market information). The scope of the preferred option covers the core of the recommendations of the AMTF and it addresses the lack of information on intermediate stages of the FSC. At the same time this option is not

[296] This consultation also helped ensure that what is being proposed as the preferred option is not overlapping with what other Commission services (e.g. Eurostat) are doing or planning to do in terms of data collection and dissemination.

[297] See section 2.7; to avoid confusion across documents, the options were not re-numbered but the 'preferred option' was simply added as such to the options table.

[298] Expected costs of the preferred option are detailed in Annex VIII, following the EU Standard Cost Model approach.

[299] In future, research methodologies for lowering costs of annual accounts reporting on costs and margins may be developed, or the use of blockchain to capture market data may increase (Tripoli M. & Schmidhuber J., 2018, Blockchain in the agri-food Industry, http://www.fao.org/documents/card/en/c/CA1335EN).

expected to lead to a high administrative burden on operators as MSs will be able to select operators that are already collecting information on other products to provide most of the information[300].

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[300] For most of the information considered, the operators that would be covered by additional market requirements are farmers, producers organisations and first stage processing operators – i.e. operators already collaborating under the current data collection arrangements. For example, slaughterhouses and transmit data on carcasses and the dairy industry already collects information on several dairy retailers would be covered in addition if price collection was expanded to buying prices. (See **Annex VIII Administrative burden**

1.1 EU Standard Cost Model

According to Toolbox 60 of the better regulation guidelines, administrative costs are costs incurred by enterprises, the voluntary sector, public authorities and citizens in meeting legal obligations to provide information on their activities, and it stipulates that whenever a measure is likely to impose significant administrative costs, the 'EU Standard Cost Model' should be applied to assess the net cost of information obligations imposed by EU legislation. Therefore, to ascertain whether the preferred option for increasing market transparency in the FSC imposes significant administrative costs, in the following the EU Standard Cost Model is applied.

With Implementing Regulation (EU) 2017/1185 as the regulatory origin, the preferred option requires the reporting of market data on prices and quantities of products sold and bought. For the FSC operators concerned, this implies the one-off need to expand or introduce systems to record the required data and the recurrent (weekly or monthly) need to submit it to competent authorities, while these authorities need to adapt the existing reporting system (ISAMM). The target group of FSC operators is a sample of sellers and buyers of a defined list of agri-food products that is to be determined by MSs to deliver representative market data (and in determining their sampling, MSs should duly avoid putting a burden on SMEs and aim for cost-effective solutions).

For estimating the administrative burden, the following assumptions were used: Per MS whose respective production is bigger than two percent of the total production of the EU27, three sellers of dairy; meat; eggs; oilseeds, protein crops, oilmeals & oils; olive oil & table olives; cereals & rice; sugar & ethyl alcohol; fruit & vegetables (F&V); processed F&V; and wine – as well as three buyers from retail and industry – have to report the specified market data. Potentially these can be the same operators that are already reporting under Implementing Regulation (EU) 2017/1185. Moreover, some MSs have monitoring systems in place that collect the required data already. In these latter two cases no additional administrative burden is imposed. Available data was then used to estimate EU costs. In particular, the cost estimates for operators were taken from a study by the Joint Research Centre (JRC), while the costs for national administrations were derived in a standardised manner by using the Excel report sheet specified in Toolbox 60.

1.2 Estimated costs to operators and Member States

The JRC has carried out a study on costs to operators in the agri-food supply chain, which was used to estimate the administrative burden to operators of the preferred option. The JRC used both an online survey and structured interviews to elicit estimated (additional) set-up costs of reporting to a third party as well as (additional) annual running costs for given cost ranges. Taking middle values of the ranges produces average estimated one-off cost for setting up a reporting system of EUR 20,516 and average estimated running costs of EUR 254 per week, which were used in the Excel report sheet of Toolbox 60 (Table 9). Given that MSs should aim at cost-effectiveness when defining their methodology, in their sampling strategy MSs could focus

To cover all stages of the FSC and to be able to obtain a fuller picture of developments within the chain, also processor and retailer data are needed. Again, MSs can choose cost-effective methodologies to collect the data from operators that are already covered by other reporting obligations. Such data could offer

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on operators whose reporting costs are below average costs, i.e. using average costs for the estimation of operators costs is a conservative approach.

Given that the initiative to increase market transparency in the food supply chain will simply expand the range of market data that are already collected under Implementing Regulation (EU) 2017/1185, which is implemented through the Commission's ISAMM that MSs already use, no significant additional set-up or running costs are expected for MSs. The costs for defining the sampling, for the additional quality checking and data processing, for the training of staff, and for staff participation in coordination activities at EU level were computed directly in the Excel report sheet of Toolbox 60 using the hourly earnings of ISCO3 (technicians and associate professionals).

Table 9 - Estimated costs to operators and Member States

Amendment of Implementing Regulation (EU) 2017/1185 to improve market transparency in the food supply chain				**Tariff (€/h)**	**Time (min.)**	**Price (per action)**	**Frequency (per year)**	**Entities (no.)**	**Actions (total no.)**	**Total Administrative Costs**
No.	Type of obligation	Description of required actions	Target group							
1	Notification of (specific) activities or events	Producing new data	MSs	23	1,316	416	0.05	27	1	562
2	Certification of products or processes	Inspecting and checking (incl. assistance to inspections)	MSs	23	164	52	52	27	1,404	73,030
3	Submission of (recurring) reports	Submitting the information (sending it to designated recipients)	MSs	23	27	9	52	27	1,404	12,172
4	Submission of (recurring) reports	Retrieving relevant information from existing data	MSs	23	82	26	52	27	1,404	36,515
5	Cooperation with audits & inspections	Holding meetings	MSs	23	960	371	2	27	54	20,057
6	Submission of (recurring) reports	Familiarising with the information obligation	MSs	23	240	93	0.5	27	14	1,254
7	Non labelling information for third parties	Buying (IT) equipment & supplies	Operators			20,516	0.05	270	13	276,689
8	Non labelling information for third parties	Submitting the information (sending it to designated recipients)	Operators			254	52	270	14,026	3,562,594
									Total administrative costs (€)	**3,982,872**

Annex for sectors and stages of the FSC where data collection is already taking place and where not.)

agricultural producers and other operators and stakeholders in the FSC (including consumers) an unbiased cross-EU view of processor and retail price developments, which can also support competition in the FSC.

The prices of many agricultural products are interlinked across the EU. While their absolute levels might be different in different locations (e.g. because of transport costs and local preferences), in general they are correlated. In such situations, rather than requiring all operators and MSs to report data, the administrative burden on both can be further alleviated by limiting data collection to representative markets, to the largest operators, or to the main producing countries.

Another way to alleviate the administrative burden on MSs could be to create the possibility for operators to report directly to the Commission (using existing reporting systems) rather than to MSs – which then report to the Commission. In this case, the procedure for quality checks of the submitted data has to be clarified. Currently data quality falls under the responsibility of MSs, but with direct reporting the Commission could for instance do the initial screening of the submitted data, and only when it finds problems are found could it ask the responsible MS to verify the data. In either case, consistency between MS data and Commission data would have to be ensured.

The most advanced transmission option would be the development of a specific system connected to the accounting systems of operators to extract directly price information in real time. The USDA has implemented such a system for meat cuts. They found that while there is a significant set-up cost, once the system is running, costs become negligible. One challenge for implementing such an option is the variation in accounting and IT systems between operators and MSs. This technical aspect would have to be addressed to seamlessly integrate these different systems with an EU platform.

The coordination mechanism between MSs and the Commission could be used to improve the information systems themselves by seeking to develop synergies and interoperability across MSs; it could also help MSs and the Commission to come to a common understanding of market dynamics in the FSC. Including stakeholders in the discussion as well, could expedite the coordination and improvement of private MISs (e.g. regarding the development of blockchain technology or the use of big data), and it could facilitate fact-based dialogue and increase trust between operators.

ANNEXES

8 Annex I - Inception impact assessment (IIA): Summary on the market transparency element

The inception impact assessment on the initiative to improve the food supply chain was published on 25 July 2017, and included market transparency as one of its elements[301]. The publication of this roadmap also invited stakeholders to provide feedback on the Commission's understanding of the problem and to make available any relevant information. While the initiative, and thus the associated inception impact assessment, addressed three issues (unfair trading practices, producer cooperation and market transparency), the results in this section refer to market transparency exclusively. The element of producer cooperation has been addressed through the 2017 Omnibus regulation, a Directive on unfair trading practices in business-to-business relationships in the agricultural and food supply chain is expected to be formally endorsed by the Council and the European Parliament in spring 2019.

Two scenarios were presented in the IIA. The first consisted of keeping the *status quo* (option 1), the second suggested the adoption of provisions that would enable data on key products to be collected at along the food supply chain and thus allow to shed light on levels of the supply chain downstream of primary production (option 2).

During the feedback period, between 25 July and 22 August 2017, 65 respondents submitted their contributions to the Commission[331]. Among the contributors figured 11 Member States, 22 farmers groups and agricultural organizations, 12 processors, 6 retailers, 9 NGOs, 1 university, 1 trade union, 1 trader and 3 anonymous respondents.

While **30 respondents were in favour of enhancing market transparency** (option 2), **9 suggested keeping the status quo** (option 1) and 27 did not indicate any clear preference for either option.

Support for enhancing market transparency mainly came from farmers associations (half of the respondents), followed by processor associations, Member States and NGOs.

Among respondents advocating for keeping the status quo, nearly half were retailer associations, followed by farmer and processor associations.

The ranking of those for which no clear preference for an option was expressed was headed by Member States and closely followed by farmers associations, NGOs, processor and retailer associations as well as business operators, academy and trade unions.

[301] EC, 2017, Initiative to improve the Food Supply Chain, http://europa.eu/!fQ33uq.

9 Annex II – Open public consultation[302]

Overview of respondents

The OPC ran for three months, between 25 August and 17 November, and attracted a total of 1,432 responses (56% by individuals - 803 responses - and 44% by organisations - 628 responses). 71% of individuals stated they were involved in farming (570 responses), and 29% that they were not (233 responses). Organisations' contributions were mainly by private companies (38% of organisations' responses), business and professional associations (31%), and NGOs (20%). In terms of sector of activity, the organisation responses were from agricultural producers (53% of organisations' responses); the agro-food sector (22%); the trade sector (7%); civil society organisations (7%); the retail sector (4%); research organisations (1%); and 'other' (6%).

The 'private company' group can be further broken down by company size, (number of employees). Small and medium enterprises (SMEs) were 81% of private company responses). Large enterprises (those with more than 250 employees) were 19% of all private company contributions.

In terms of Member State of origin the highest participation came from Germany (29% of total), Austria (14%), France and Spain (7%). The lowest from Croatia, Luxembourg, and Cyprus (1 contribution each).

Respondents' views

a) Problem definition[303]

77% of respondents agreed or partially agreed that collecting and publishing information on agricultural markets at EU level brings added value, compared to what the national public or private systems of information collect and publish. These results were broadly similar for all stakeholder groups (78% of individuals and 74% of companies agreed or partly disagreed), with a significantly lower score in the retail sector (40% agreed or partially agreed, 36% disagreed or partially disagreed, 24% having no opinion) and among large companies[304] (40% agreed or partially agreed, another 40% disagreed or partially disagreed, 20% having no opinion).

On the question of why an EU market transparency tool would be useful[305], respondents mainly considered that it would: 1) ensure greater compatibility of information on markets throughout the EU (data standardisation) (707 mentions); 2) offer more complete information on markets throughout the EU (701); 3) increase the accuracy of information on EU markets (598 mentions); 4) offer more timely and regular information to operators (568); and 5) allow data access through a single point (454).

[302] Where figures do not add up to 100% this is due to the omission of those stating 'no opinion'. There was dependency between some questions (only some respondents will have seen some questions, as these were only relevant depending on an answer previously given). This is relevant in particular for the retail sector, which meant for several questions the retail response rate is very low (3 or 4 responses over 25 retail organisations). Replies were not compulsory, and some respondents chose not to reply to some questions.

[303] Percentages based on number of respondents answering each question.

[304] Companies are divided by size in the open public consultation: small (less than 50 employees), medium (between 50 and 250 employees) and large (more than 250 employees). 45 large companies answered the open public consultation. 51% of large companies in the consultation were in the agro-food sector, 20% in trade, 18% in retail, 2% in agriculture, and 9% in 'other'. Note there is an overlap between the retailer and large company groups.

[305] Multiple answer question. The numbers refer to the most frequently cited reasons. Only respondents who agreed or partially agreed that collecting and publishing information on agricultural markets at EU level brings added value answered this question.

When asking the question of why EU market transparency arrangements would not be useful[306], the main reasons given were 1) the inability to give accurate data as a consequence of agro-food products not being standard enough across the EU to be comparable (148 mentions); 2) the potential risk of providing competitors with too much information, which could lead to uniform and higher prices for the next level in the supply chain and for consumers (95); 3) the fact that such arrangements are not cost-effective as they would create an extra burden on stakeholders supplying the data (89); and 5) that smaller stakeholders are not using them as part of their daily work (65).

72% of the respondents agreed or partly agreed that further EU market transparency arrangements complementing the existing ones would be useful. There is no significant difference between companies and individuals overall, and no difference between individuals involved in farming or not. By key sector, the results vary from 79% (Agriculture), to 64% (Agro-Food), to 28% (Retail). Only 29% of large enterprises agreed or partly agreed.

As concerns the proposed approaches that would be best suited to enhance EU market transparency[307], there is no significant difference in the assessment between companies and individuals (and for individuals be they involved in farming or not). The key results were as follows:

Type of approach	Respondents who agree or partially agree on the suitability of the approach	Comments
Coordinate and integrate Member States' information systems and price observatories through common platforms	92%	Results broken down to sectors show a range of views going from 96% (Civil society), to 95% (Agriculture), to 93% (Agro-Food), to 71% (Retail). Among private companies, SMEs[308] score at 89%, large enterprises at 85%.
Improve current tools, developed by the European Commission based on available data (existing EU Market Observatories and other market monitoring tools)	91%	Results broken down to sectors show a range of views going from 95% (Agriculture), to 94% (Agro-food), to 71% (Retail). Among private companies, large enterprises score at 92%, SMEs at 90%.
Introduce an EU-level obligation for operators along the supply chain to report on prices	85%	Results broken down to sectors show a wide range of views going from 96% (Civil society), to 88% (Agriculture), to 75% (Agro-Food), to 0% (Retail). Among private companies, SMEs score at 84%, large enterprises at 38%.

[306] Only respondents who disagreed or partially disagreed that further EU market transparency arrangements complementing the existing ones would be useful answered this question.

[307] Only respondents who agreed or partially agreed that collecting and publishing information on agricultural markets at EU level brings added value answered this question.

[308] SMEs refer to the aggregated scores of micro (less than 10 employees), small (less than 50 employees) and medium (between 50 and 250 employees) enterprises.

Incentivise operators along the supply chain to develop self-managed, voluntary systems of information with public access	66%	Results broken down to sectors show a range of views going from 80% (Research/Think tank), to 77% (Agro-food), to 65% (Agriculture) to 14% (Retail). Among private companies, SMEs score at 62%, large enterprises at 50%.

Participants in the survey were also asked whether they would consider it expedient to introduce measures at EU level to increase market transparency for different stages of the food supply chain. While the number of respondents agreeing or partially agreeing on the expediency to introduce such measures was similarly high for all the indicated stages of the food supply chain (ranging between 93% and 86%), the food processing stage scores highest and also finds the highest consensus among all sectors and enterprise sizes. There was no significant difference in the assessment between companies and individuals (and for individuals be they involved in farming or not).

Stages of the food supply chain	Respondents who agree or partially agree on the expediency to introduce measures at EU level for the different stages of the food supply chain	Comments
Food processing	93%	Results broken down to sectors show a range of views going from 100% (both Research/Think tank and other respondents), to 94% (Agriculture), 87% (Agro-food), and to 86% (Retail) Among private companies, SMEs score at 92%, large enterprises at 85%.
Trade	92%	Results broken down to sectors show a range of views going from 100% (both Research/Think tank and other respondents), to 94% (Agriculture), 85% (Agro-food), and to 43% (Retail). Among private companies, SMEs score at 89%, large enterprises at 62%.
Retail	91%	Results broken down to sectors show a range of views going from 100% (Other respondents), to 91% (Agriculture), 87% (Agro-food), and to 43% (Retail). Among private companies, SMEs score at 85%, large enterprises at 62%.
Input industries for food production such as e.g. fertilisers	87%	Results broken down to sectors show a range of views going from 100% ('Other' respondents), to 90% (Agriculture), 85% (Agro-food), to 71% (Retail), and to 60% (Research/Think tank).

		Among private companies, SMEs score at 87%, large enterprises at 69%.
Consumption	87%	Results broken down to sectors show a range of views going from 95% (Trade), to 87% (Agriculture), 86% (Agro-food), 67% (Retail) and to 60% (Research/Think tank). Among private companies, large enterprises score at 83%, SMEs at 81%.
Farming	86%	Results broken down to sectors show a range of views going from 100% (Research/Think tank), to 89% (Agriculture), 87% (Agro-food), and to 43% (Retail). Among private companies, SMEs score at 86%, large enterprises at 54%.

The sectors considered as being most prone to benefit from new measures enhancing market transparency were meat (820 mentions), dairy (778), fruits and vegetables (705), arable crops (605), wine (314), olive oil (289) and other sectors (129). The assessment, be it made by individuals (involved in farming or not) or organisations of all types is largely similar. No significant divergence existed in terms of company size.

According to respondents, market transparency, at duly aggregated level, should be increased for the following categories of market information concerning agri-food products. There is no significant difference in the assessment between companies and individuals (and for individuals be they involved in farming or not).

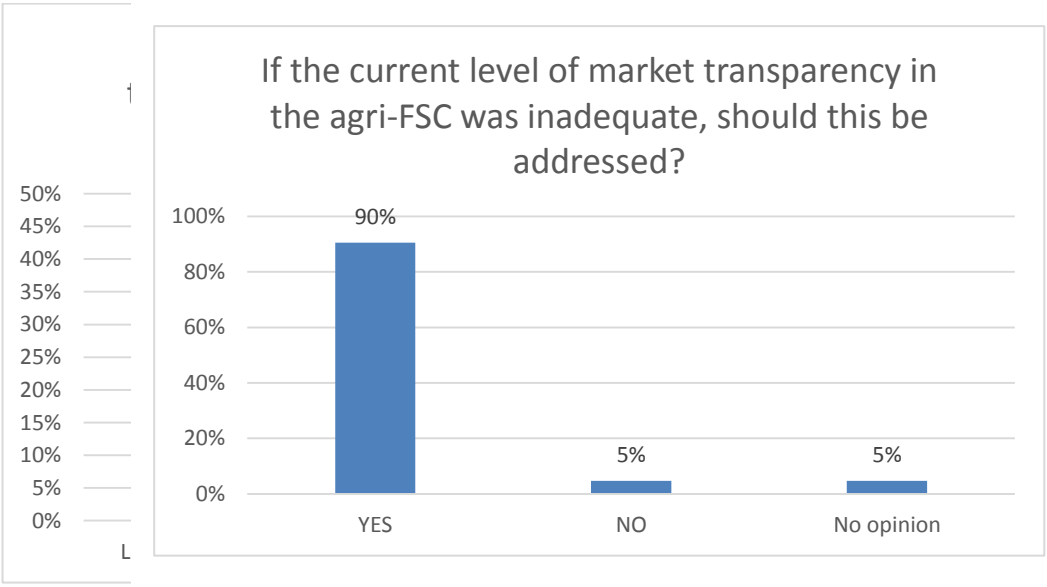
Category of market information	Respondents who agree or partially agree that market transparency at duly aggregated level should be increased for the respective category.	Comments
Prices	95%	Results broken down to sectors show a range of views going from 100% (Civil society), to 96% (Agriculture), 87% (Agro-food), and to 0% (Retail). Among private companies, SMEs score at 91%, large enterprises at 54%.
Production	93%	Results broken down to sectors show a range of views going from 100% (Research/Think tank), to 92% (Agriculture), 89% (Agro-food), and to 83% (Retail) Among private companies, SMEs score at 88%, large enterprises at 83%.
Consumption	90%	Results broken down to sectors show a range of

		views going from 96% (Civil society), to 91% (Agriculture), 89% (Agro-food), and to 67% (Retail) Among private companies, SMEs score at 84%, large enterprises at 83%.
Stocks	86%	Results broken down to sectors show a range of views going from 92% (Civil society), to 86% (Agriculture), 78% (Agro-food), and to 67% (Retail) Among private companies, SMEs score at 73%, large enterprises at 58%.
Costs of production	86%	Results broken down to sectors show a range of views going from 96% (Civil society), to 89% (Agriculture), 77% (Agro-food), and to 33% (Retail) Among private companies, SMEs score at 81%, large enterprises at 42%.
Margins	83%	Results broken down to sectors show a range of views going from 96% (Civil society), to 89% (Agriculture), 70% (Agro-food), and to 17% (Retail) Among private companies, SMEs score at 79%, large enterprises at 27%.

10 Annex III - Results from the questionnaire to Member States

10.1 Key results

- 20 MSs replied to the specific questionnaire (for a total of 21 respondents – two authorities from one MS answered[309]).
- 95% of respondents state that market transparency is necessary for competition (to a large or some extent).
- 77% of respondents believe that the current level of market transparency has a negative impact on the FSC (to a large or to some extent).
- 90% of respondents consider that if the current level of market transparency is inadequate, this should be addressed.
- 95% of respondents consider that increased market transparency would benefit producers or producer organisations, 52% the manufacturing sector, and 48% public authorities.
- As main risks of providing a higher level of market transparency, respondents mention reporting costs to operators (57%) and confidentiality (43%). 33% of respondents say there are no significant risks.



[309] The specific department of the MS responsible for sending the answer to the questionnaire was left for the MS do decide.

10.2 Summary

20 MSs replied to the specific questionnaire.

95% of the respondents believe to a large or to some extent, that **market transparency is necessary for competition**. 77% agree that the current level of market transparency has a **negative impact on the FSC** (to a large or to some extent). A large majority of respondents (90%) state that if the current level of market transparency is inadequate this should be addressed.

2 MSs (out of 20) see no need for increased market transparency. One of these, however, states that improving the availability of price data for key product sectors downstream of agricultural producers might be worth further examination.

MS **respondents use price and market information** that is already available, be it from national authorities (90%) or provided by DG AGRI (90%). This is closely followed by information from DG AGRI's dashboards (81%) and DG AGRI's market observatories (76%). Freely available price and market information from private sources accounts for 62%, paid-for information from private sources for 29%. It is also worth pointing out that all respondents are aware of DG AGRIs data publications. This indicates that MT provides tangible benefits to MS.

9 MSs (43% of respondents) state that they are **collecting data on the FSC that goes beyond what is required under EU legislation**.

When asked to list examples of how the current level of market transparency affects the FSC, both in MSs and at the level of the EU, around a quarter of the respondents mention that a low level of market transparency contributes to **unequal bargaining power**.

When asked to give examples of how additional market transparency data would be used and what should be the top priorities in terms of market transparency in their country, MSs mention:

- Reducing the uncertainty for market participants (e.g. in terms of price volatility)
- Increasing efficiency and fairness in the FSC
- Providing input for political decision-making
- Supporting contract negotiations
- Promotion and marketing
- Developing of information and communication technologies
- Innovation, education and knowledge sharing.

According to the respondents, the **main beneficiaries** of a higher level of market transparency would be **agricultural producers (76% of the MSs that answered this question)**, **followed by producer organisations (57%)** and manufacturers (52%). According to MS respondents the actors that might be most penalised would be retailers and intermediary traders (both 65%).

The ranking of the **main types of benefits** of increased market transparency is relatively balanced and headed by '**levelling the playing field for farmers' and 'reducing uncertainty for operators**' (both 81% of respondents). Increased market transparency would further benefit short term production and long-term investment decisions of farmers, improve research and the generation of knowledge on the FSC, and increase the effectiveness of public policies (all 71%).

As **main risks** of providing a higher level of market transparency, respondents mainly identify **imposing an undue burden (reporting costs) on operators** (57%) and confidentiality (43%).

If **additional measures** were **to be taken** to increase market transparency, most respondents (57%) believe that they would be taken **most effectively at several levels** (EU, private sector, MSs and the EU together with key third countries).

In terms of who should provide data, respondents would predominantly (60%) like to include **all operators** in the respective market **that qualify as a large or medium-sized enterprise**.

35% of the respondents consider that the **MSs should report to the Commission based on direct reporting by operators,** and another 35% state that **MSs should report to the Commission based on a method of their choice** (with operators reporting either to MSs and then MSs to the Commission, to both MSs and the Commission simultaneously, or directly to the Commission).

According to a majority of respondents (63%) **information should be published at the level of each MS**. The information should be published **as frequently as possible**, depending on the type of data being reported on (48% of the respondents), followed by weekly publications (29%).

45% of the respondents consider that **markets in all MSs and key external markets should be covered**. 35% consider that only representative markets should be considered.

53% of respondents would cover only key products, 32% opted for all products. A large majority (85%) considers, to a large or some extent, that **data collection and publication of products covered by public or private quality schemes** might improve the functioning of the FSC.

For half of the MSs respondents the **estimated annual administrative cost** for collecting market date is **unknown**. The ranking is followed by a cost estimation of 5 full-time equivalents (FTE) or more (by 29% of the respondents) and 3 to less than 4 FTEs (10%).

MSs agree to a large extent (76% of respondents) and to some extent (19%) that **market transparency is necessary for competition**. Some of them use existing data to assist in detecting possible cases of collusion.

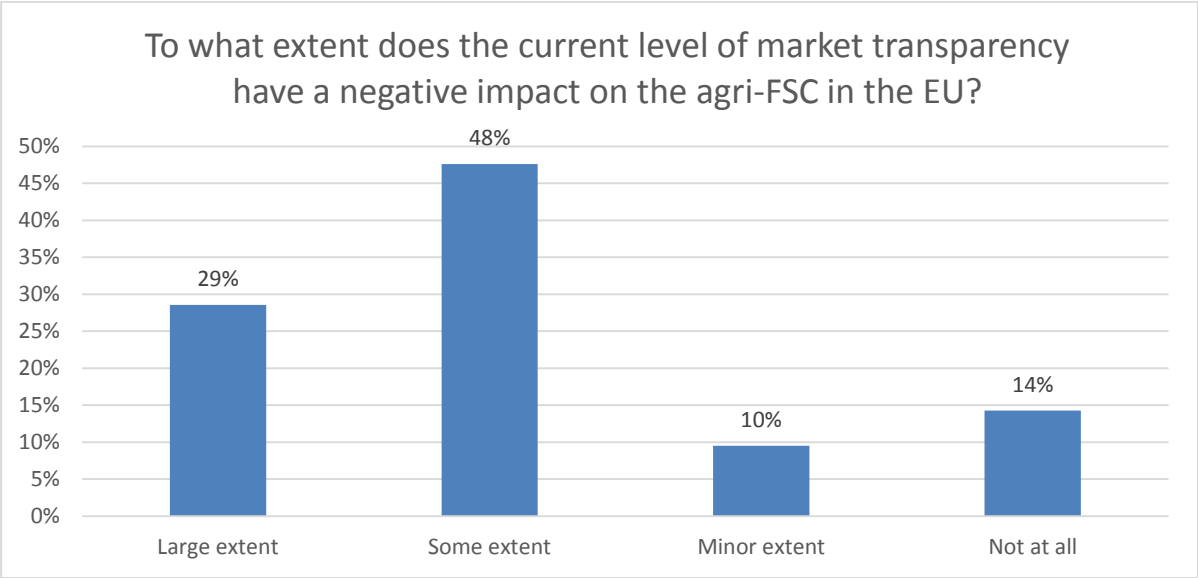
10.3 Respondents overview

The questionnaire to MSs was open between 06/09/2018 and 15/11/2018. A total of 21 responses from 20 MSs were gathered during that period (one MS contributed with two separate replies, one coming from the Ministry and another one from the Agricultural Paying Agency).

Percentages are based on the total number of respondents answering each question (not all 21 respondents replied to all questions)[310].

[310] Figures may not add up to 100% due to rounding.

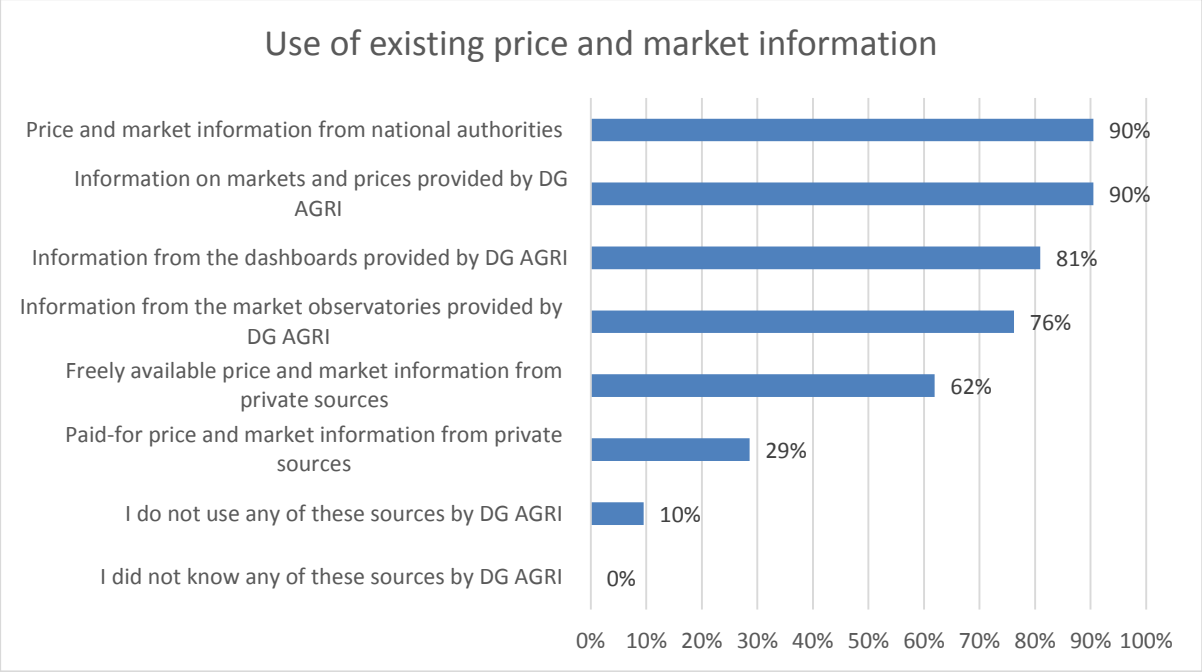
10.4 Baseline



77% of the respondents believe (to a large or to some extent) that the **current level of MT has a negative impact on the FSC in the EU**.

Examples of how the current level of market transparency affects the FSC, both in the MSs' countries and at the level of the EU:

- 81% of the respondents replied to this question (17 out of 21).
- When asked about examples of how the current level of market transparency affects the FSC, both in the MSs and at the level of the EU (including in terms of costs, if any) around a quarter of the respondents indicate that a lower levels of market transparency contribute to unequal bargaining power. MSs also mention, in no particular order, that lower levels of market transparency contribute to price volatility, lead to a negative impact on the distribution of profit along the chain, hinder adequate remuneration, make comparability of processed agri-food products difficult, complicate the identification of origin, increase the price gap between consumers and producers, contribute to sales below production cost, prevent an efficient functioning of futures markets and make it difficult for producers to promote on the market or in contracts their efforts made in terms of production quality, environmental sustainability of inputs and farming practices, or segmentation of production.
- One respondent highlights that national legislation does not allow requiring all the operators of the FSC to provide market information, not even for research purposes. Therefore, measures taken at the EU level would be welcome. Increased digitisation seems to have positive effects on market transparency and pricing. Through digitisation, getting informed and comparing prices has become easier. Price differences tend to differ less in in e-trade, at least in that MS, than in physical stores.
- An increased level of market transparency could facilitate the adaptation to changing farming and market conditions and the implementation of new solutions in agriculture. It could further allow better preparing for possible business risks, contribute to a more efficient functioning on the global market, and enable farmers to make well-informed business decisions.



National authorities and DG AGRI are stated most frequently (both 90%) as current sources for existing price and market information. This is closely followed by information from DG AGRI's dashboards (81%) and market observatories (76%). Only 2 of the respondents do not use any of DG AGRI's sources.

Freely available price and market information from private sources (62%) and paid-for price and market information from private sources (29%) come last in the ranking.

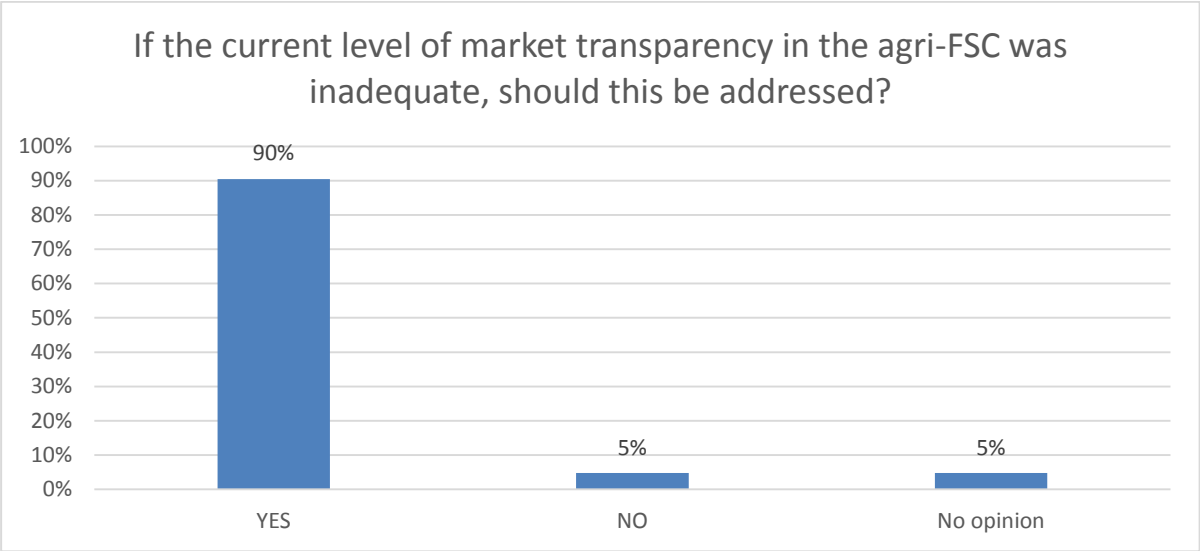
Additional sources mentioned, in no particular order, included Eurostat and national statistical agencies, FAO, OECD, USDA, the International Grains Council, state-owned companies, national agri-food market observatories, technical institutes and researchers.

The question on the use of data that are already collected on the FSC to detect collusion among operators is dealt with under the point on competition (collusion), below.

MSs already collecting market data on the FSC beyond what is required under EU legislation:

On the question whether MSs are already collecting market data on the FSC beyond what is required under EU legislation (and what kind of data they collect in which sectors, at which stages, and at what level of aggregation), 9 MSs replied positively, 7 MSs state that they do not collect any such data and 4 MSs do either not reply to that question or do not know whether such data are collected.

10.5 Need to act



90% of the respondents **believe that it should be addressed, if the current level of market transparency in the FSC was inadequate.**

While **2 MSs see no need for improved market transparency**, one of them acknowledges that following the recommendations of the Agricultural Market Task Force, improving availability of price data for key product sectors downstream of the farmgate (processors and retailers prices) might be worthwhile to be examined further.

One MS stated that gathering additional data would lead to increased costs and administrative burden, which should be avoided. Promoting voluntary agreements between different actors in the FSC might achieve increased market transparency, they state further, with public authorities playing a facilitating role.

Examples of how MSs would make use of additional data and what should be the top priorities in terms of market transparency:

On the question of how MSs would make use of additional market transparency data and what should be the top priorities in terms of market transparency in their respective countries, respondents stated the following:

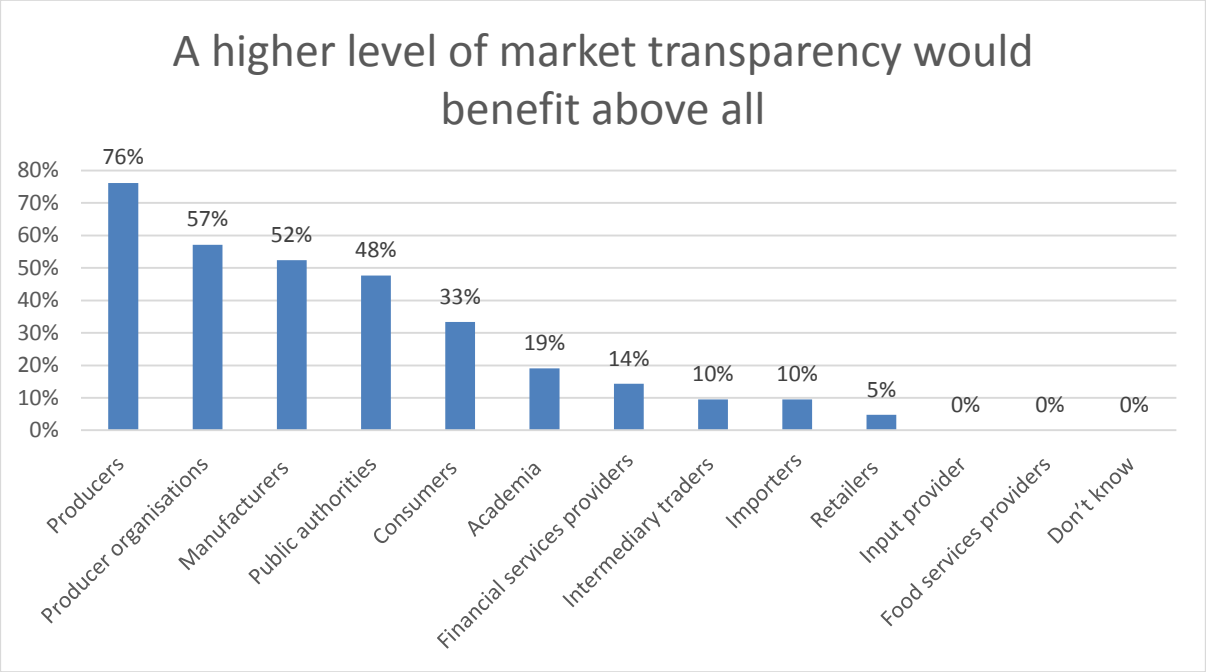
- For market participants, to reduce uncertainty and increase efficiency and fairness in the FSC, support contract negotiations, help promotion and marketing activities, develop information and communication technologies, and support innovation, education and knowledge sharing, through:
  - Studying ex-factory prices and thus better understand the distribution of value along the food chain
  - Providing domestic operators, and in particular farmers, with up-to-date market information on prices and with outlooks of market developments (oriented toward MS) to make proper production decisions and better plan new investments
  - Providing more timely information to take better informed decisions
  - Promoting a more efficient functioning of the market and better strategic choices among economic actors.
  - To level the playing field and ensure fair conditions among actors of the agri-food chain and more generally strengthen the position of the weakest actors in the chain (agricultural producers and consumers).
  - To provide an opportunity to stabilise the sales of products and increase the profitability of agricultural production

- To provide fair prices to consumers and inform them not only about retail but also producer prices
- Aiming at improving the conditions for producers to negotiate with traders and determine selling prices (through publication of margin of processors and publication of ceiling for retailers as well as data including the name of country of origin)
- To conduct effective marketing activities,
- To provide support for promotional and information activities in the MS and abroad
- To keep up with the latest development in data collection by digital methods, sharing best practices from other MSs and showing the impact on food policy outcome (including health outcome)
- To use the positive effects that digitisation seems to have on market transparency and pricing. Getting informed and comparing prices has become easier through digitisation.
- To support innovation
- To develop the level of education, knowledge and professional preparation of actors in the agri-food sector
- To streamline the process of knowledge transfer.

- For public authorities, to provide input for political decision-making
  - As an essential element to adequately design comprehensive public policy approaches and instruments
  - To address the issue of knowledge gaps on food sales data (food category analysis, product characteristics, most sold per category, nutrient profile of products within category, pricing and the category development over time). The sales data can contribute to improve food market as well as health policies, to analyse policy effectiveness, prioritise the improvement needs and further develop existing national food databases.
  - To enable public authorities to better observe markets, detect risks and respond to crises.

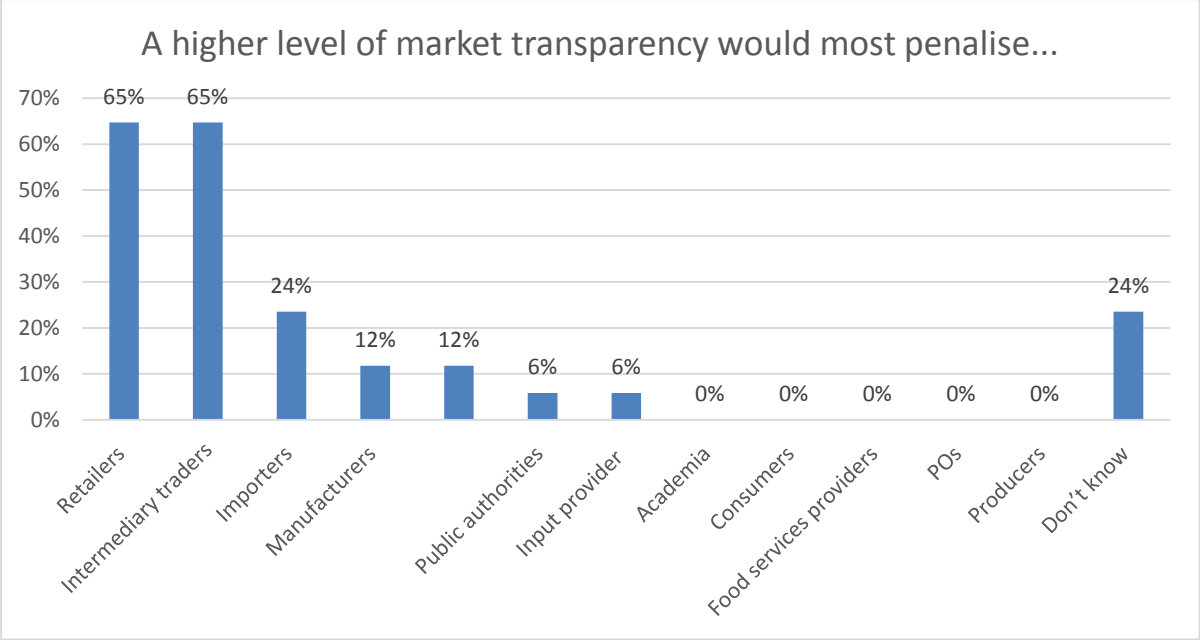
10.6 Potential benefits and risks of a higher level of market transparency

Economic actors to potentially benefit:



According to respondents, when asked to identify the top 3 beneficiaries from increased market transparency, a higher level of market transparency would mainly benefit producers (76%), producer organisations (57%), the manufacturing sector (52%), and public authorities (48%). **95% of respondents consider that it would benefit producers or producer organisations**[311]**.**

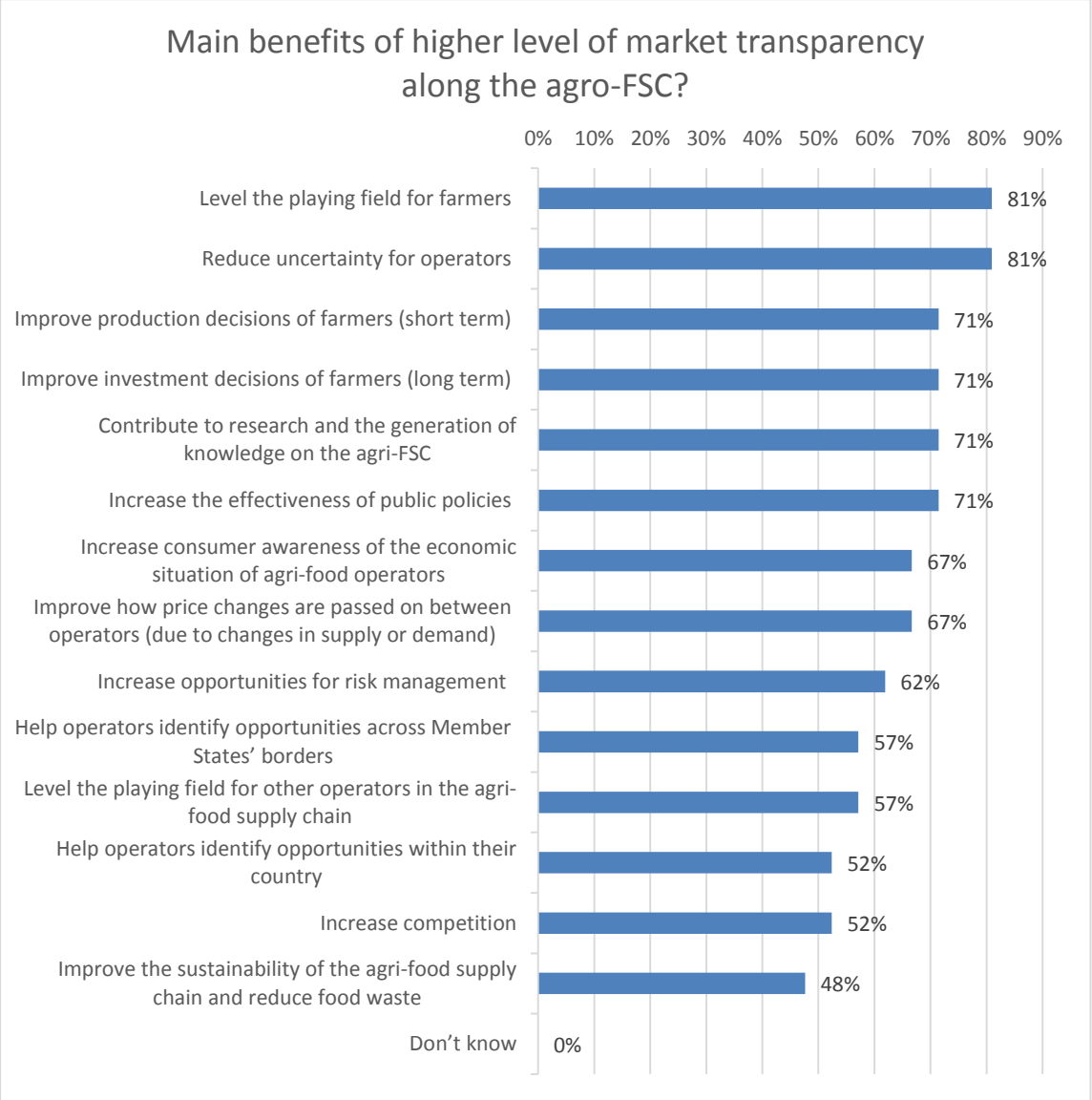
Economic actors potentially penalised:



Adversely, when asked to identify the top 3 negatively affected entities from increased market transparency, respondents believe that **a higher level of MT would most negatively affect retailers and intermediary traders (both 65%)**. While 24% do not have an opinion on that question, another 24% consider that it would penalise importers, 12% consider that manufacturers and financial services providers would be affected, and another 6% state public authorities and input providers.

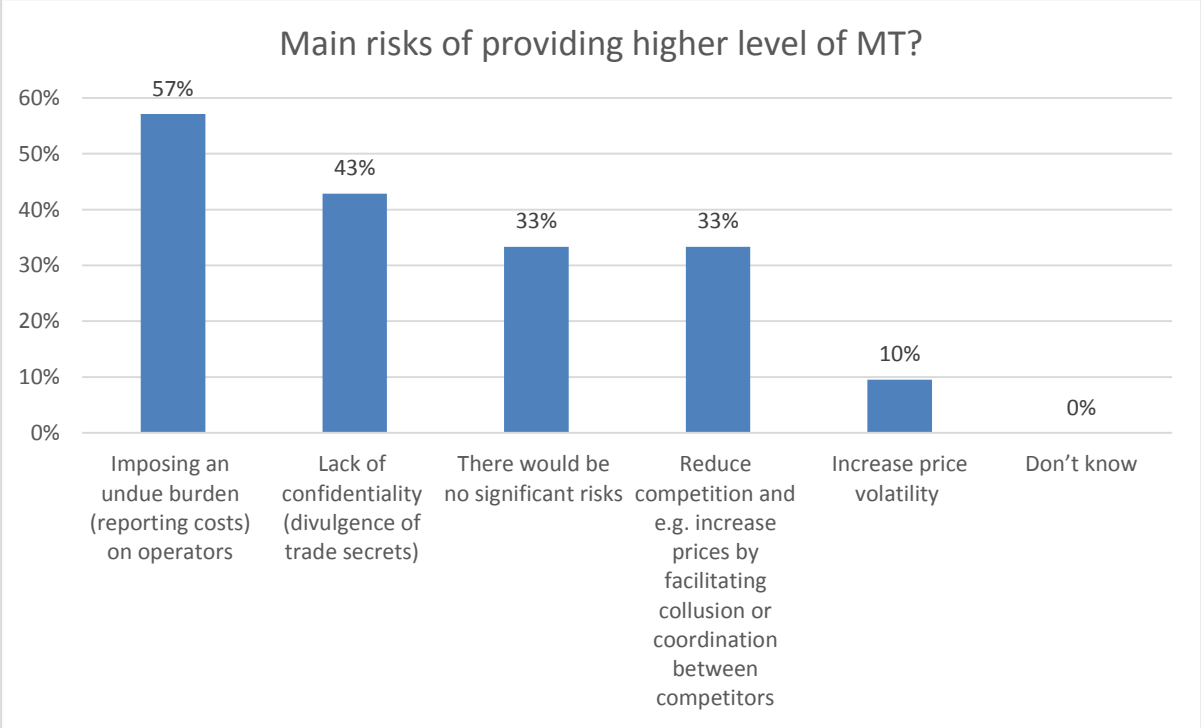
Potential benefits:

[311] Some respondents mentioned both agricultural producers and producer organisations, others one of these categories only.



When it comes to listing the top 3 benefits of higher level of market transparency along the agro-FSC, respondents consider that it would largely contribute to **levelling the playing field for farmers** (access to market information, bargaining power, mutual trust; 81%) and **reducing uncertainty for operators** (including price volatility; 81%). Increased market transparency would **further benefit short term production and long-term investment decisions of farmers** (both 71%), improve research and the generation of knowledge on the FSC (71%) and increase the effectiveness of public policies (e.g. improve market development, increase competition, avoid unintended consequences; 71%).

Potential risks:

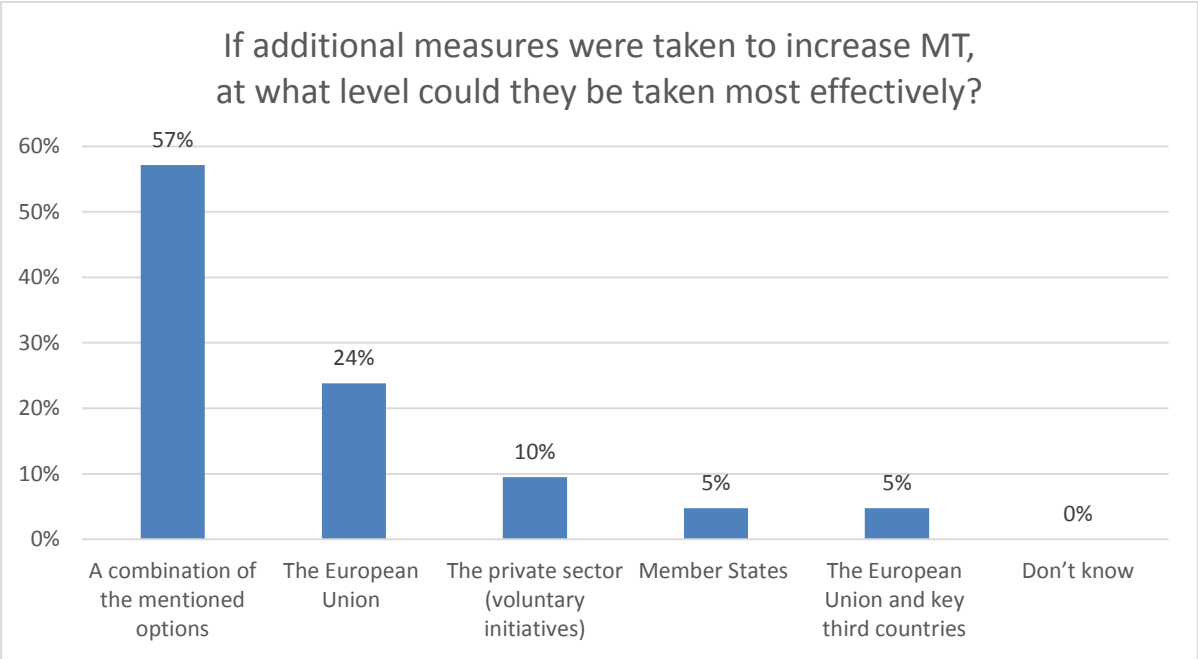


As main risks of providing a higher level of market transparency, respondents identify the **imposition of an undue burden** (reporting costs) on operators (57%) and **a lack of confidentiality** (divulgence of trade secrets) (43%).

33% fear that it would reduce competition and e.g. increase prices by facilitating collusion or coordination between competitors. Another 33% consider that there would be no significant risks and 10% state the risk of increased price volatility.

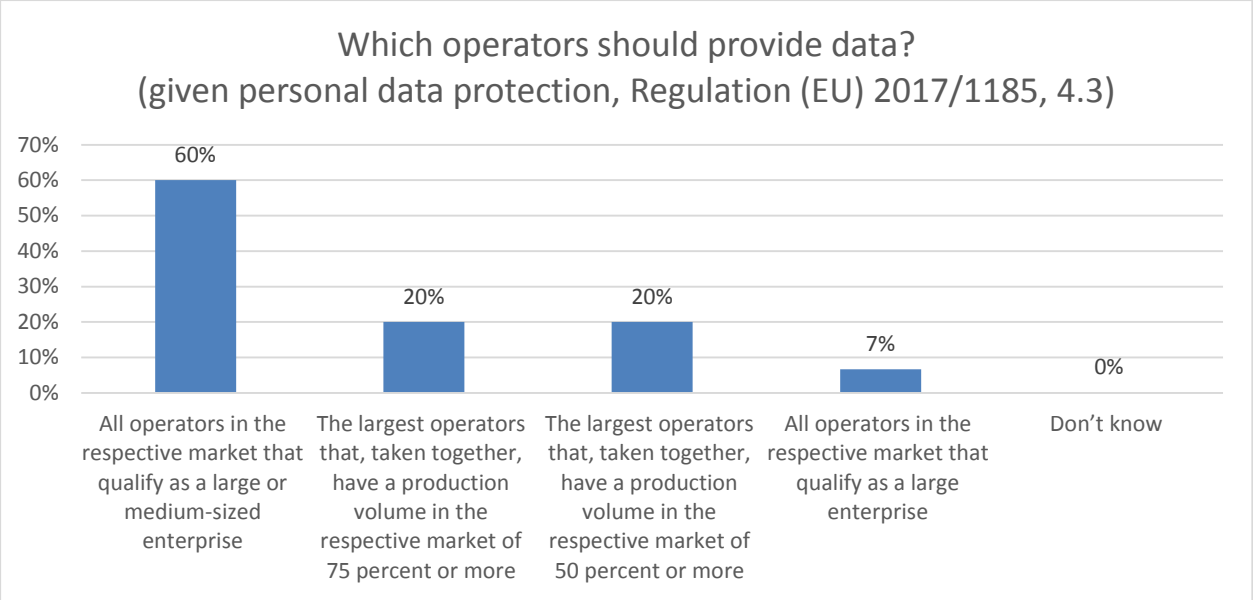
Individual respondents mentioned in open questions: (i) oligopsony power, (ii) the risk that varying market environments (between MSs) are not being taken into account, (iii) that putting focus on prices entails the risk of ignoring differences in quality and structure of different food chains, (iv) that high costs and administrative burden would apply not only to companies but also to MSs and the Commission (and that it would therefore be useful to make better use of existing data), (v) that accurate interpretation of data would be very difficult due to differences between similar products and MSs and that misleading data interpretation could entail bad business decisions.

10.7 Level of action



If additional measures were to be taken to increase market transparency, most respondents consider that a combination of action at several levels would be the most efficient way to address the issue. 5% consider that it should be taken at the level of the EU and key third countries, other 5% think that the MS is the most efficient level to deal with that question, and another 10% believe it should be the private sector (on a voluntary basis). 24% state the EU. **57% are in favour of a combination of the mentioned options**.

10.8 Which operators should provide the data?



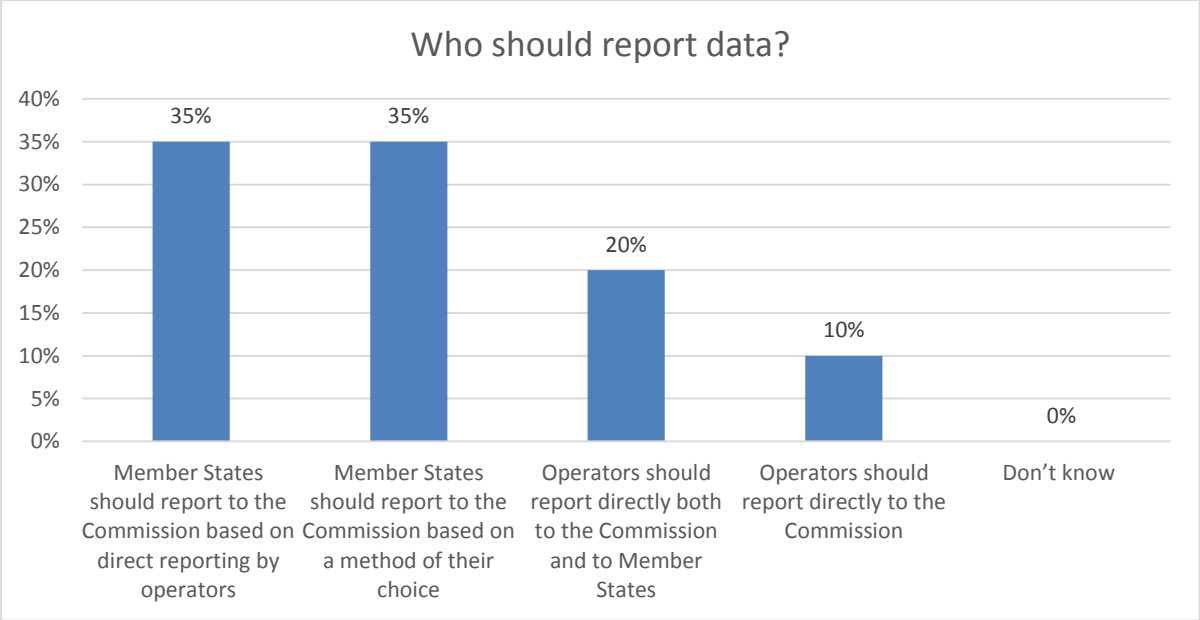
On the question of which operators are to provide data (given personal data protection)[312], **60% of respondents suggest to include all operators in the respective market that qualify as a large or medium-**

[312] 'Where information notified to the Commission is obtained from less than three operators, or where information from a single operator accounts for more than 70% of the quantum of such information notified, the Member State

sized enterprise, 20% mention the largest operators that, taken together, have a production volume in the respective market of 75% or more and yet another 20% state the largest operators that, taken together, have a production volume in the respective market of 50% or more. Seven percent of the respondents would include all operators in the respective market that qualify as a large enterprise.

Additional individual comments suggest including buying alliances as well as small operators and recommend carrying out a sector analysis before determining the scope of operators.

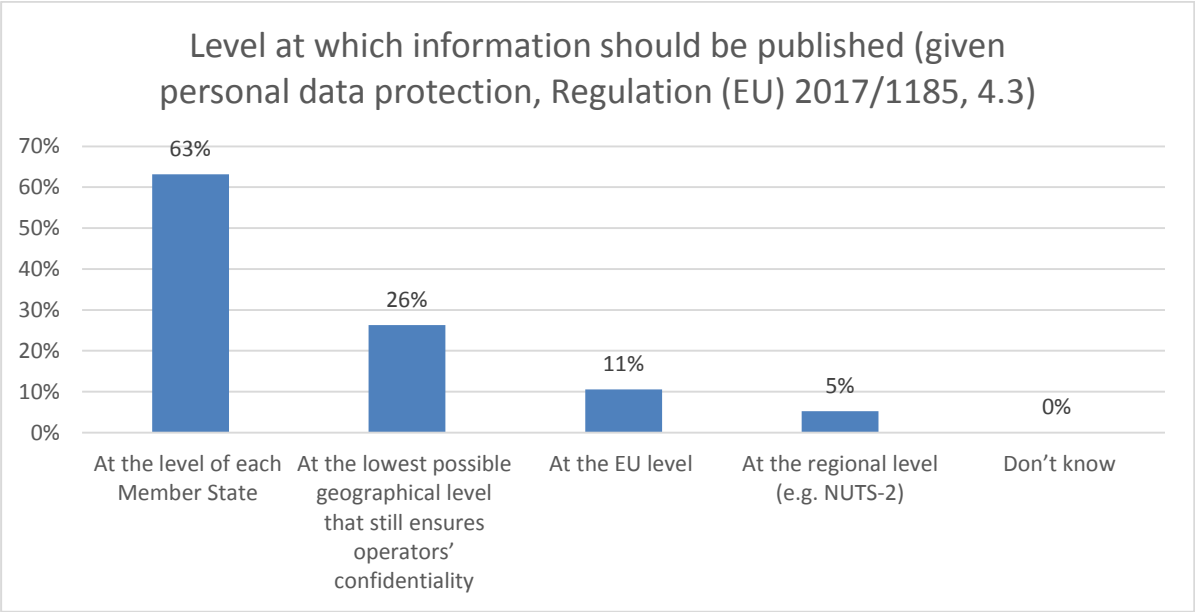
10.9 Who should report the data to the Commission?



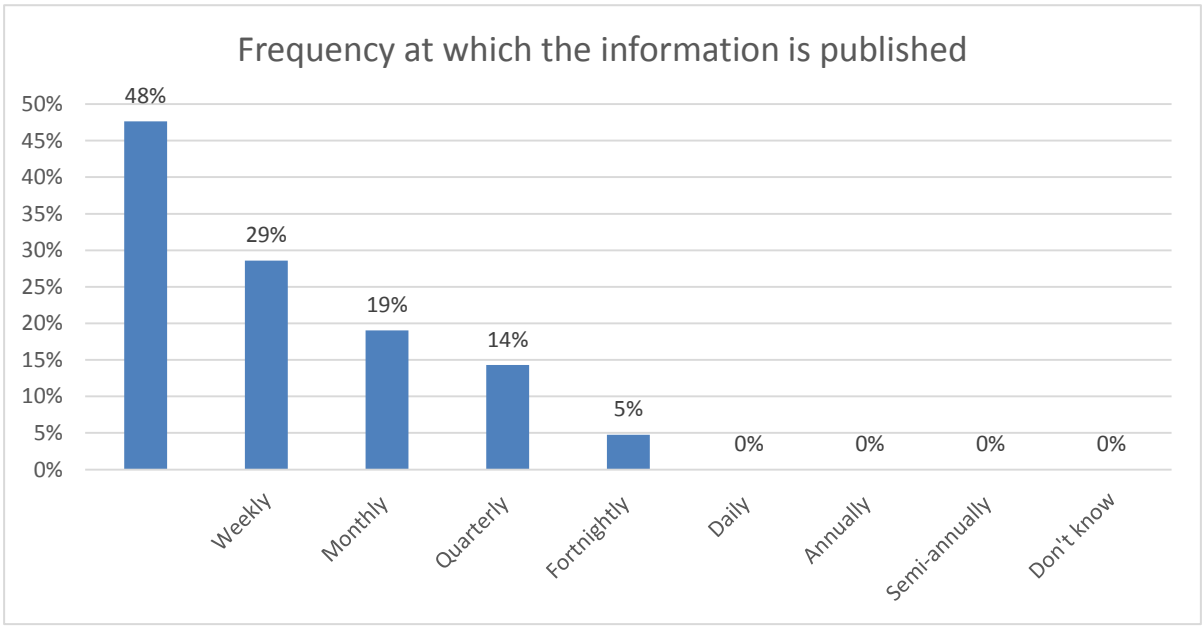
On the question who should report additional data to the Commission, 35% of the respondents consider that the MSs should report to the Commission based on direct reporting by operators, another 35% suggest that MSs should report to the Commission based on a method of their choice, 20% consider operators should report directly both to the Commission and to MSs and 10% believe that it would be most appropriate if operators were to report directly to the Commission. An additional individual comment underlines that this decision should depend on the market involved.

concerned shall signal this to the Commission when notifying the information' (Article 4 (3), Regulation (EU) 2017/1185, http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:32017R1185).

10.10 Level and frequency of publication

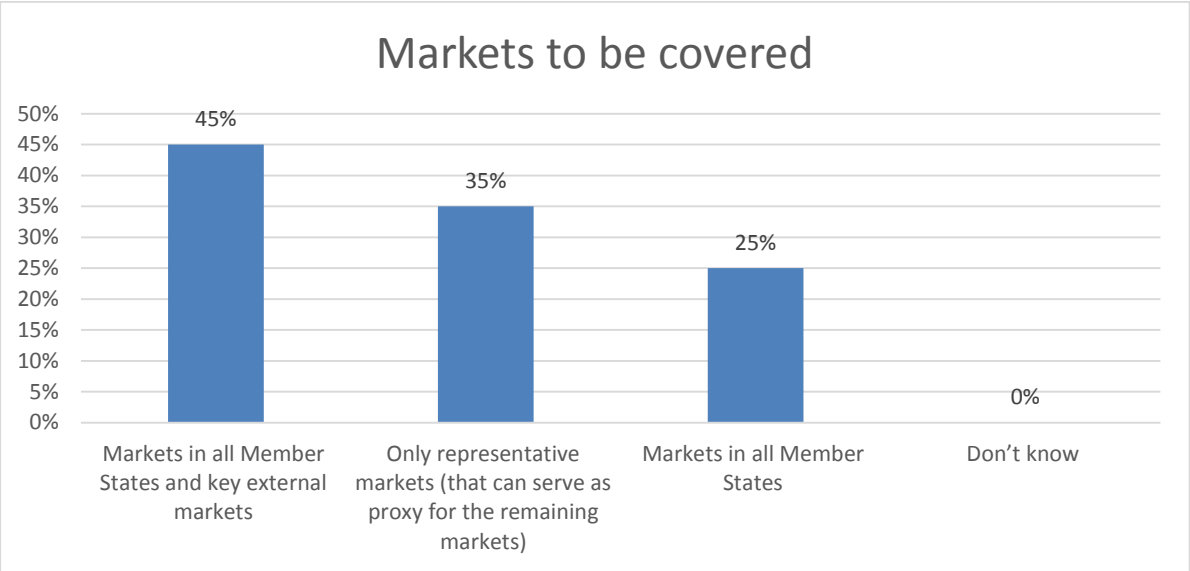


Questioned on the level at which information should be published[327], **63% of the respondents consider that it would be most adequate to publish at the level of each MS**, 26% would opt for the lowest possible geographical level that still ensures operators' confidentiality, 11% would chose at the EU level and another 5% at the regional level (e.g. NUTS-2).



When it comes to the frequency of publication, **48% of the respondents would publish as frequently as possible (depending on the type of data)**, 29% on a weekly, 19% on a monthly, 14% on a quarterly and 5% on a fortnightly basis. None of the respondents would publish on an annual, semi-annual or daily basis.

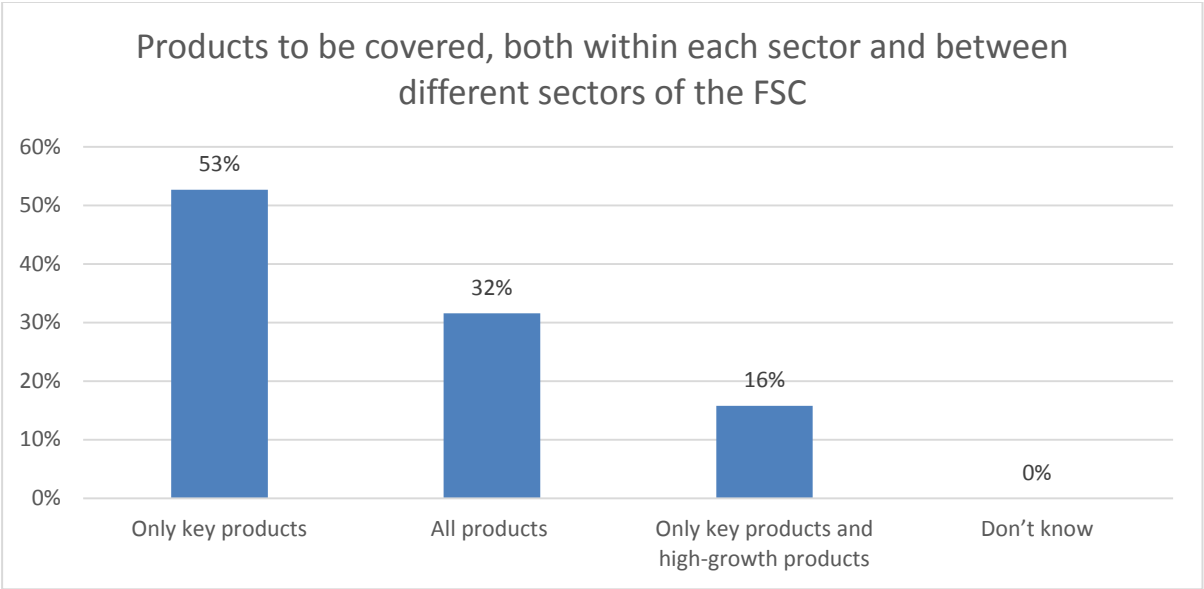
10.11 Markets to cover



As regards markets to be covered, **45% of the respondents consider that markets in all MSs and key external markets would need to be covered**, 35% would select only representative markets that can serve as proxy for the remaining markets and 25% would cover markets in all MSs.

A respondent mentions the importance of avoiding any unnecessary administrative burden such as reporting on products not produced in the MS.

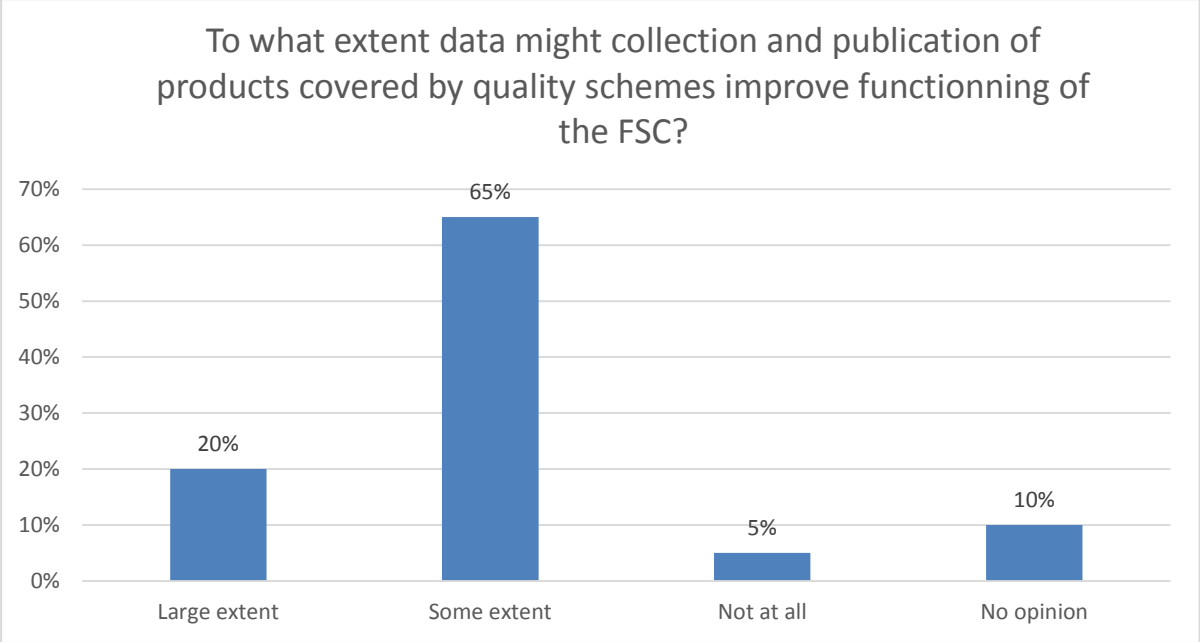
10.12 Products to cover



In case action were to be taken to increase current levels of market transparency, both within each sector of the FSC and between the different sectors of the FSC, **53% of respondents would opt for key products only**, 32% would select all products and 16% would exclusively chose key products and high-growth products.

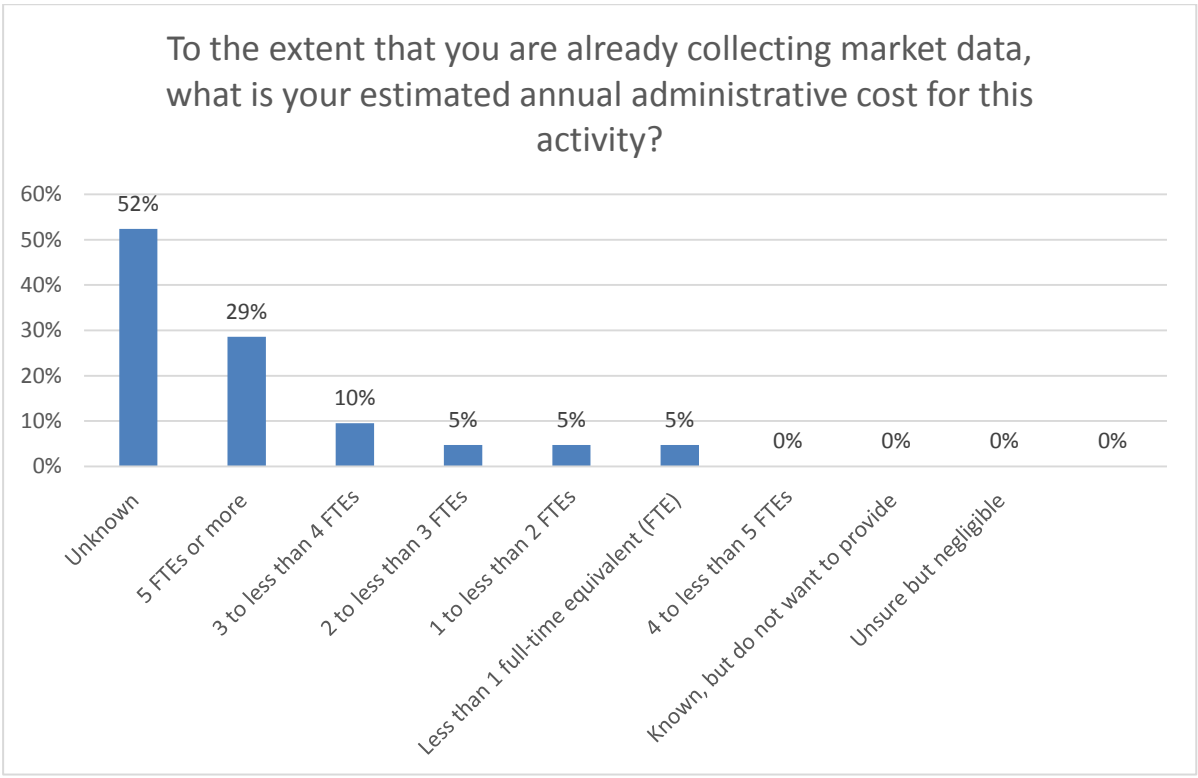
Additional individual mentions suggest to start with key less processed products and to choose only products appropriate for comparison.

Quality schemes:



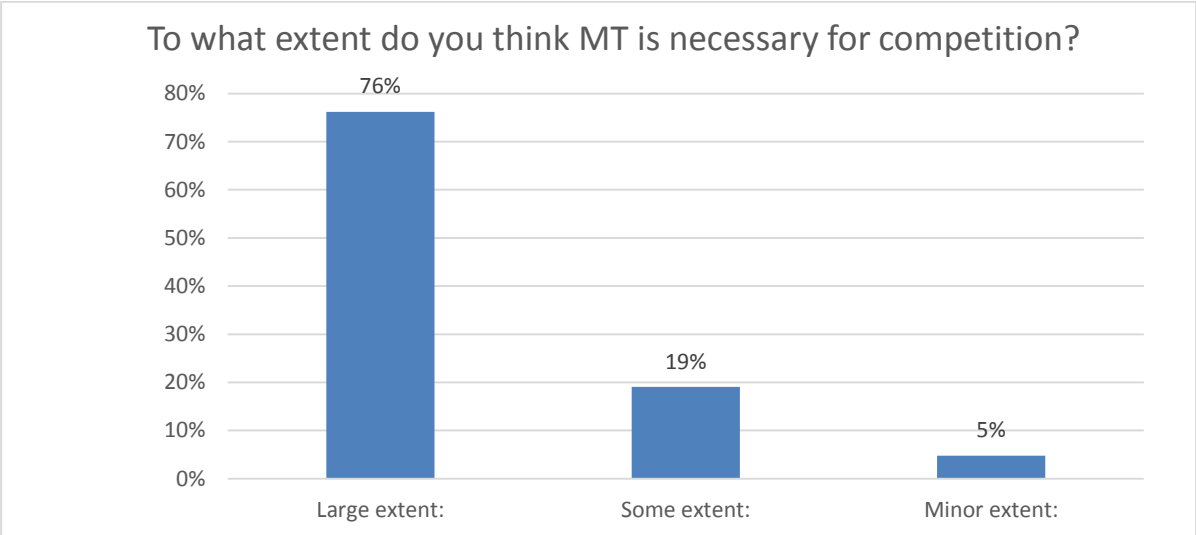
Collecting and publishing market data on products covered by public or private quality schemes (such as those relating to animal welfare, geographical origin, fair trade, environmental impact, religious requirements, organic production, etc.) **might improve the efficient functioning of the FSC for 85% of the respondents** (65% to some extent, another 20% to a large extent).

10.13 Administrative cost



The estimated annual administrative cost for collecting market data is unknown to about half of the respondents. The ranking is followed by a cost estimation of 5 full-time equivalents (FTE) or more (for 29% of the respondents); 3 to less than 4 FTEs (10%); 2 to less than 3 FTEs (5%); 1 to less than 2 FTEs (5%); and less than 1 FTE (5%).

10.14 Competition (collusion)



95% of the respondents consider that market transparency is necessary for competition to a large or to some extent.

- Examples of MSs already using existing data to detect collusion:
- On the question of to what extent the MSs are using data that are already collected on the FSC to detect collusion among operators, 5 MSs indicated they were doing so, 5 others do not use data in this way, and 10 others did either not reply, had no opinion or were not clear enough in their answer.
- Among those already using such data for the indicated purpose, the following statements were made**:** one MS uses market data to determine the market price on a representative market with regard to competition policy, another for the purposes of ensuring fair competition between businesses, another provides the data to the Federal Competition Authority that uses this kind of data occasionally in its investigations. One MS has used existing data as a filter to detect the existence of market power at specific levels of the food chain, another respondent sees economic data, from all sectors combined, as essential to the monitoring of market competition because these make it possible to usefully guide the search for indications of anti-competitive practices, taking into account possible observed market failures. The data are further used to asses anti-competitive practices in terms of its effects on the market. Finally, these data make it possible to assess the damage caused to the economy and based on that to calculate penalties.

10.15 Member States' plans for the future

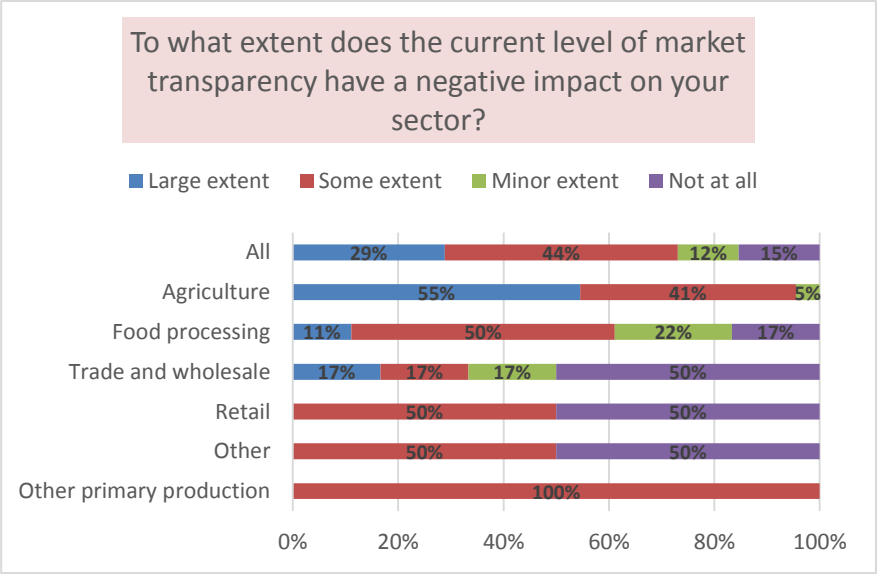
- On the question of what are MSs' plans were for the future with regard to market transparency, 13 respondents gave some indications on plans, 5 stated having no concrete plans or are awaiting the outcome of the Commission's initiative, and 3 others did not reply.
- According to MSs who have some plans for market transparency for the future, they indicated that they were mainly aiming at:
- Providing producers with initial and final selling prices in the FSC to increase producers' position in negotiations with traders
- Securing fair conditions for all actors in the FSC
- Using the benefits of increased market transparency to help support the implementation of the future CAP
- Ensuring more informed and transparent business-to-business relations for all operators in the EU internal market and in the MSs as well as benefitting administrations with policy design

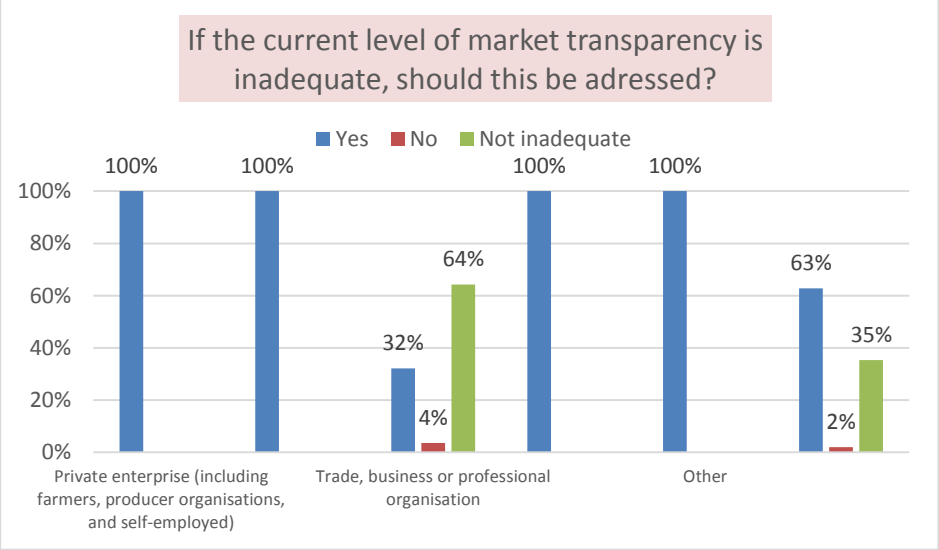
- Strengthening government's data powers to enhance the collection and sharing of data along the supply chain. These powers will allow governments to address data deficiencies and improve transparency along the supply chain
- Starting a programme for monitoring costs, margins and prices in the FSC, with special focus on requirements regarding sustainability and animal welfare.
- Implementing annual surveys in food retailer's stores
- Improving the data available and used for the for an existing agri-food MIS
- Increasing the frequency of publication of quality information for operators
- moving up the value-added chain, collecting existing market data and using information and communication technologies
- Providing entrepreneurs and farmers with information on the markets of agricultural and food products in the form of market analyses and analytical and forecasting studies. Presenting the supply-demand and price situation on agricultural markets and foreign trade in agri-food products. Continuing to take feedback from representatives of the agri-food sector to make the MIS more transparent
- One MS advises considering the possible benefits to international competitors who are not themselves subject to transparency obligations in their home markets. According to this respondent third-country operators could, in their transactions with European operators, benefit from asymmetric information prejudicial to the latter. One MS that is not convinced of the need for additional market transparency action states that it will consider the outcome of the Commission's sector analysis to help identify if such a need exists in the different sectors. Should this need be confirmed, the concerned MS considers that action should be taken by setting up non-legislative private voluntary initiatives. They presenting the idea to the private sector of establishing a private initiative platform showing the financial products that are available to FSC operators.

11 Annex IV - Results from the specific questionnaire to undertakings

11.1 Key results

- 55 responses were obtained from various stages of the FSC: agriculture (22), food processing (18), wholesale (7), retail (3), other (3), other primary production (2).
- 98% of **respondents** state that market transparency is necessary for competition in the FSC to a large or to some extent.
- 73% of **respondents** state that the current level of market transparency has a negative impact in their sector.
- 63% of **respondents** say if the current level of market transparency is inadequate this should be addressed. This is 96% for the **agricultural sector** and 32% for the **processing sector**.
- Most respondents that believe that the current level of market transparency is not inadequate are from the **food processing** stage (78%). These are all trade, professional or business organisations.
- 71% of **respondents** that would like to see an increase in market transparency would like the EU to address this.
- Note that the figures reported exclude respondents not answering the question or stating they have no opinion.



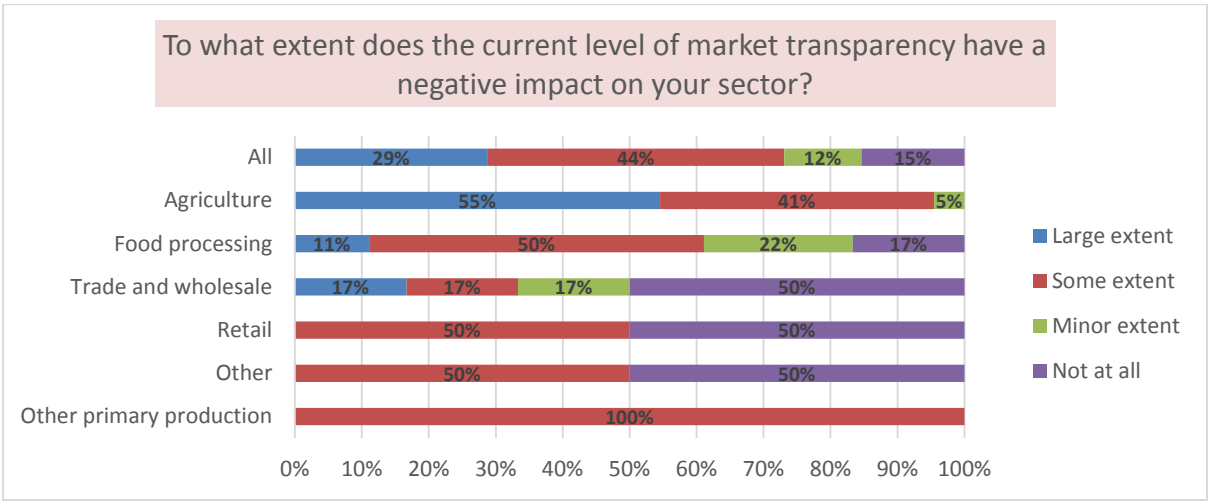


11.2 Detailed results from the questionnaire

11.2.1 Respondents overview

The questionnaire to undertakings was open between 21/08/2018 and 21/10/2018 and a total of 55 responses were gathered during that period. The respondents are involved at various stages of the FSC: agriculture (22 or 40%), food processing (18 or 33%), trade and wholesale (7 or 13%), retail (3 or 5%), other (3 or 5%) and other primary producers (2 or 4%). Figure 1 illustrates this in detail by sector. In terms of organisation types, 56% of the respondents are trade, business or professional organisations, 22% are private enterprises and 16% are NGOs. Of the private enterprises that participated in the questionnaire, the large majority are SMEs (83% or 10 respondents). Of the business and trade organisations, 52% of the respondents represented the food-processing sector, 16% the trade and wholesale sector, 13% the agricultural sector and 10% the retail sector. Figure 2 illustrates the proportion of each organisation type per sector within the respondents. In terms of MS representation, the majority of respondents originated from Belgium (33%, 2/3 of which are trade, business or professional organisations), Ireland (18%), The Netherlands (9%), Germany (7%) and France & Spain (each 5%). Responses were obtained from 15 MSs. Refer to figure 3 for more detail.

11.2.2 Baseline



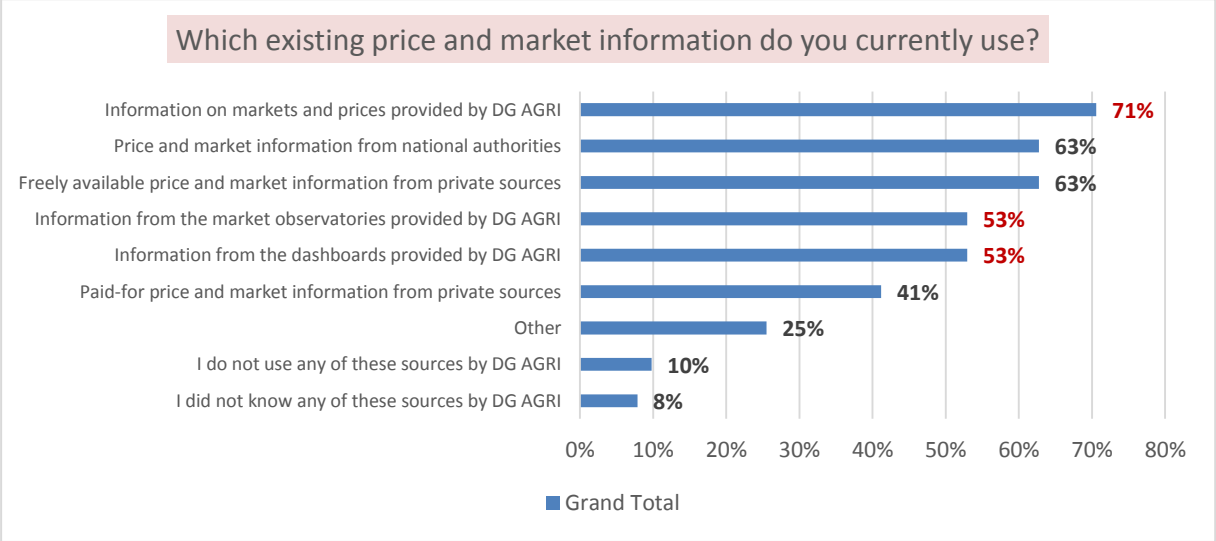
73% of all respondents state that the current level of market transparency has a negative impact in their sector to a large or to some extent, while 27% mention there is a negative impact to their sector to a minor extent (12%) or no extent at all (15%). The answers vary across sectors with 96% of respondents from the agricultural sector stating the current level of market transparency has a negative impact on their sector to a large (55%) or some extent (41%), with no respondents saying there is no negative impact at all. When asked the same question, 66% of the respondents from the food processing sector answered there is a negative impact to a large extent (11%) or some extent (50%), with 39% of respondents mentioning there is a negative impact to a minor (22%) or no extent at all (17%). 57% of respondents from the trade and wholesale sector say the current level of market transparency has no negative impact at all on their sector of activity (with 75% being trade and business organisations). Finally, for the retail sector, one respondent states there is a negative impact on their sector to some extent, one responded to no extent at all and one respondent had no opinion.

Sector / organisation type matrix - respondents impacted negatively by current level of market transparency (large or some extent)					
	Private enterprise	Trade, business or professional organisation	Regional or local authority	NGO	Other
Agriculture	100%	100%	100%	86%	100%
Food processing	-	63%	-	-	100%
Trade & Wholesale	-	50%	-	-	-
Retail	-	50%	-	-	-
Other	-	-	-	100%	-
Other Primary prod.	100%	100%	-	-	-

When looking at enterprises, 80% of SMEs state the current level of market transparency has a negative impact in their sector to a large (60%) or some extent (20%). The remaining 20% assessed the negative impact as minor. No SME respondent mentioned there was no negative impact. SME's represent 83% of all enterprise respondents. We obtained feedback from two large enterprises, with one respondent mentioning the current level of market transparency has a negative impact to some extent and one stating there is no negative impact.

Concerning the potential negative impact on their product market, 91% of respondents from the agricultural sector say that the current of level of market transparency has a negative impact in their product markets to a large or to some extent. This was also stated by 61% of respondents from the food processing sector and 50% of respondents from the retail sector (one respondent). These results are consistent with the above statement on the negative impact on their sector. The largest group of respondents are active in more than one specific product market (19 responses). 89% of these state the current level of market transparency has a negative impact in their product markets to a large or to some extent. Respondents in the markets for respectively dairy (88%) and fruit & vegetable (75%) products say that the current of level of market transparency has a negative impact to a large or to some extent. The outlier here is the meat sector, where 29% of respondents state the current level of market transparency a negative impact to a large or to some extent. All respondents from the meat sector that mention a negative impact to a minor extent or no extent at all, are trade associations representing the food processing stage. Respondents from the olive oil and sugar sectors (one from each) mentioned being negatively impacted to some extent.

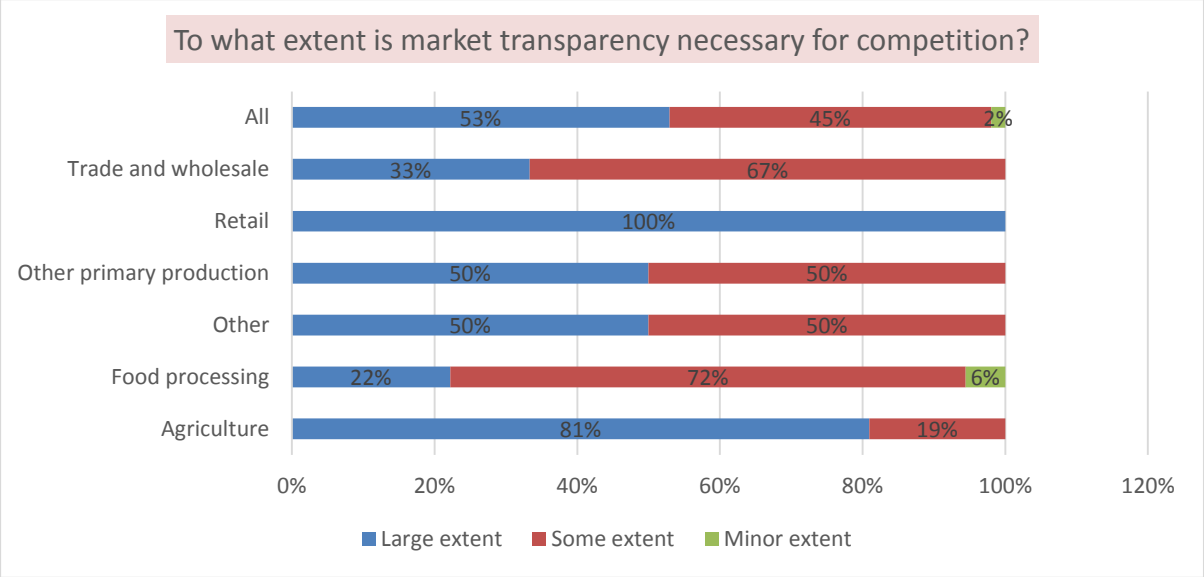
When asked about specific examples of how the current level of market transparency affected them, respondents from the agricultural sector state that the lack of transparency on, for example, prices and margins results in a lower bargaining power for producers compared to the processing sector. In turn this results in lower (and unfair) prices for producers, revenue shifts towards processors, difficulties in planning optimal marketing and production periods and market instability. Actors in the food processing stage did not mention any examples of negative impact from the current level of market transparency, some stating the current level of market transparency is sufficient to allow proper decision making without jeopardising competition rules. One respondent from the wholesale sector mentioned the current level of market transparency doesn't allow for smaller players to participate in the market.



On the use of existing price and market information data, most respondents (71%, or 36 respondents) say they use information on markets and prices provided by the European Commission. 63% of respondents use price and market information from national authorities, and 63% of respondents use freely available private and market information from private sources. About half of all respondents use data from market observatories and dashboards by DG AGRI. Only a small number of respondents did not know about European Commission data sources (8%, or 4 respondents), or knew about these sources but did not use them (10%, or 5 responses). A larger group of respondents (21 respondents or 41%) use paid-for price and market information from private sources. The largest share being trade, business or professional organisations (52%), mostly from the agriculture and food processing sector. 2 of these respondents are private companies (10%). Out of the 12 enterprises that participated in the questionnaire, only 2 use paid-for-data (17% of all). This indicates that MT provides tangible benefits to stakeholders.

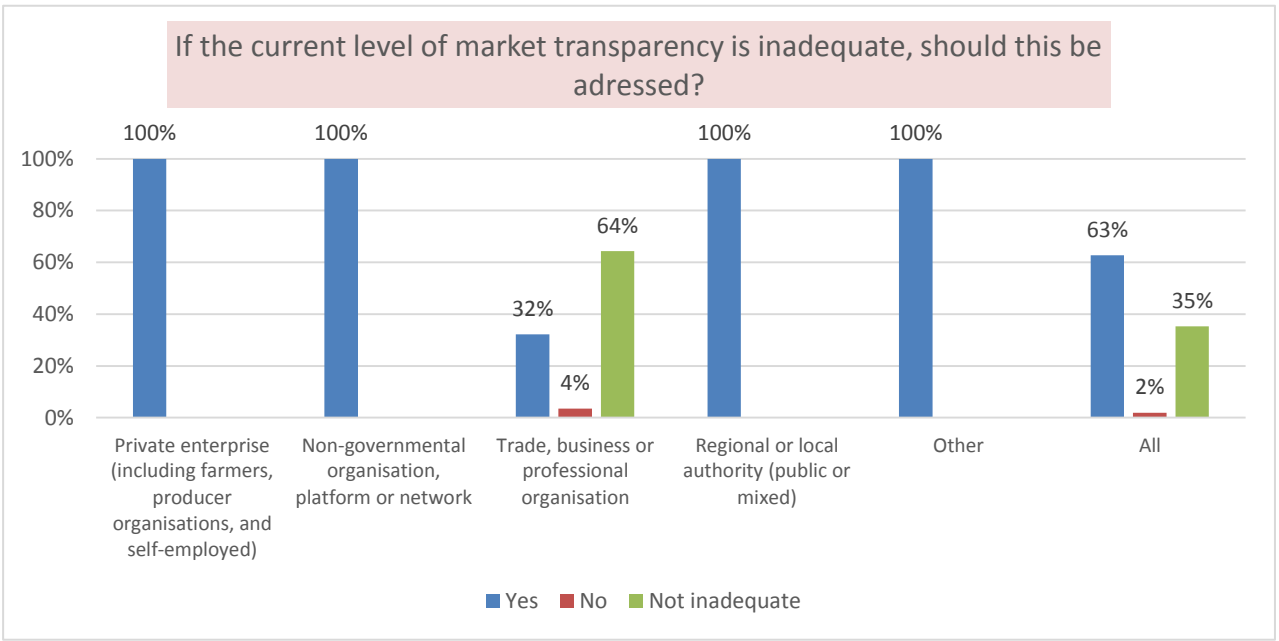
11.2.3 Need to act on market transparency

98% of respondents state that market transparency is necessary for competition to a large (53%) or some extent (45%). These results are consistent across sectors, although there are differences as to which extent market transparency is necessary. 81% of respondents from the agricultural sector say market transparency is necessary for competition to a large extent and 19% mention it is necessary to some extent. A smaller share of respondents from the processing sector believe it is necessary to a large extent (22%), while 72% state it is necessary to some extent. The retail sector is closer to the opinion of the agricultural sector, with all respondents saying market transparency is necessary for competition to a large extent (2). No respondents state that market transparency is 'not at all' necessary to competition (one did not answer the question).

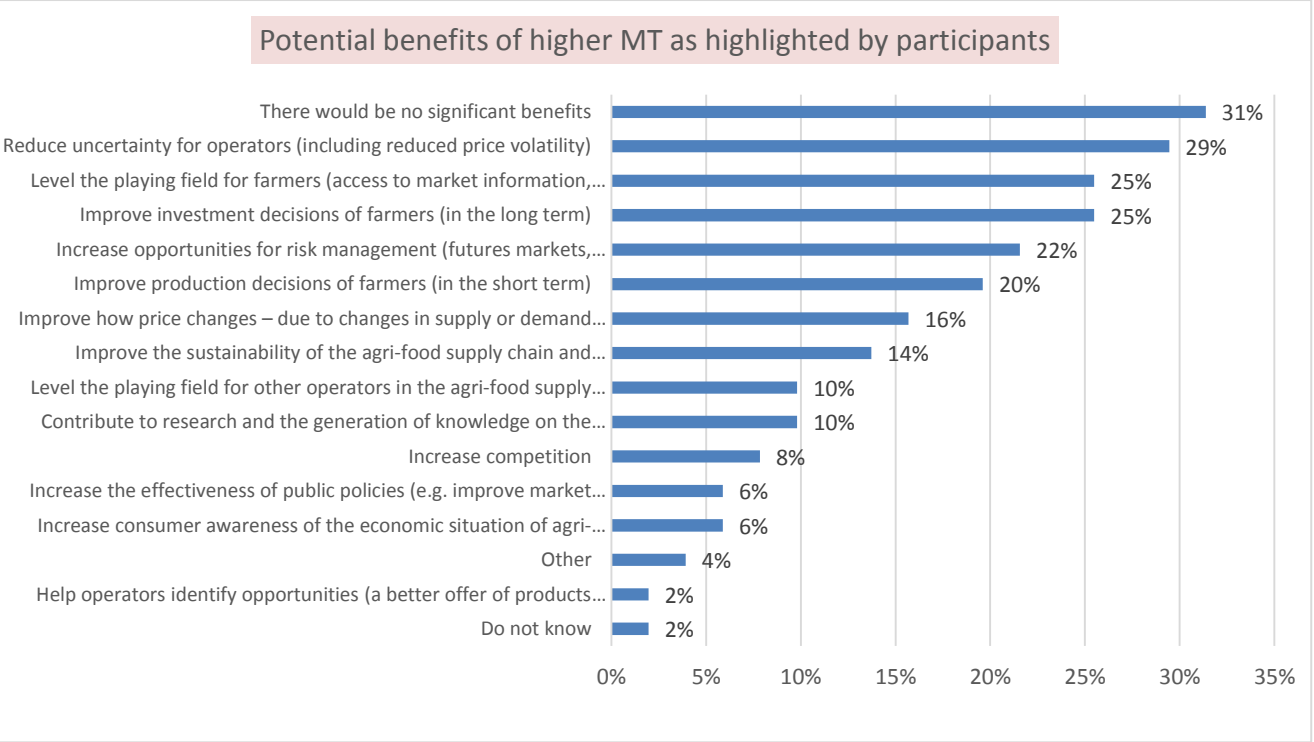


92% of private enterprises (including farmers, producer organisations, and self-employed) and 100% of NGOs think market transparency is necessary for competition to a large extent. Only 25% of trade, business or professional associations think this is the case (most of those who do not are trade associations in the food processing sector).

When asked whether the current level of market transparency was inadequate and if this should be addressed, 63% of respondents mention the current level of market transparency is inadequate and this should be addressed, while 35% answered the current level of market transparency is not inadequate (all of these are trade, business or professional organisations in food processing (78%), wholesale (17%) and other sectors (6%)). The remaining respondents (2%) state that although they believe the current level of market transparency is inadequate, this should not be addressed.



11.2.4 Potential benefits



67% of respondents agree there would be benefits to increased market transparency (34 of the 51 respondents). When questioned about the top 3 possible benefits of a higher level of market transparency, the followings benefits were identified by at least 20% of respondents:

- Reduce uncertainty for operators (including reduced price volatility) ~**29%** of respondents
- Improve investment decisions of farmers (in the long term) ~**25%** of respondents
- Level the playing field for farmers (access to market information, bargaining power, mutual trust) ~**25%** of respondents
- Increase opportunities for risk management (futures markets, insurance options, access to credit, improved contracts, etc.) ~**22%** of respondents
- Improve production decisions of farmers (in the short term) ~**20%** of respondents

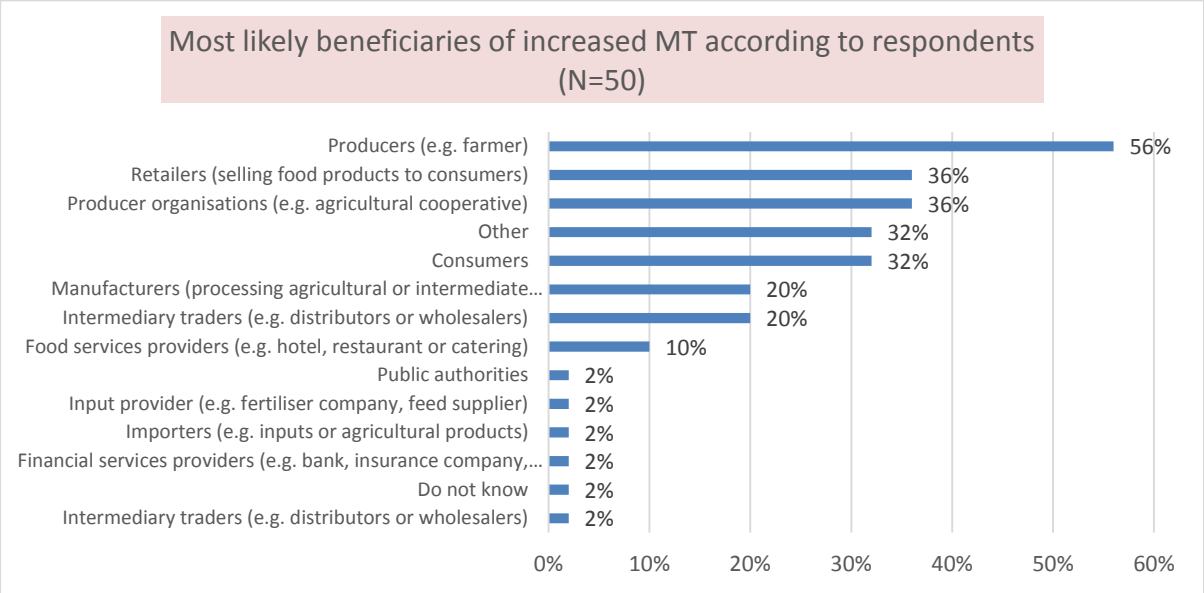
31% of respondents are of the opinion there would be no benefits (16 out of 51 respondents). All of these respondents are trade, business or professional organisations, mostly from the food processing sector (88% or 14 respondents) and the trade and wholesale sector (6% or 1 respondent).

Finally, one respondent (2%), did not know which benefits would arise from an increase in market transparency.

Asked to give further detail to their answers on benefits, the respondents from the agricultural sector stated they would prioritize information to be gathered around prices and / or margins at the different levels of the supply chain. This would be used to obtain better prices and increase revenue for producers. There are however specificities based on the product market. One respondent from the sugar sector mentioned the need to gather consumption and price data on second stage processors and also capture retail prices for products containing sugar. Respondents which focus on more than one specific market also mention data should be gathered more broadly (volume / prices / stocks / production / consumption / trade intra EU & 3rd countries), in a more timely manner and for more products. More market information would allow a better understanding of the distribution of margins along the food chain, better negotiation for prices, marketing planning, production planning and longer term strategic decisions for all agricultural producers and for SMEs.

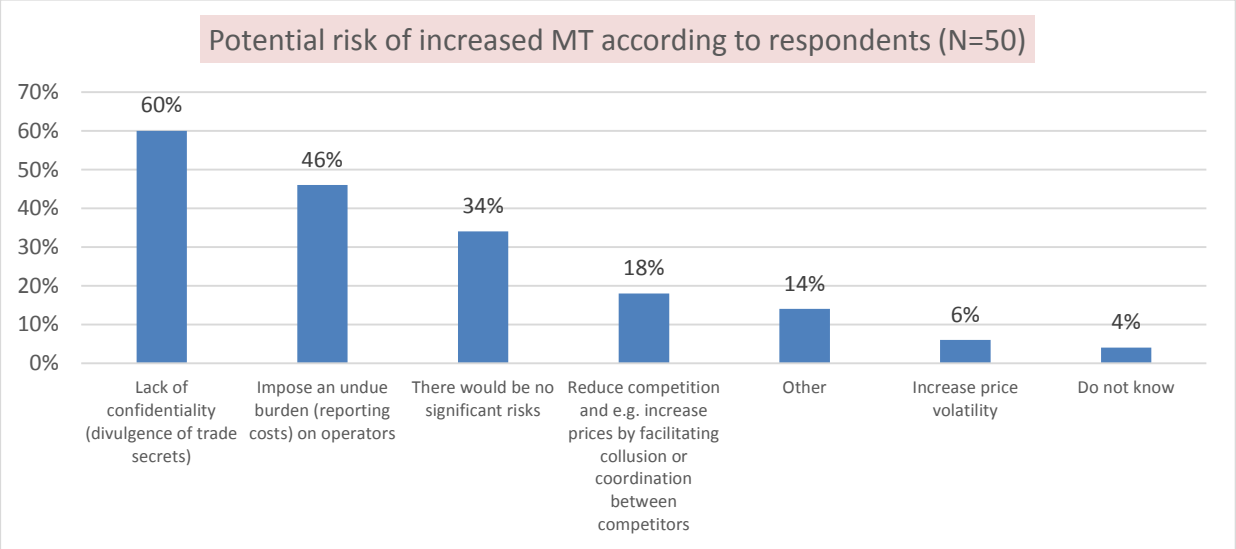
If additional information was to be gathered (although this was not considered necessary), food processors from the meat industry mentioned the following data points (by order of priority): consumption data, production volumes, more timely and more detailed data (by product / cut), and data on imports and exports.

One respondent in the wholesale sector mentioned additional information should be gathered on consumption data at the retail level as this data are currently being purchased from private sources.



The main beneficiaries of a higher level of market transparency would be agricultural producers, according to 56% of the respondents, followed by producer organisations (36% of respondents), retailers (36% of respondents) and consumers (32% of respondents). When looking at responses from the processing sector, the main beneficiaries quoted are the retail sector (for 12 out of 18 participants) and the distribution or wholesale sector (for 9 out of 18 participants). 12 respondents mentioned 'other' while some stated operators in third countries would be the main beneficiaries. These comments came from the trade associations representing the processing sector. Respondents from the agricultural sector highlighted producers (farmers at 86% and producer organisations at 64%) and consumers (45%) as the main beneficiaries of increased MT.

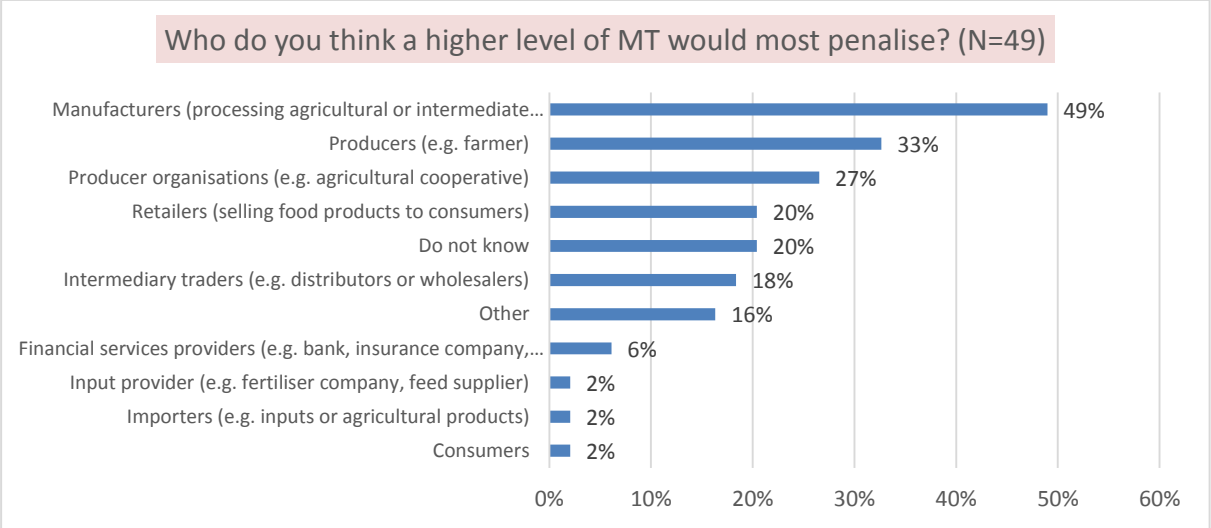
11.2.5 Potential risks and challenges



In total 50 responses were obtained regarding potential risks of an increase in market transparency. 62% of these respondents (31) believe an increase in market transparency would have risks. When asked about the risks of increased market transparency the main concerns expressed are the possible lack of confidentiality of the data (30 respondents express this concern or 60% of those answering the question). Of these 80% are trade, business or professional organisations (mostly in food processing sector; 67%). The second main concern is the imposition of an undue reporting cost burden on operators (46%). Also here, 83% of respondents are trade, business or professional organisations mostly in processing sector (79%). The third main concern is the reduction of competition by facilitating collusion between competitors (18%).

17 respondents (34% of respondents) think there would be no significant risks. 71% of these are in the agricultural sector, with the rest closely distributed between other primary production, food processing, retail, and trade and wholesale. 35% of respondents who believe there would be no significant risks to increasing market transparency are private companies (all SMEs). One respondent in the agricultural sector mentioned a higher level of market transparency could lead to increased price pressure for operators.

Finally 2 respondents (4%) state not to know what the risks could be.



According to 49% of the respondents, food processors would be among the top 3 most penalised groups by an increase in market transparency. 58% of these respondents are active in the food processing sector while 25% are active in the agricultural sector (mostly trade associations in these two sectors, representing 79% of the total respondents). Agricultural producers came in second place, with 33% of respondents stating they would be most penalised, followed by producer organisations (27%). In both cases at least 85% of respondents are trade, business and professional organisations (in both cases entirely in the food processing sector). According to respondents, the groups least likely to be penalised by increased market transparency are consumers, importers and input providers to the farming sector.

11.2.6 Setup and annual running costs

12 private enterprises answered the questionnaire. Of these, 11 (or 92%) answered the questions regarding setup costs and annual running costs. 7 companies are collecting data later used for reporting on market transparency (64%). Of the private enterprises answering the question 90% are SMEs.

When asked about the set-up costs of existing systems[313]:

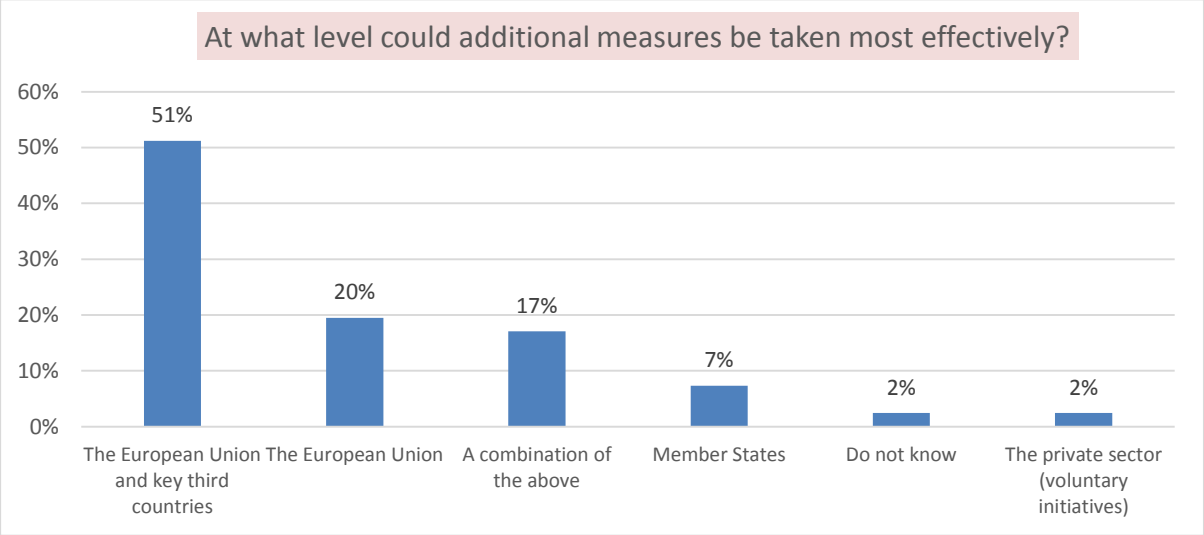
[313] The remaining respondents say they are currently not collecting data used for market transparency purposes, or that they do not know the costs associated with this.

- 18% of respondents say there were no costs as the data was already being collected anyway (2 respondents).
- 8% or one respondent says the setup costs are positive but negligible.
- 18% of respondents say that the setup costs were between 20 and 50 thousand euro (2 respondents).
- 8% or one respondent says the setup costs were more than 250 thousand euro.
- 1 respondent says that the costs are unkown (8%).

Regarding the annual running costs on data currently collected and reported[314]:

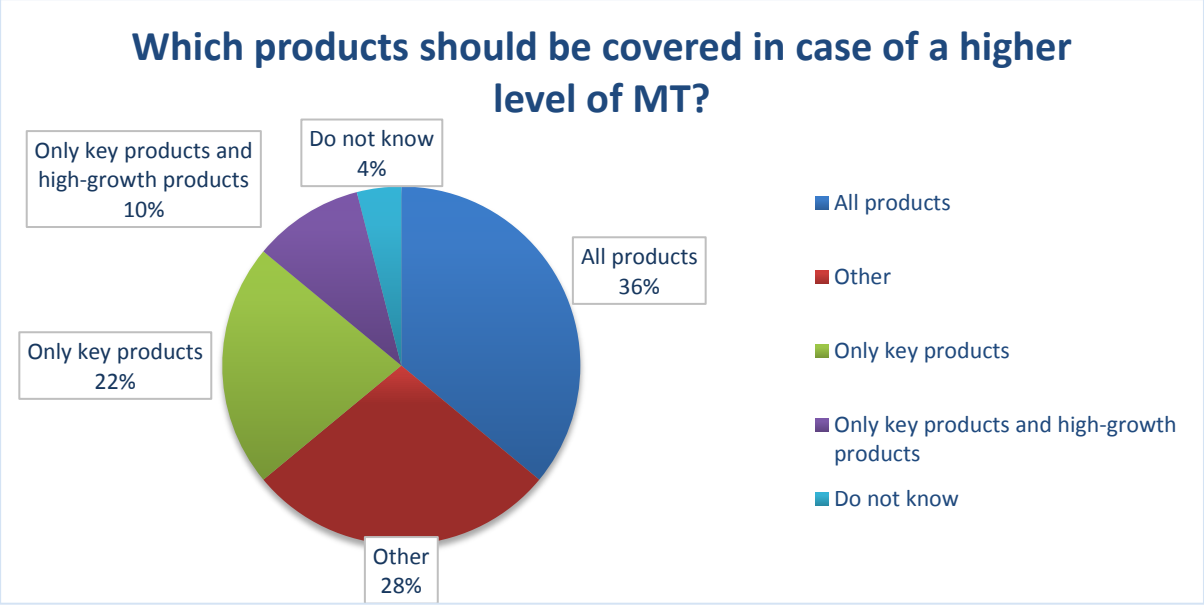
- 18% say that there are no running costs, as the data are already collected for other purposes (2 respondents).
- 8% says the costs are negligible. (One respondent)
- 8% says that costs are between 25 and 50 thousand per year. (One respondent)
- 18% say the running costs are between 50 and 100 thousand euro per year. (2 respondents)
- No respondents say the costs were 100 thousand or more.

11.3 Options for action



71% of respondents who would like to see action to increase market transparency in the FSC would like the EU to act, either on its own initiative or in collaboration with third countries (29 out of 41 respondents). This view is shared by both respondents from the agricultural and food processing stage. 3 (7%) of respondents would like to see MSs act on their own, without action from the EU or the private sector and 1 respondent (2%) would favor action by the private sector exclusively. 17% of respondents would favor a combination of EU institutions, MSs and the private sector. Finally 2% did not know at what level action could be taken most effectively. 14 participants did not answer this question, with 13 being trade, professional or business associations (mainly in the processing (8) and wholesale (3) sectors).

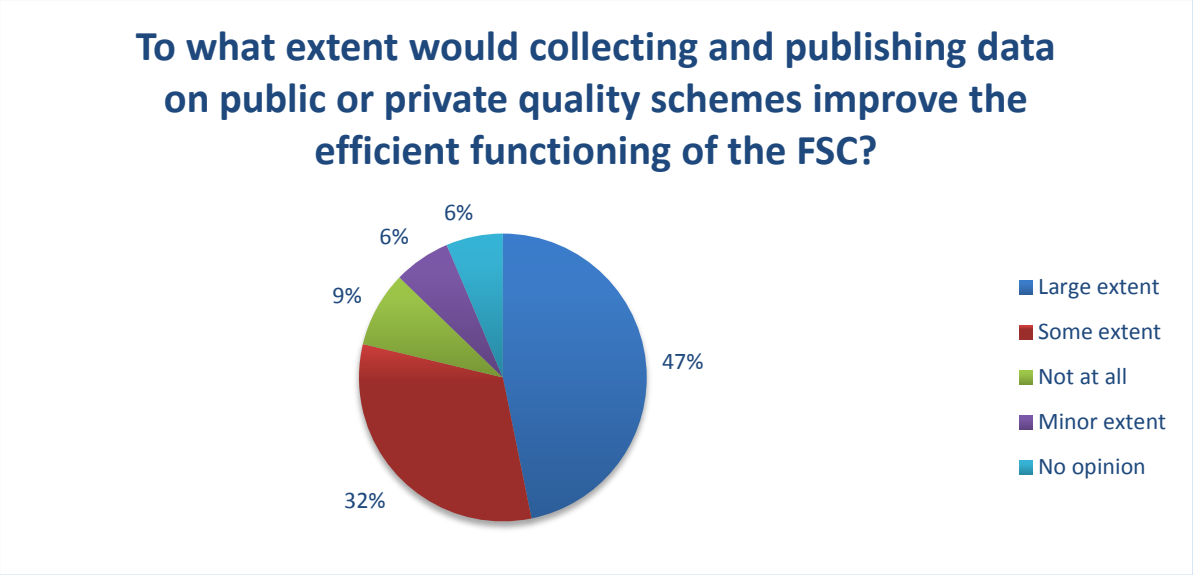
[314] The remaining respondents say they are currently not collecting data used for market transparency purposes, or that they do not know the costs associated with this.



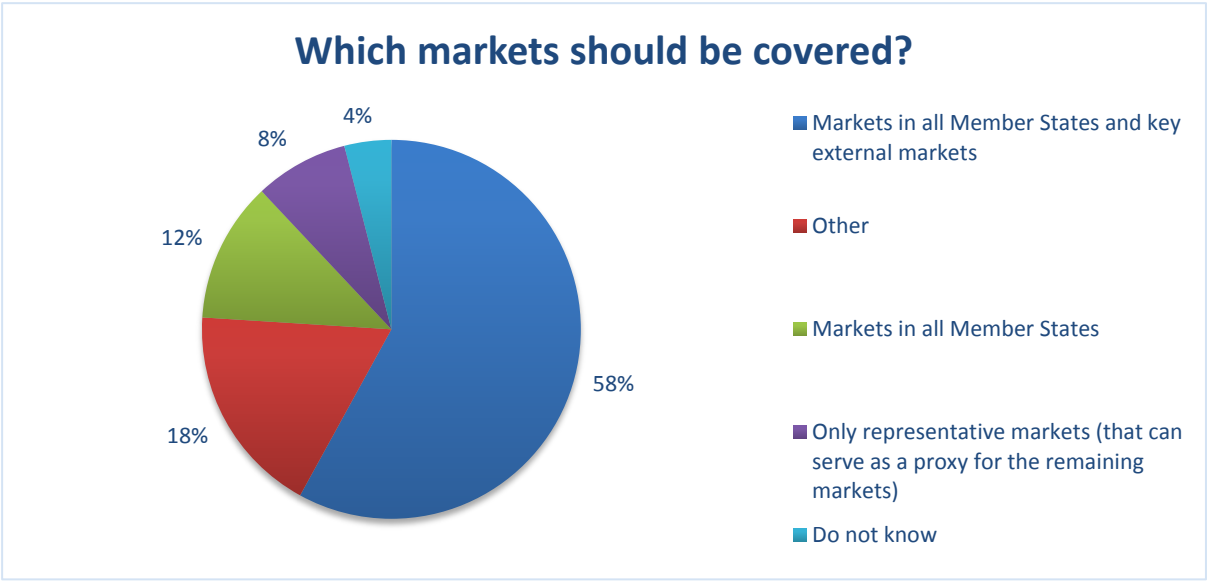
36% of respondents (18 out of 50) state all products should be covered in case action is taken, while 22% of respondents say only the most representative products should be included. Another 10% say the most representative products and high-growth products should be included.28% of respondents state 'other' within the available options with 88% of them being trade associations representing the food processing stage. From additional comments, we note these do not believe information should be gathered for additional products. 4% of respondents say they do not know which additional products should be covered.[315]

When asked for more detail on which products could be added specifically (on top of products for which information is already collected under Implementing Regulation (EU) 2017/1185 and related Regulations), 20 participants answered this question with half of them stating no additional products should be covered (all trade associations mostly representing food processors, at about 80%). The remaining respondents mentioned: organic products, horse meat, rabbits, honey and beehive products, rice, tobacco, mushrooms, cabbages, carrots, onions, red beets, cucumbers, gherkins, cauliflowers, broccoli and fresh milk, or answered on product categories more generally such as meat, dairy, and F&V. One respondent also mentioned the most critical part is to cover all steps in the FSC (also for products for which information is already being gathered) and two respondents state there is a need for prices at retail level to be collected as well.

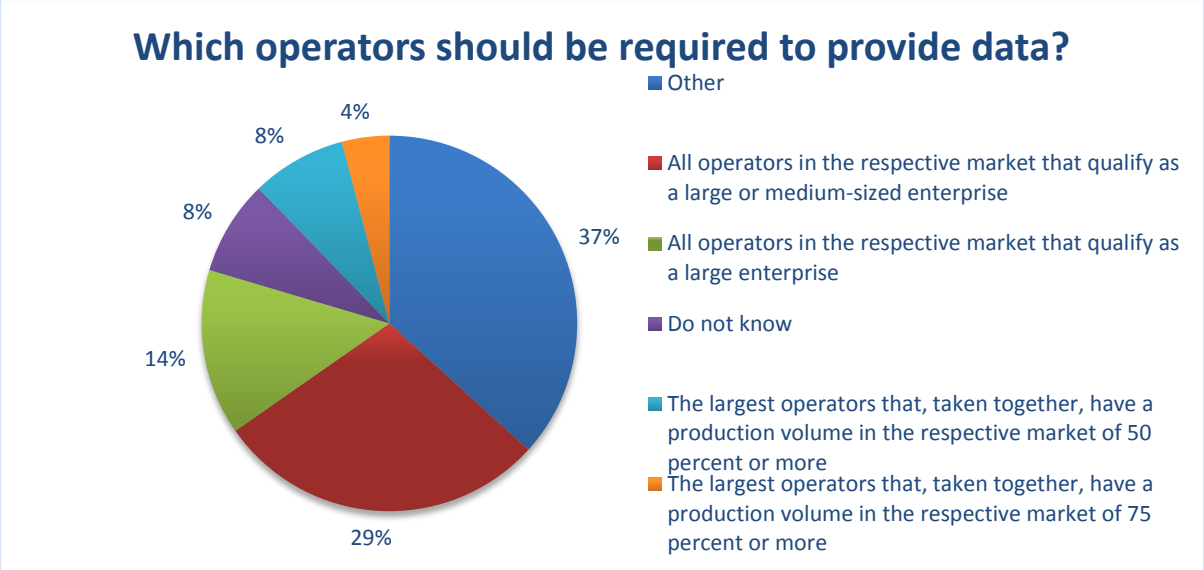
[315] Five participants did not answer this question.



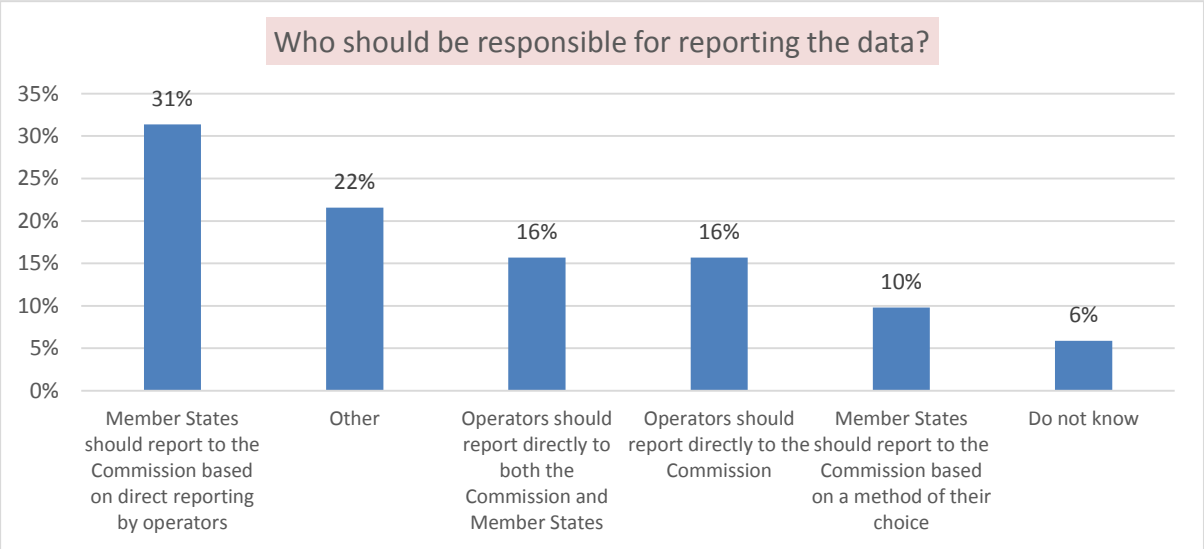
79% of respondents (37 out of 47 that responded) say that the collection and publication of market data on products covered by public or private quality schemes (such as those relating to animal welfare, geographical origin, fair trade, environmental impact, religious requirements, organic production, etc.) might improve the efficient functioning of the FSC to a large or to some extent. Most of these are in the agricultural sector. 4 respondents (9%) say there would be no improvement in the functioning of the FSC. All are trade associations, with 3 representing the processing sector. Finally, 3 respondents (6%) expect only a minor improvement and 3 respondents (also 6%) did not have an opinion.



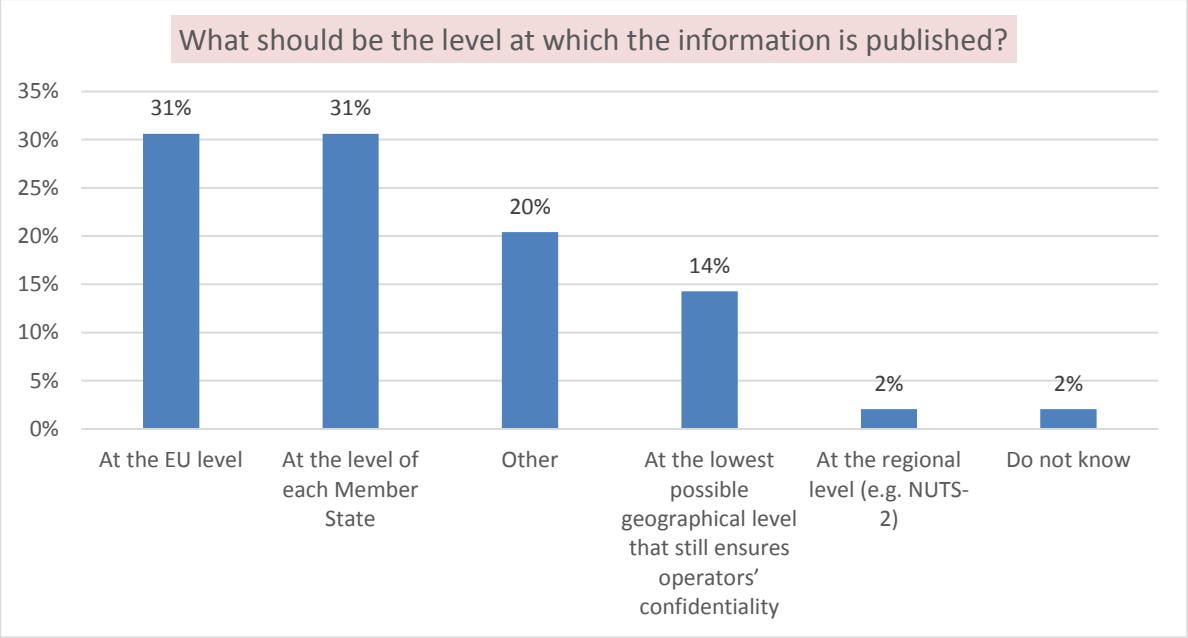
When asked which markets should be included if action is taken to increase the current levels of market transparency, 58% of respondents (29 out of 50) say markets in all MSs and key external markets should be included. 12% say markets in all MSs, and 8% only representative markets. 2 respondents (4%) state they do not know which markets should be covered. A larger share (18%) mentioned 'other'. They all added as a comment that the current level of market transparency is sufficient. These are all trade associations representing the processing sector.



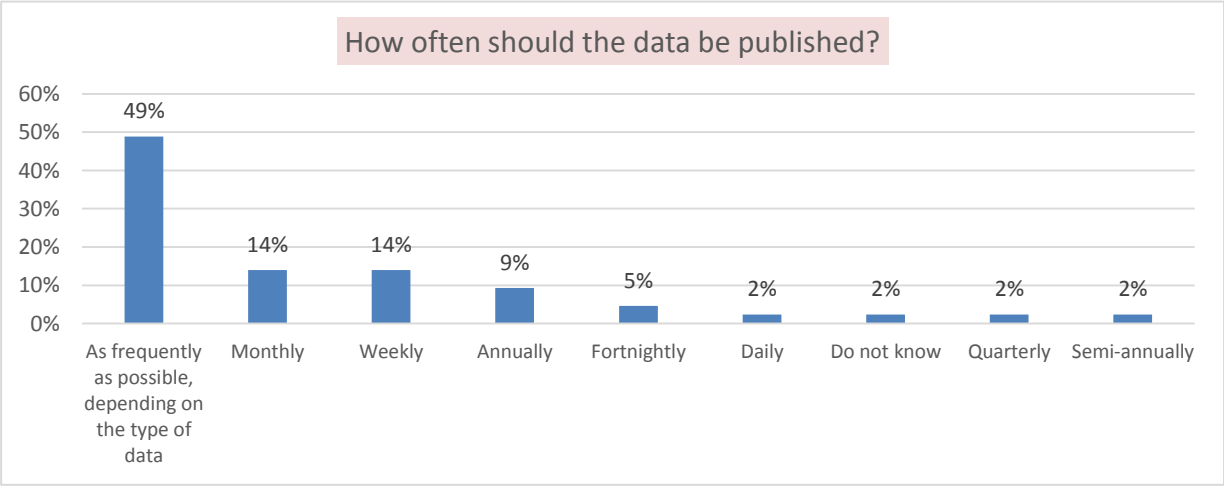
In terms of the type of operator that should report data in order to increase market transparency, 29% of respondents say that large and medium-sized enterprises in the respective market should do so, while 14% state all operators should have to report data. 37% answered 'Other' as possible option (18 responses of which 13 from trade, business or professional organisation representing the processing sector). 12% of respondents believe only the largest operators (of which the production volume represents 50 or 75% in a respective market) should report information. Finally, 4 respondents (8%) did not know which operators should report information.



On data reporting to the Commission, 31% of respondents say that MSs should report to the Commission based on direct reporting by operators, 16% say that operators should report directly both to the Commission and MSs, and 16% say that operators should report directly to the Commission.10% of respondents believe the MS should report to the Commission based on a method of their choice and 6% did not know who should be responsible for reporting the data. A final share of 22% (11 respondents) state 'Other' while commenting no additional market transparency is required (9 respondents), EU sectoral trade associations should report the information (1) and finally an independent organisation should report the information (1).



On publishing the data, 31% of respondents thought that the data should be published at the level of each MS. Of these 53% are trade, business or professional organisations (equally distributed between agriculture, food processing, trade and wholesale, and retail), and 40% are private enterprises. Another 31% of respondents thought that data should be published at a more aggregated level, namely at EU level. These are primarily trade, business or professional organisations (40%, mainly in food processing), NGOs (20%), private enterprises (20%). 7 respondents (14%) state the information should be published at the lowest geographical level while 1 respondent (2%) states information should be published at the regional level. One respondent did not know. 10 respondents or 20% mentioned 'other', stating no additional market transparency is needed. All are trade associations representing the processing sector.



On the frequency of publication, 49% say data should be published as frequently as possible (the specific frequency depending on the type of data). Of these 52% are from the agricultural sector and 29% from the food processing sector. 14% say weekly, 14% say monthly, 5% say fortnightly and 1% say daily.

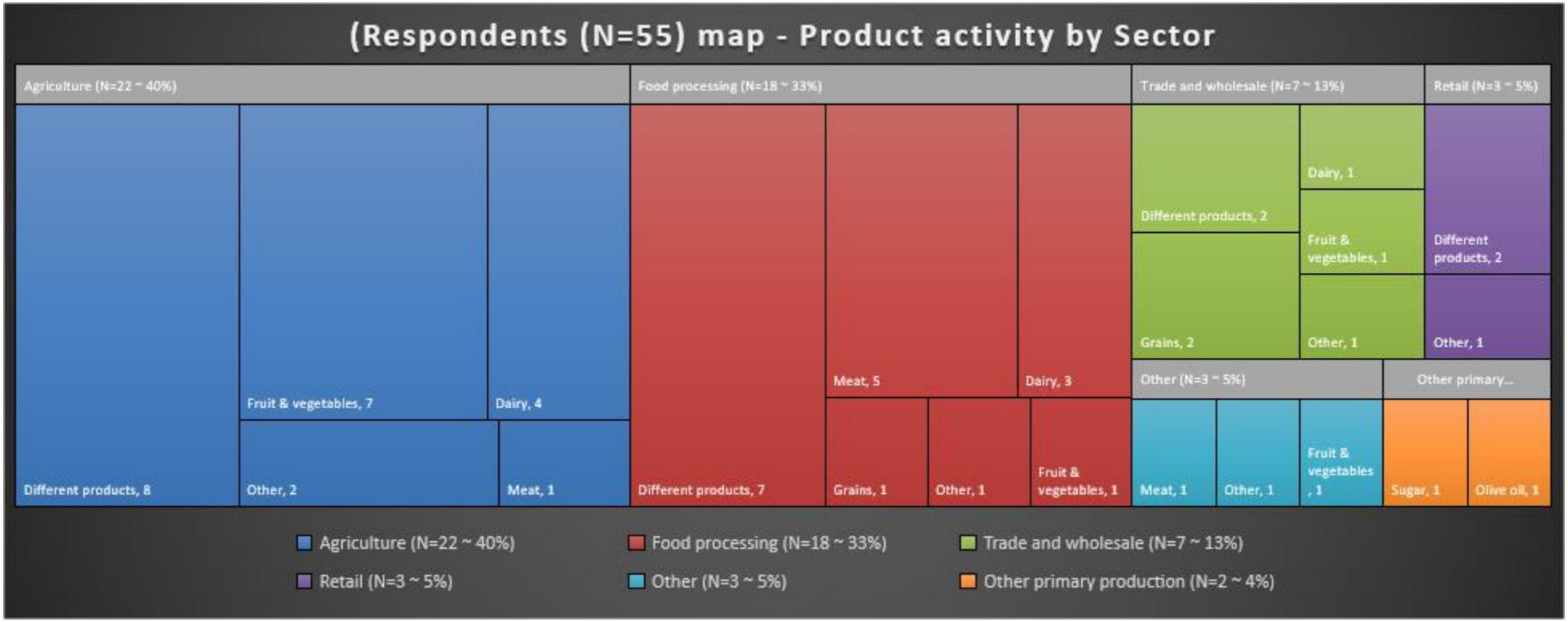


Figure 10 - Product Focus by sector

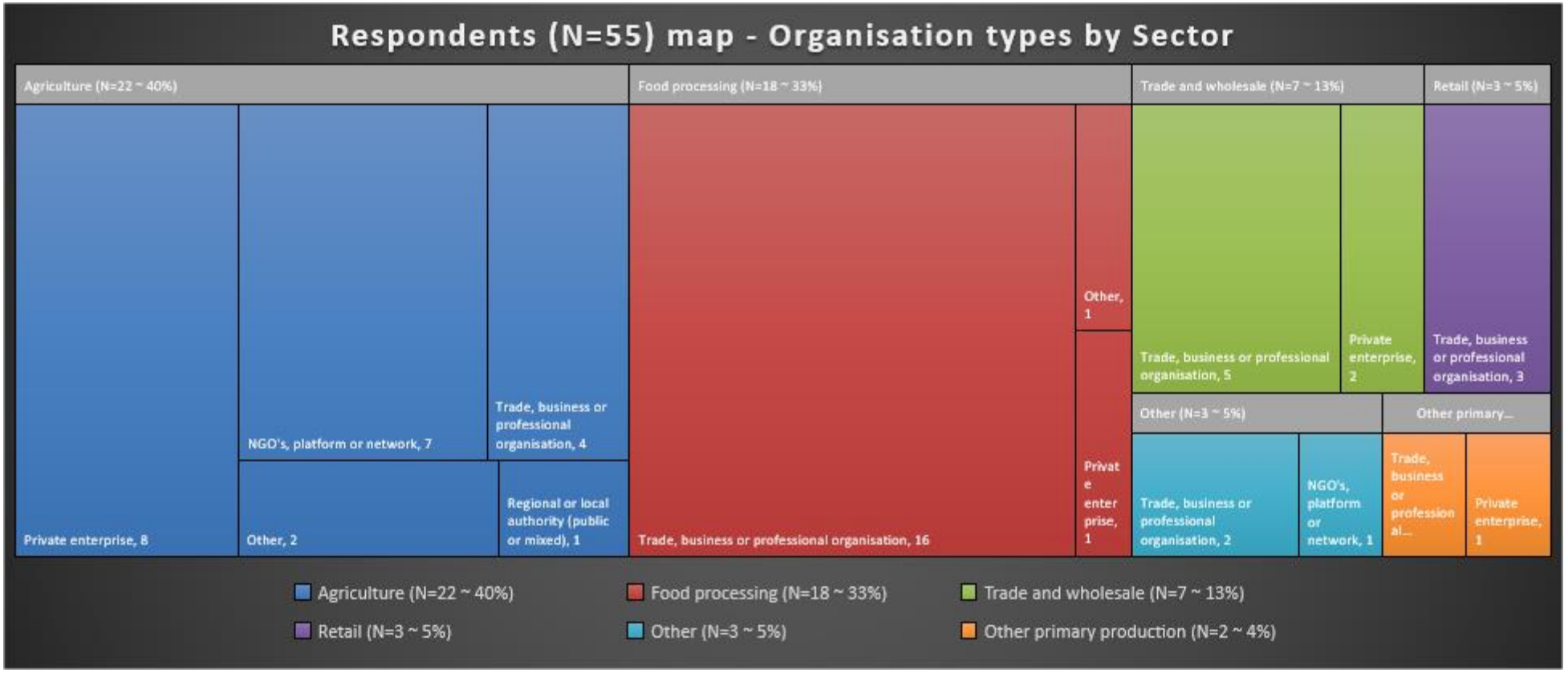


Figure 11 - Organisation type by sector

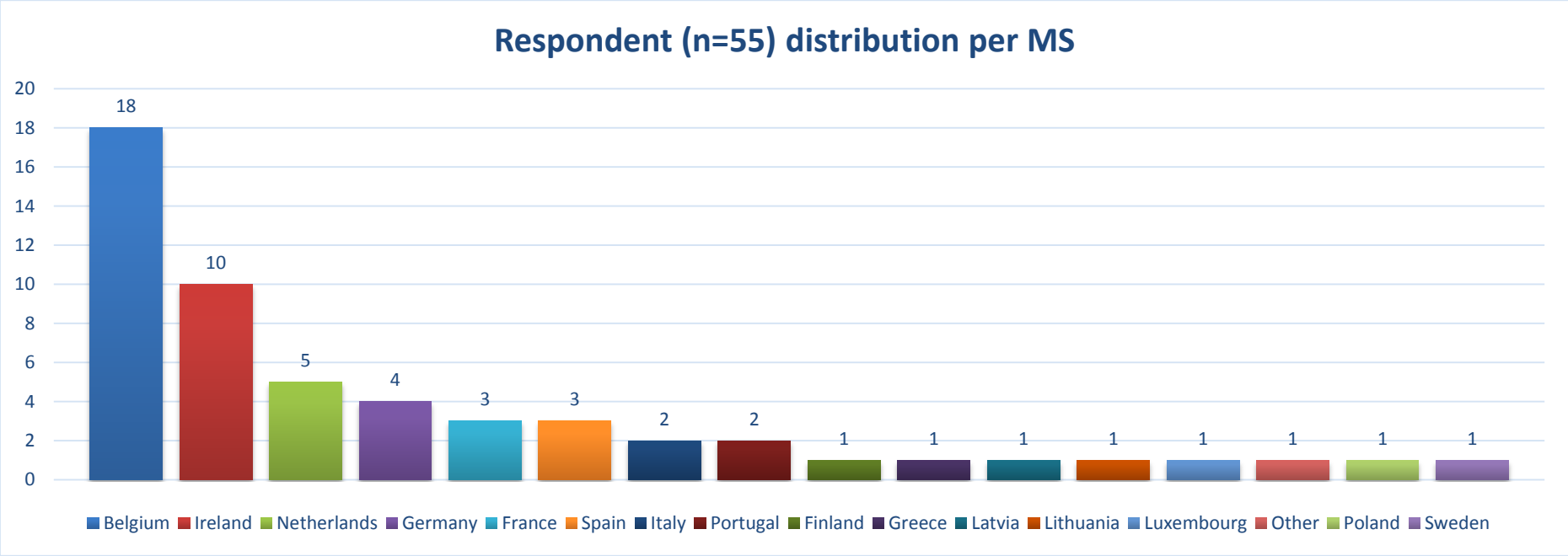


Figure 12 - Number of respondents per MS

12 Annex V - Results from the specific questionnaire to consumers

12.1 Key results

- There were 3 responses to the consumer questionnaire, all from national consumer organisations (Spain, Greece, and Slovenia).
- All respondents believe that market transparency is necessary for competition to a large extent.
- All respondents consider the current level of market transparency in the FSC to be an issue for consumers.
- All respondents consider that if the current level of market transparency is inadequate, this should be addressed.

Consumer organisations point out a lack of trust among consumers towards food industry and administration. The current level of market transparency prevents them from making informed choices.

They consider that a higher level of market transparency would mainly benefit consumers and producers. There is low knowledge of who it could potentially harm. As key benefits, consumer organisations state increased consumer awareness of the economic situation of agri-food operators as well as an increase in the effectiveness of public policies. All respondents consider that there would be no significant risk in providing a higher level of market transparency.

According to the respondents, action could be taken most effectively by the European Union and key third countries. It is further suggested to cover all operators in the respective market that qualify as a large or medium-sized enterprise. Operators should report directly both to the Commission and to MSs. As for the level and the frequency of the publication, consumer organisations consider most adequate to publish at an EU level but the views on the frequency are diverging (from as frequently as possible, to monthly and quarterly).

While all consumer organisations suggest covering markets in all MSs and key external markets, their views on products to be covered are diverging.

Moreover, all respondents agree to a large extent, that collecting and publishing market data on products covered by public or private quality schemes might improve the efficient functioning of the FSC.

12.2 Detailed results from the questionnaire

The questionnaire to consumer organisations was open between 24/08/2018 and 21/10/2018. Consumer organisations from 3 MSs (Spain, Greece, and Slovenia) replied to the specific questionnaire during that period.

12.2.1 Baseline

All respondents consider the **current level of market transparency** in the FSC to be **an issue for consumers**.

Impact on consumer organisations:

On the question of how the current level of market transparency affects consumer organisations, respondents mainly state that the **lack transparency prevents them from empowering consumers to make informed choices** (Spain and Slovenia) and from satisfying consumer complaints about high prices (Greece).

Impact on consumers:

As examples of how lack of market transparency in the FSC affects consumers, respondents state **a lack of trust of consumers towards food industry and administration** due to missing information about prices in

relation to the origin of food (Spain) and due to food price increases without obvious justification or cheaper price offers for imported food products than locally produced ones without a clear reason for this (Greece). Slovenia considers that a lack of transparency affects consumer choices.

Use of existing price and market information:

Questioned about the use of existing price and market information, one respondent states using information from national authorities (Slovenia). While one respondent (Spain) is aware but does not use DG AGRI data sources; the two others (Greece and Slovenia) were not aware of their existence.

12.2.2 Need to act

All respondents agree that **if the current level of market transparency** in the FSC **is deemed inadequate, this should be addressed**. They further all believe that **market transparency is necessary for competition to a large extent**.

Consumer organisations would make use of additional market transparency data **to better understand price increases along the food chain** aiming at helping consumers to make the best choice in a fair market (Spain). They would actively recommend consumers to consult such data (Greece) and point out the results of the initiative of the 'food euro' (Slovenia).

12.2.3 Potential benefits and risks of a higher level of market transparency

Economic actors to potentially benefit:

All respondents primarily highlight the **benefit for** consumers, followed by producers (Spain and Greece) as well as producer organisations (Slovenia), manufacturers (Slovenia), public authorities (Greece), and retailers (Spain).

Economic actors to potentially be penalised:

While two respondents (Spain and Greece) do not have any opinion on who a higher level of market transparency would potentially harm, the Slovenian consumer organisation mainly stated importers and retailers.

Potential benefits:

When it comes to the benefits of a higher level of market transparency along the FSC, respondents consider that it would have the potential to

- Increase consumer awareness of the economic situation of agri-food operators (Spain, Greece and Slovenia)
- **Increase the effectiveness of public policies** (e.g. improve market development, increase competition, avoid unintended consequences) (Spain and Slovenia)
- Improve how price changes (due to changes in supply or demand) are passed on between operators (speed of price transmission, symmetry of price transmission, correct transmission of market signals) (Spain)
- Increase competition (Greece)
- Contribute to research and the generation of knowledge on the FSC (Greece)
- Improve the sustainability of the FSC and reduce food waste (Slovenia)

Potential risks:

All respondents consider that there would be **no significant risk in providing a higher level of market transparency**.

12.2.4 Level of action

If additional measures were taken to increase market transparency, two consumer organisations out of three consider that **they could be taken most effectively by the EU and key third countries** (Spain and Greece). Slovenia believes that a combination of the EU, key third countries, MSs and the private sector (voluntary initiatives) would work best.

12.2.5 Which operators to provide data to the Commission?

Questioned on the type of operators that should be required to provide data[327] in case action is taken to increase current levels of market transparency, Spain and Greece suggest to **cover all operators in the respective market that qualify as a large or medium-sized enterprise**, Slovenia has no opinion.

12.2.6 Who to report data?

Two respondents (Spain and Greece) consider that **operators should report directly both to the Commission and to MSs**, the third respondent (Slovenia) has no opinion.

12.2.7 Level and frequency of publication

Questioned on the level at which information should be published[327], **2 respondents** (Greece and Slovenia) **consider most adequate to publish at EU level, another respondent at the level of each MS** (Spain).

When it comes to the **frequency of publication, views are diverging**, one respondent would publish as frequently as possible (depending on the type of data), another one monthly (Greece) and the last one quarterly (Slovenia).

12.2.8 Markets to cover

All respondents agree that in case action is taken to increase current levels of market transparency, **markets in all MSs and key external markets** should be covered.

Products to cover

In case action were to be taken to increase current levels of market transparency, both within each sector of the FSC and between the different sectors of the FSC, **respondents have diverging views**. While Spain would opt for **all products**, Greece would limit it to **key products only** and Slovenia has no opinion.

Quality schemes:

All respondents agree (to a large extent) that c**ollecting and publishing market data on products covered by public or private quality schemes** (such as those relating to animal welfare, geographical origin, fair trade, environmental impact, religious requirements, organic production, etc.) **might improve the efficient functioning of the FSC.**

13 Annex VI – Workshops

During the evidence-gathering stages of the work on market transparency, the Commission organised two workshops that provided useful information for this analytical report. The following links provide further information on the each of these workshops:

- **Joint JRC / AGRI Experts Workshop (30-31 May 2018)**

  This workshop gathered experts from academia, from national and international public organisations, and from stakeholder organisations to discuss the multiple aspects of market transparency in the food supply chain, from a technical perspective.

  - Workshop webpage (including presentation slides): https://ec.europa.eu/info/events/market-transparency-2018-may-30_en
  - Presentations (webstream):

    Day 1: https://webcast.ec.europa.eu/workshop-on-market-transparency-30th-of-may-2018

    Day 2: https://webcast.ec.europa.eu/workshop-on-market-transparency-31st-of-may-2018
  - Workshop report (by Professor Claude Ménard, Paris I: Panthéon-Sorbonne) http://publications.jrc.ec.europa.eu/repository/bitstream/JRC113150/utp_market_transparency.pdf

- **Joint Expert Group for Horizontal Questions Concerning the CAP and Civil Dialogue Group CAP Workshop (11 September 2018)**

  During the workshop, delegates discussed the strengths and weaknesses of the current system of market transparency and considered which improvements were needed along the sectoral food chains.

  - Workshop webpage (including presentation slides): https://ec.europa.eu/info/events/market-transparency-food-supply-chain-2018-sep-11_en
  - Agenda, documents, and minutes (11/09/2018) https://ec.europa.eu/agriculture/civil-dialogue-groups/cap_en

14 Annex VII - Costs to operators in the agri-food supply chain of data reporting related to market transparency

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Content

[316] The authors are solely responsible for the content of the paper. The views expressed are purely those of the authors and may not in any circumstances be regarded as stating an official position of the European Commission.

1 Introduction

This report presents results on the cost estimates of operators in EU agri-food supply chains for providing information to a third party in order to contribute to improved market transparency in the food chain.

The data used in this report were collected through:

1. An online EU Survey "Questionnaire to operators in the agri-food supply chain on data reporting related to market transparency"
2. Structured interviews with representatives of the food chain operators or associations and other organisations that represent their interests or provide services to them.

The online survey was launched on 23 October 2018. It was designed using the EU survey tool. The questionnaire was available in all EU Languages. The survey targeted operators active in the agri-food supply chain (i.e. companies or businesses in the primary production, distribution, processing, wholesale or retail stages) as well as related organisations that represent or serve these operators (e.g. farmers' associations, trade associations, associations of food processing firms, retail associations,). The operators were contacted through e-mail and through social media (e.g. twitter, LinkedIn, Facebook). Contact information was obtained through an intensive search on the internet and through contact information available from DG AGRI. In total around 650 operators or associations representing their interests were contacted. The results presented in this report cover responses obtained between 23 October and 1 February 2019. In total, 113 responses were obtained within this period which implies an approximate 17% response rate.[317] Out of them 68 responses are from companies or operators along the food chain and 45 are from different type of associations or organisations.

The online questionnaire was split in six sections collecting information (i) about profile of respondents, (ii) the existing reporting practices and systems of respondents, (iii) potential benefits and risks of increased market transparency along the agri-food supply chain, (iv) costs estimates of data reporting, (v) final assessment about market transparency and (vi) additional information about respondents.

The structured interviews were conducted between 23 October and 5 February 2019. The aim of the structured interviews was to obtain more in depth information in order to complement data obtained through the online survey. The online questionnaire included a question on the availability of respondents to participate in a follow-up structured interview and 80% of the conducted interviews came through this source. The structured interviews consisted of 10 questions and the interview was structured into several sections: an introductory section, a section dedicated to the interviewee and the business or organisation that he/she represents, a section on market transparency and perceived benefits and risks and a final section related to the current data gathering and reporting practices and the estimated costs of reporting to a third party. In total, 21 interviews were conducted, among them 11 were conducted with companies operating in the food chain and 10 with associations representing the interests or serving these companies. Nineteen structured interviews were conducted by telephone and 2 were received in written form.[318]

[317] This is only an approximate response rate and likely overestimated because it cannot be estimated how many respondents received the message about the survey through social media (e.g. twitter, LinkedIn, Facebook). Further, when associations, bioeconomy clusters and the agricultural ministries of Member States were contacted, they were requested to forward the survey to agri-food operators (e.g. to members in the case of associations and bioeconomy clusters); the information about the number of operators contacted by association, bioeconomy clusters or the ministries is not available.

[318] Two respondents preferred written form because providing responses to the questions required to gather information from different departments.

The data for both the online survey and the structured interviews are based on convenience samples and are not representative of the underlying population.

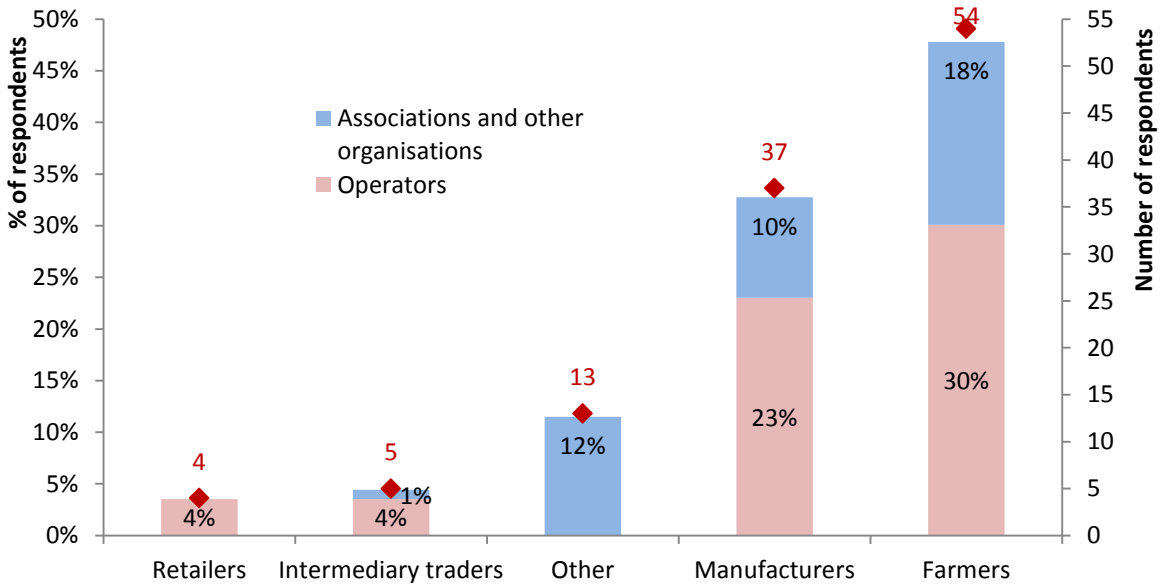
2 Profile of respondents

2.1 Online Survey

Figure 1 provides the distribution of respondents by country where their head office is located. Most represented countries are Latvia and Slovakia, Belgium accounting for 13%, 12% and 10% of all respondents, respectively. The least represented are Croatia, Czech Republic, Cyprus, Ireland, Lithuania and the Netherlands each including only one respondent. This implies that the sample is not representative across different Member State (MS) given that some smaller MS (in terms of the size of agri-food sector) are overrepresented, while some bigger ones are underrepresented. Farmers represent the largest respondent group accounting for 30% of all respondents followed by manufacturers (23%). The least represented are retailers (3.3% of all respondents) and intermediary traders (4.4%). An important share of respondents (40% of all respondents) include associations and other organisations (Figure 2).

Figure 13. Respondents by Member State (% of all respondents; Number of all respondents)

Figure 14. Respondents by food chain stage (% of all respondents)



The respondents are relatively well spread across different agri-food sectors. Most represented sectors are fruit & vegetables (17% of all respondents), various primary agricultural products (16%), grains (13%) and various processed food products (13%) (Figure 3). Similar is valid for the distribution of operators by size (i.e. number of employees). Besides associations and other organisations, which account for 40% of all respondent, all relevant size groups of operators participated in the survey. Self-employed or operator with less than 10 employees (micro operators) are the largest group accounting for 20% of all respondents followed by large operators with more than 250 employees (18%), medium sized operators with the number of employees between 50 and 250 persons (12%) and small operators with the number of employees between 10 and 49 persons (11%) (Figure 4).

Figure 15. Respondents by sector (% of all respondents)

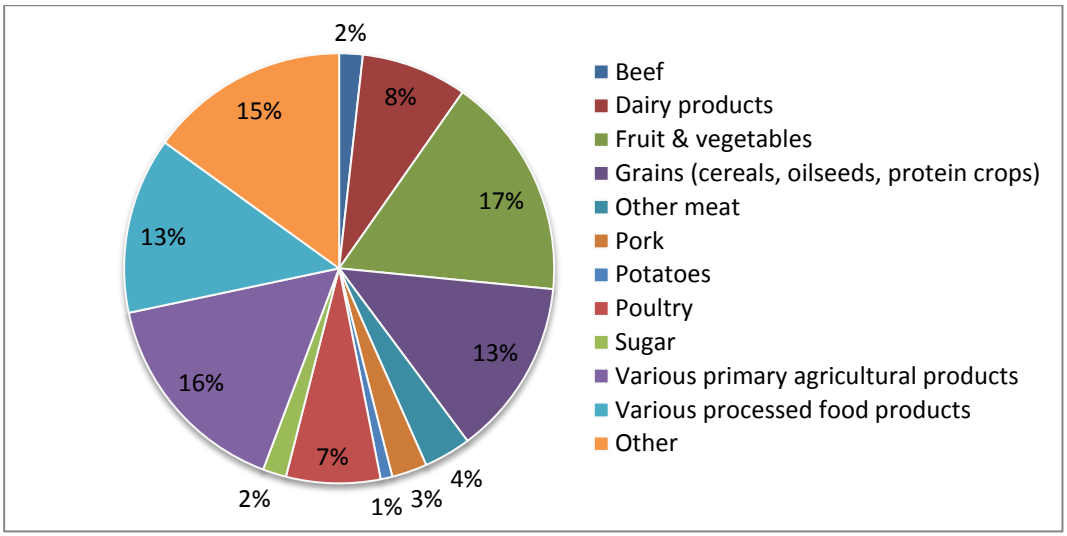
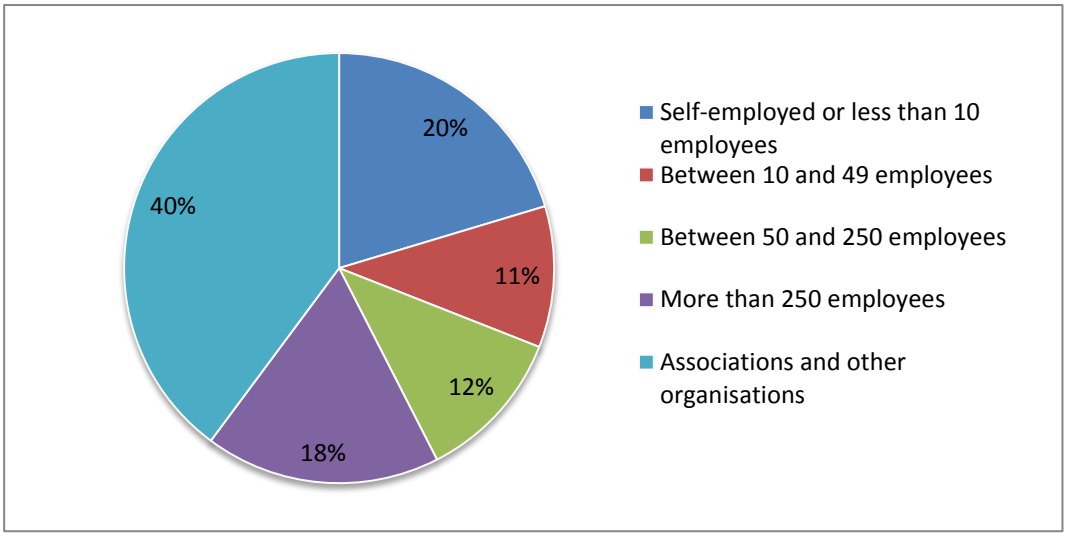


Figure 16. Respondents by number of employees (% of all respondents)

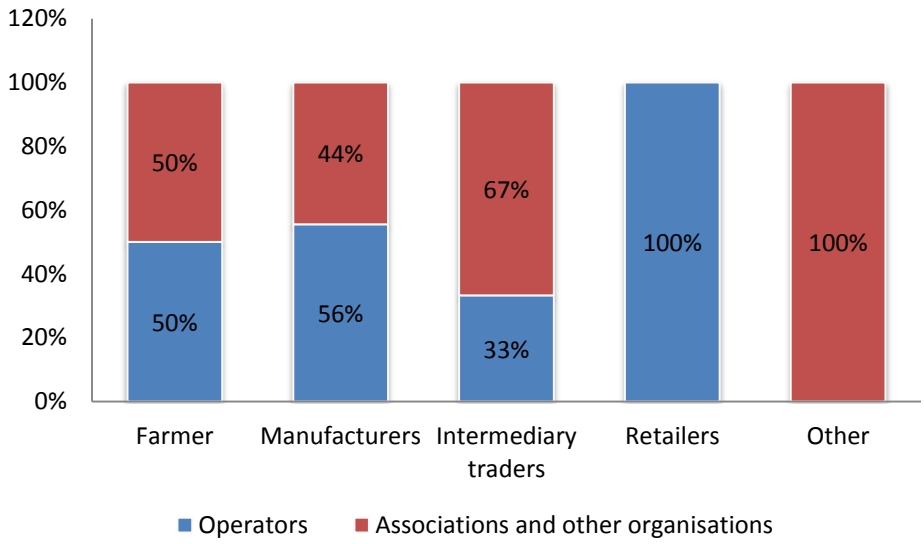


2.1 Structured interviews

The results presented in this report cover the information obtained from 21 interviews covering several product sectors – specifically, Fruit and vegetables (6), Meat (3), Dairy (4), Sugar (2), Grains (2) and Various food (4) - and various type of companies and organisations at different food chain stages – specifically, Farmer (6), Manufacturers (9), Intermediary traders (3), Retailers (2) and Other (1). Some of the interviewees were active at multiple stages of the food chain (e.g. crop growers and processors; processors and distributors; and wholesalers and retailers). In terms of geographic coverage the interviewees came from 10 different countries (Austria, Belgium, Finland, Germany, Greece, Latvia, Lithuania, Romania, Spain and Sweden).

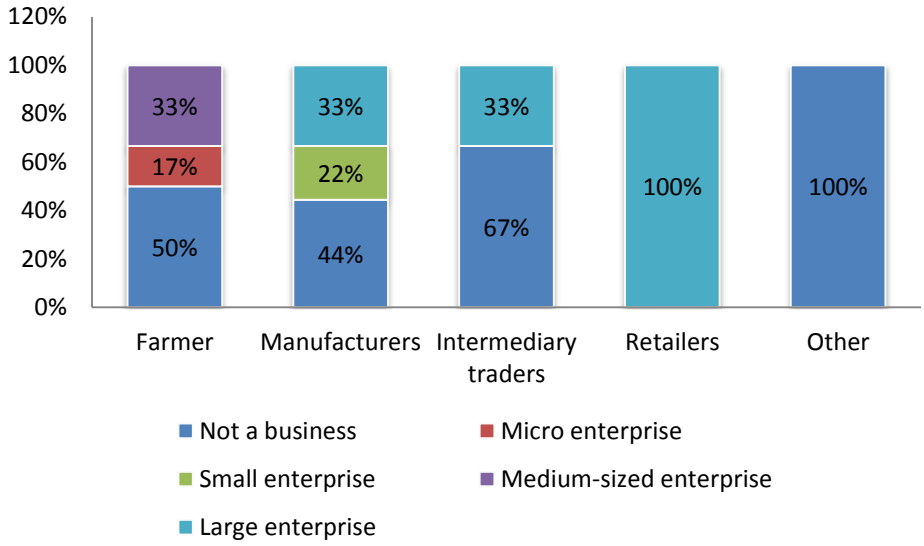
Of the 21 interviewees, 11 are operators defined as companies or businesses operating along the food chain. The other 10 are associations or organisations that represent the interest of the food chain operators they represent or provide services to them. Although a significant number of operators responded to the online EU Survey (68 - 60% - out of 113 of respondents are operators), only 23 (34%) manifested their availability for an interview. Of 45 associations that responded to the online EU Survey, 25 (56%) offered their availability for a follow up interview. Associations are not directly gathering and reporting data to a third party, but providing estimates based on their knowledge of the sector. The share of interviewees that represent either a food chain operator or an association at each food chain stage is shown in Figure 5.

Figure 17 Share of interviewed companies or associations at each stage of the food chain



Because the size of the operator may have an impact in the costs estimates of third party reporting, the distribution of interviewed operator by size at each stage of the food chain is provided in Figure 6.

Figure 18 Share of interviewed companies or associations at each stage of the food chain by firm size



3 Potential benefits and risks of increased market transparency

3.1 Online Survey

Respondents were asked to express their view on the potential benefits and risks of increased market transparency along the agri-food supply chain for their business organisation. Respondents were asked for the potential benefits and risks specifically for the increased price transparency as well as about additional information (e.g. production volumes, stocks, margins) contributing to the increased market transparency. To compare the overall effect, respondents also evaluated how benefits of increased market transparency along the agri-food supply chain compare to the reporting costs and risks from market transparency for their business or organisation. Market transparency was defined in the questionnaire as the dissemination of

information, disaggregated by product type but aggregated across all operators, made available to all operators free of charge, where confidentiality and data protection are ensured.[319]

The majority (78%) of respondents expressed that they would benefit at least to a minor extent from the increased price transparency along the agri-food supply chain, whereas around a quarter (26%) of respondents would benefit to a large extent. This result is valid across all food chain stages although a greater share of farmers and farmers' associations expressed that they would benefit to a large extent from the increased price transparency as compared to other stages of the chain (i.e. manufacturers, traders & distributors, retailers). A greater share of respondents from other stages of the chain than farmers and farmers' associations also expressed that they would not benefit from the increased price transparency. However, overall the share of respondents that would not benefit from the increased price transparency is relatively low (14% of all respondents) (Figure 7).

The most common main benefits[320] from the increased price transparency reported by respondents include reduction in uncertainty, levelling the playing field for all operators in the agri-food supply chain, improvement of knowledge on how price changes are passed on between operators, and the increase in opportunities for risk management. Between 25% and 31% of all respondents listed these individually as main benefits from the increased price transparency. Other main benefits selected by a significant share of respondents include the improvement in investment decisions in the long term (15% of all respondents), the increase in consumer awareness of the economic situation of food operators (13%), the improvement of trust between operators in the agri-food supply chain (12%), improvement in production decisions in the short term (12%), help to identify opportunities within their country (12%), the improvement in cooperation with other operators in the agri-food supply chain (12%), and the increase in the effectiveness of public policies (10%) (Figure 8). Other benefits from the increased price transparency listed in Figure 8 were reported individually as a main benefit by less than 10% of respondents.

Compared to the benefits, fewer respondents expressed that they would face risks from the increased price transparency along the agri-food supply chain. Around 60% of all respondents expressed that they would face risks at least to a minor extent from the increased price transparency along the agri-food supply chain, whereas only 10% of respondents would face risks to a large extent (Figure 9). Manufacturers, traders & distributors and retailers appear to be more concerned about the risks from the increased price transparency as compared to farmers: a greater share of them expressed that they would face risks to some extent and to a large extent from the increased price transparency as compared to farmers and farmers' associations, Around 23% of all responds reported that they would not face risks from the increased price transparency mostly coming from farmers' associations and farmers.

[319] This definition of market transparency is in line with the AMTF (Agricultural Markets Task Force) definition: " Market transparency can be defined as the availability of relevant market information to market participants." (https://ec.europa.eu/agriculture/sites/agriculture/files/agri-markets-task-force/2016-03-08/paper.pdf)

[320] Respondents could select in the questionnaire between up to 3 main benefits of the increased price transparency.

Figure 19. Potential benefits from increased price transparency along the agri-food supply chain (% of all respondents; number of respondents)

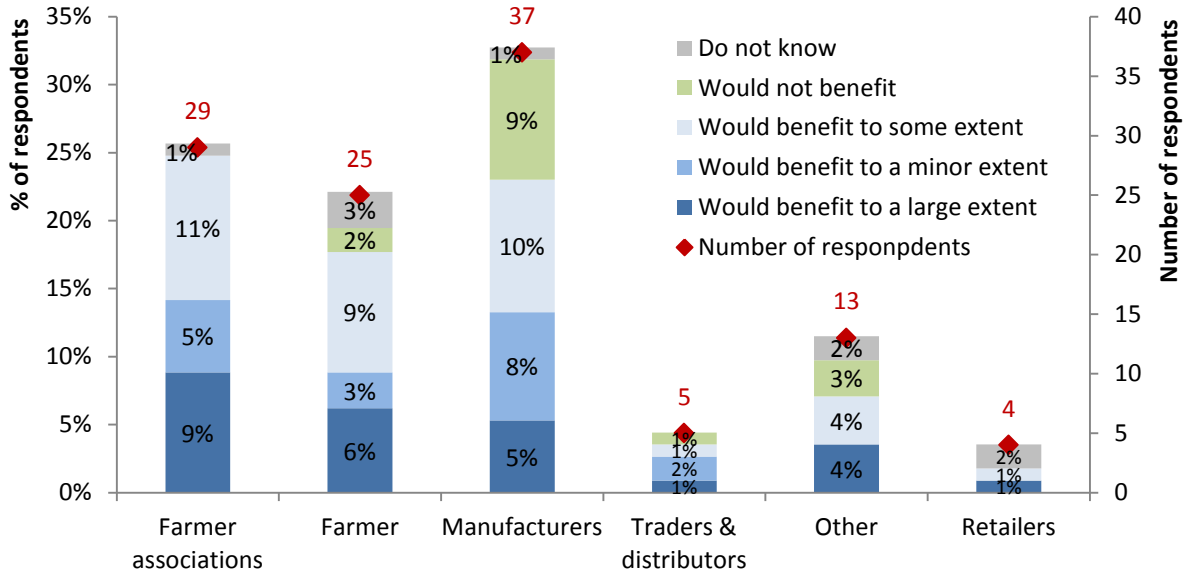
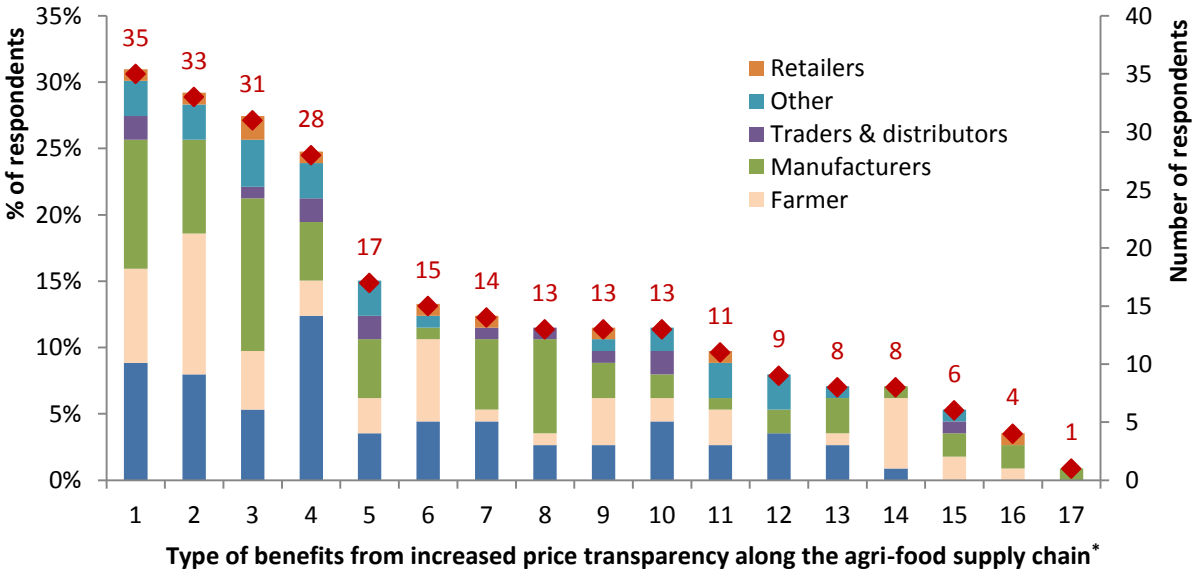


Figure 20. Type of potential benefits from increased price transparency along the agri-food supply chain (% of all respondents; number of respondents)



Notes: * 1: Reduce uncertainty, 2: Level the playing field for all operators in the agri-food supply chain, 3: Improve knowledge on how price changes are passed on between operators, 4: Increase opportunities for risk management, 5: Improve investment decisions in the long term, 6: Increase consumer awareness of the economic situation of food operators, 7: Improves trust between operators in the agri-food supply chain, 8: Improve production decisions in the short term, 9: Help to identify opportunities within their country, 10: Improves cooperation with other operators in the agri-food supply chain, 11: Increase the effectiveness of public policies, 12: Improve the sustainability of the agri-food supply chain and reduce food waste, 13: Help to identify opportunities across Member States' borders, 14: Increase of selling prices, 15: Do not know, 16: Decrease of input prices, 17: Other.

The most common main risks[321] from the increased price transparency reported by respondents include lack of confidentiality, higher competitive pressure and decrease of selling prices accounting for 45%, 40% and 34% of all respondents, respectively. The increase of input prices and other risks were suggested to be the main risks by 18% and 5% of respondents (Figure 10).

Figure 21. Potential risks from increased price transparency along the agri-food supply chain (% of all respondents; number of respondents)

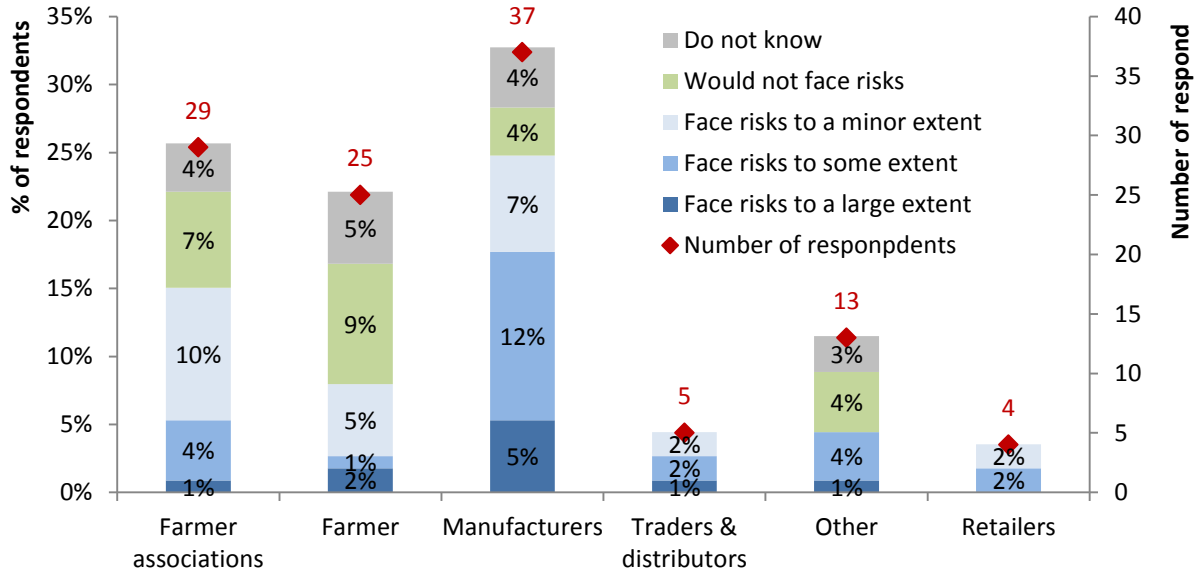
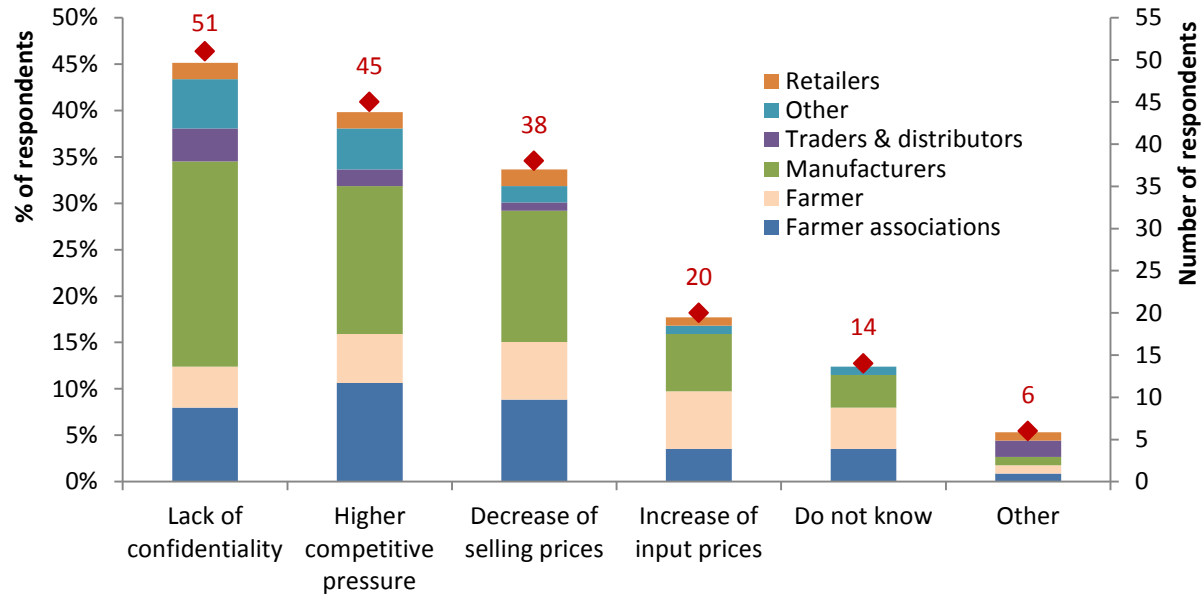


Figure 22. Type of potential risks from increased price transparency along the agri-food supply chain (% of all respondents; number of respondents)



Apart from the price transparency, respondents provided their view on benefits and risks of other information contributing to the increased market transparency along the agri-food supply chain. In terms of benefits, production volumes, consumption, trade volume and transport costs are perceived by more than

[321] Respondents could select in the questionnaire between up to 3 main risks of the increased price transparency.

40% of respondents to generate benefits to their business or organization if the transparency of these indicators is increased. In turn, gross and net margins and sustainability indicators are reported by the least number of respondents (less than 35% of all respondents) to benefit from increased market transparency of these indicators (Figure 11).

Gross and net margins are most often reported factors of generating risk from increased market transparency among respondents (by more than 40% of all respondents) for other type of information than price. This is followed by trade value (36% of all respondents), trade volume (34%) and production volumes (32%). The least reported risk factors include consumption (19% of all respondents) and sustainability indicators (15%) (Figure 12).

Figure 23. Potential additional information generating benefits from the increased market along the agri-food supply chain (% of all respondents)

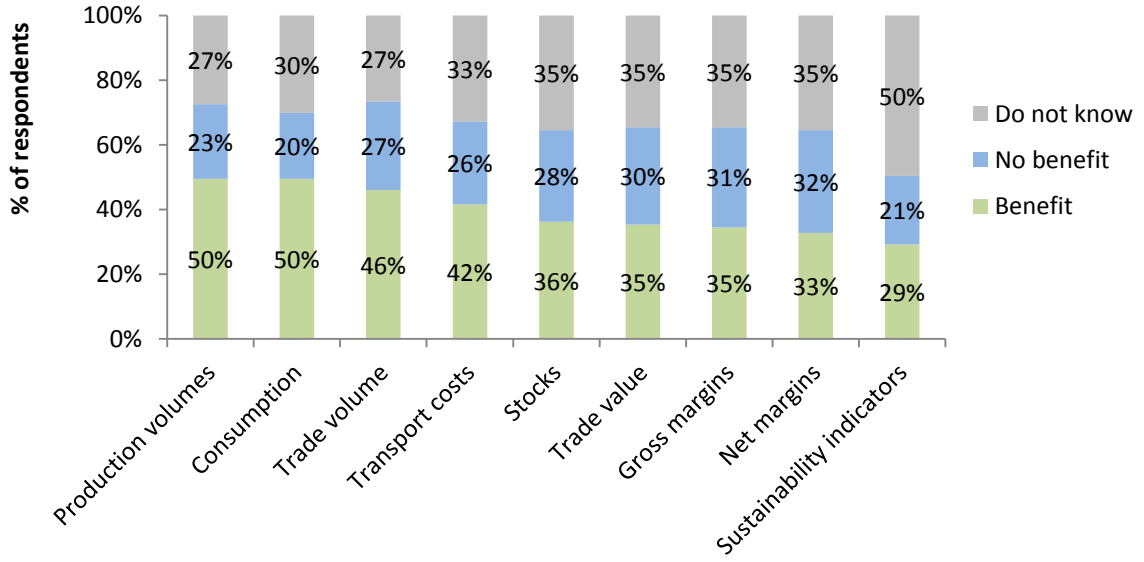


Figure 24. Potential additional information generating risks from the increased market along the agri-food supply chain (% of all respondents)

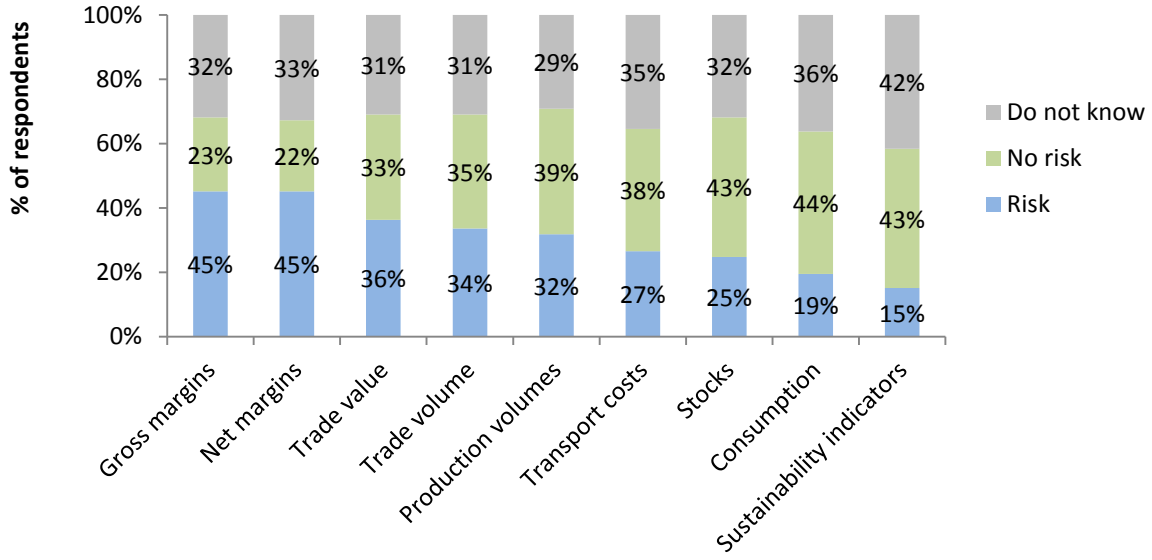
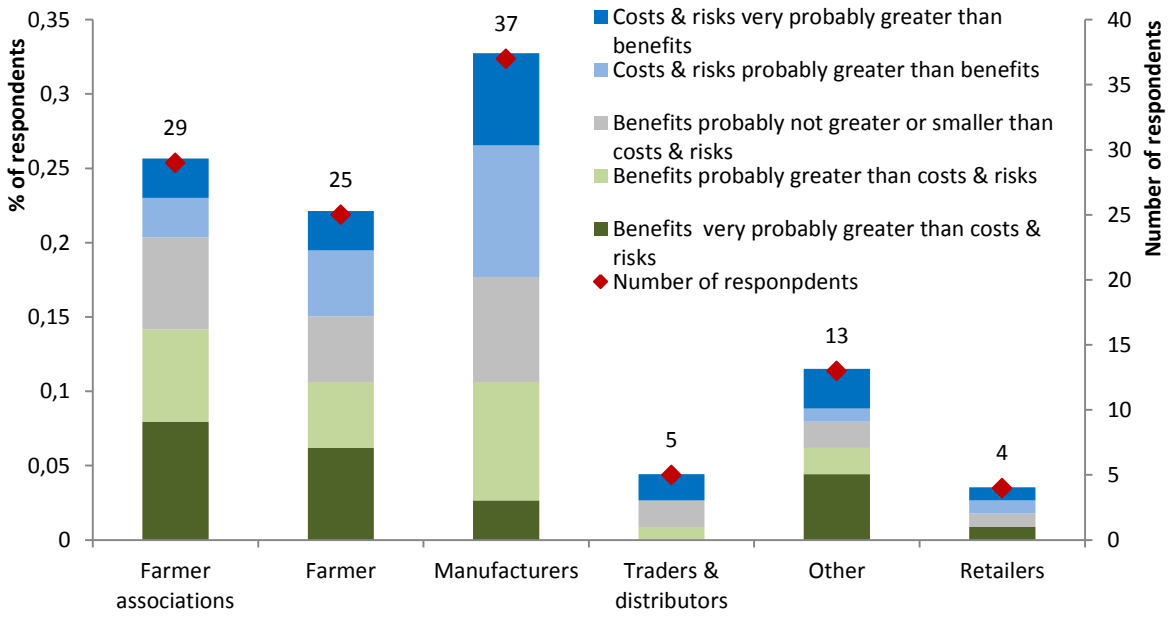


Figure 13 attempts to provide the respondents' evaluation of the net effect of the increased market transparency along the agri-food supply chain. Respondents were asked to compare the benefits relative to the

reporting costs and risks of increased market transparency for their business or organisation. According to the results, a greater share of respondents perceive benefits to be bigger than the reporting costs and risks of the increased market transparency as compared to the share of respondents that perceive the opposite (i.e. net loss). That is, for around 43% of all respondents the benefits are probably or very probably greater than costs and risks, whereas for 35% of respondents the costs and risks are probably or very probably greater than benefits. Around 22% of respondents reported to have insignificant net effect (i.e. benefits are probably not greater or smaller than costs and risks) from the increased market transparency.

There is a significant deference in the relative distribution of the reported net effect of the increased market transparency between responds from different stages of the agri-food supply chain. The share of farmers and farmers' association that report to have net benefits is greater that the share of those that report net loss from the increased market transparency. The reverse is valid for manufacturers, traders & distributors and retailers: more respondents from this groups report net loss than net benefits (Figure 13).

Figure 25. Comparison of benefits versus reporting costs and risks of increased market transparency along the agri-food supply chain (% of all respondents; number of respondents)



3.2 Structured interviews

In order to get better insights from operators and associations on the potential benefits and risks from increased market transparency a question of the structured interview was dedicated to this. Interviewees were first asked about their awareness of the Agricultural Markets Task Force (AMTF) on market transparency and the perceived relevance of increased market transparency. Then they were asked to comment on the perceived benefits and risks for their companies of increased market transparency. It is noteworthy that interviewees were always faced with questions on increased market transparency as compared with current state and not with general questions on market transparency.

Awareness and relevance

The interviews revealed that all 9 interviewed associations were aware and some of them had been also actively involved in the AMTF whereas of the 11 operators, only 6 knew about it. A remaining interviewed organisation reported not to be aware of the AMTF.

Of the 21 interviewees, 7 (33%) argued that sufficient information related to agri-food supply chains is already publically available, it is just a matter of using and making available the information that is already there and there is no need to collect additional information. However, this view seems to be related to the amount of the information already publically available in their sector and segment of the food chain.

Indeed from a full chain perspective, 16 (76%) of interviewees suggested potential benefits of increased market transparency but stressed that to be useful market transparency needs to be ensured across all stages of the supply chain (particularly prices and volumes) in order to reduce information asymmetry and to avoid competitive disadvantage position of food supply stages that report information as compared to those that do not do so. This was particularly true for interviewees from the farming and manufacturing stages.

However, one interviewee (5%) argued that the impact of transparency per se should not be overestimated; sometimes data are available but not used. In a similar line of argument, 4 interviewees (19%) also stressed that training and education is important for the success of increased market transparency in order operators (e.g. farmers) be able to understand and benefit from it. In addition, if information is not used by farmers while other stages of the chain take advantage of it, it may become a double-edged sword.

It was suggested by some interviewees that the European Commission should direct efforts to knowledge transmission and training on how to use information available. Also governments could play a role in gathering basic information, but processing, interpreting and market analysis should be left to the private sector. Some interviewees consider that the current information provided to EU is rather oriented towards the needs of policy making and is less useful for to operational business needs. An interviewee stressed that public authorities should only publish row data, while the analyses of the data should be left for the private sector.

Finally, some interviewees indicated that increased reporting requirements should be mandatory and established by law in order to avoid opportunistic behaviours and one commented in order to achieve operationality through near real time data reporting should be preferable and it should be established by the Commission and not by MSs.

Benefits and risks

Of the 16 (76%) interviewees that perceived potential benefits of increased market transparency for companies or businesses operating in the food chain 12 (57%) reported also on perceived potential risks, while another 4 (14%) reported only no risks.

The most mentioned benefits of increased market transparency were that generate dialog, provide market knowledge, benchmark opportunities, reduce information asymmetries, enhance trust, bring unfair practices to the surface, allows better decision making, important input and feedback for policy making.

The most mentioned risks of increased market transparency by interviewees are the lack of methodology and established product definitions to make it possible to compare across sectors and along the food chain, competition pressures, lowering selling prices, confidentiality and security issues, revealing of business secrets, administrative burden, the challenge of ensuring the quality of data.

Several interviewees stressed that a potential risk of increased reporting could induce strategic/ opportunistic behaviour of some operators by deliberately reporting inaccurate data in order to affect the market.

The interviews revealed a list of potential effects of increased market transparency. However, the perception as a benefit or a risk of certain effects differs across sectors and the stage in the food chain. For instance, of 13 (62%) interviewees that mentioned increased options for benchmarking, 10 (48%) considered it as an opportunity for operators to evaluate the situation of the company, of the market and of the products to get

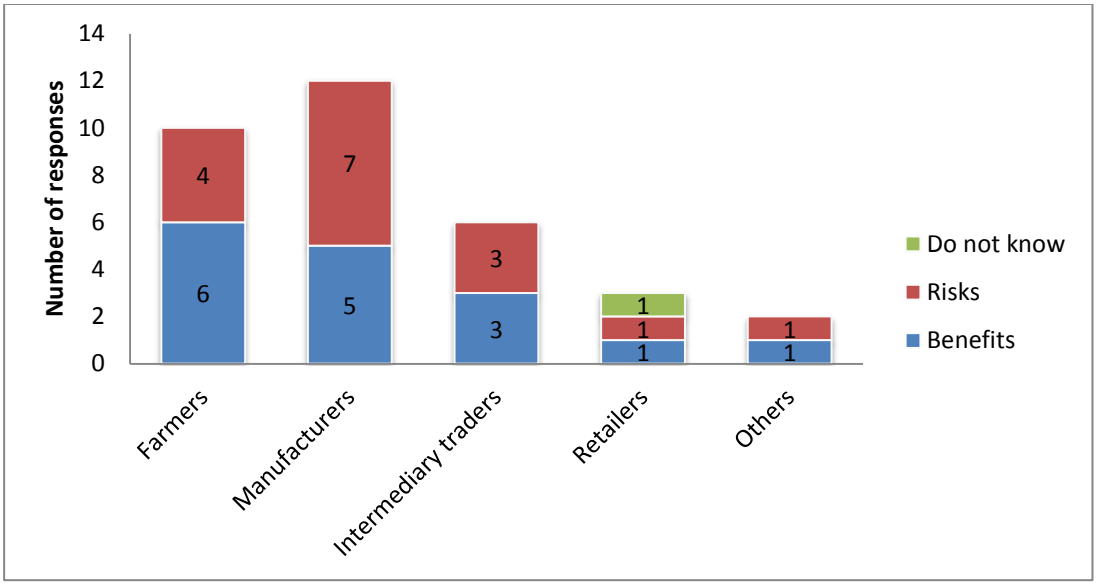
a fair price and to improve productivity; however, 3 among them saw also risks and 2 reported no risks. Some interviews suggested that the increased market transparency can help to push purchase (farmers') prices down as they give more power to the client and increase competition pressures from neighbouring countries.

Some 7 (33%) interviewees stressed that transparency along the food chain can help to solve the information asymmetry given that currently there is an imbalance in availability of information across different stages of the food chain. While the early stages of the chain tend to more transparent (mainly farmers and some manufacturers), there is limited transparency towards the downstream. A few interviewed manufacturers, however, feared that a higher transparency can provide more power to their clients, thus counteracting the potential benefits.

Several interviewees highlight the relevance of enhanced market transparency to bring unfair trade practices to the surface. Interestingly only few of interviewees suggested the administrative burden as a risk of increased reporting/notification requirements related to increased market transparency

In relation to the usefulness of increased market transparency, data quality is often mentioned as a challenge in terms of accuracy (information must be correct and this opens the question of the enforcement); timeliness (i.e. for perishable products); representativeness (e.g. for some sectors if only wholesale prices are made publicly available, they might represent only a small portion of the market); relevance (e.g. important product varieties must be considered and increased transparency must be oriented to meet the needs of operators, not just of policy objectives)[322], comparability (e.g. the comparison of margins across different stages of the food chain is a challenge since cost/margin structure is very different across different stages and sectors). Finally, accessibility was brought up by some interviewees arguing that the system must be simple and easy to use and interpret.

Figure 26. Comparison of benefits versus reporting risks of the increased market transparency along the agri-food supply chain (number of responses)



[322] For instance, some farmer and farmer associations see the main risk in the product definition. Products have different sizes (e.g. small vs large varieties have different markets), shapes, and varieties. The prices usually depend on these characteristics and they point out difficulties in relying their business deceptions on prices for standard products. Also this could raise problems of increased competition with other countries where other varieties of the same product are produced at different prices.

With regard to the comparability of reported information, several interviewees stressed that there is need to develop a proper methodology for data collection and aggregation and to establish adequate product definitions.

Last but not least, confidentiality, especial in concentrated markets, and IT security are considered as a potential important risks from the of increased market transparency. These risks are often perceived to lead to the disclosure of business secrets. Figure 14 shows the number of interviewees' responses regarding benefits and risks from increased market transparency by stage in the food chain.

4 Costs of reporting to a third party

4.1 Online Survey

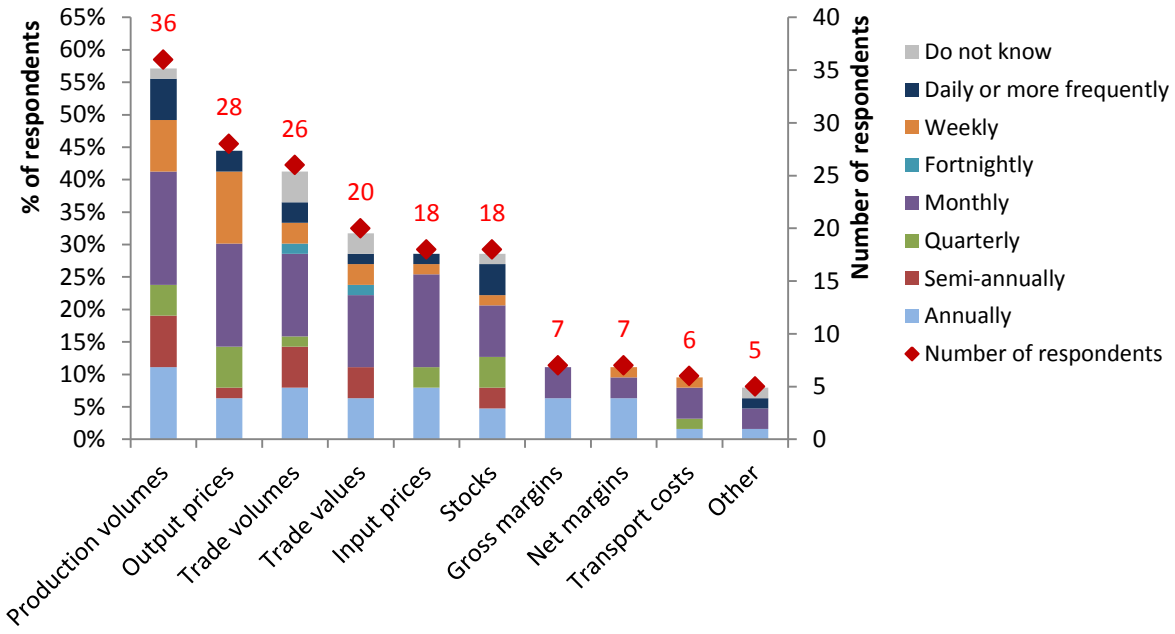
The primary objective of the survey was to collect information on the respondent's cost of reporting to a third party for (i) the existing reporting practices and (ii) the estimated costs for reporting all relevant information. Many operators already report various type information to a third party such as to a public authority (e.g. government agency, national statistical office), a private company (e.g. market research company) or other agencies (e.g. associations, NGOs). As depicted in Figure 15, the most commonly reported information to a third party at product level for the existing reporting practices include production, output prices and trade volumes representing individually more than 40% of respondents who report to a third party. Other relatively commonly reported information to a third party at product level include trade values, input prices and stocks, varying between 29% and 32% of respondents who report to a third party. Other information reported to a third party at product level is done by less than 12% of respondents. Respondents usually report information to a third party at product level on monthly bases (10% of respondents who report to a third party on average over the ten type of information listed in Figure 15) followed annual (6%) and weekly (3%) reporting. Other reporting frequencies are practiced to a lesser extent (by less than 3% of respondents who report to a third party) (Figure 15).

The actual reporting experience of operators' might imply that they can provide a more accurate cost estimates of reporting to a third party. However, as shown in Figure 15 there is a significant variation in the frequency and the type of information reported to a third party between respondents as well as many operators do not report to a third party. For this reason, the survey included questions attempting to capture respondents' estimated cost of reporting to a third party all information related to input/output prices, volumes (production, stocks, trade), transport costs and margins. This reporting requirement is more demanding as compared to the existing reporting practices. This is because it assumes reporting all information to a third party on input/output prices, volumes (production, stocks, trade), transport costs and margins.

Important is to note that only those operators were asked in the questionnaire to provide cost for existing reporting practices who report information by product type to a third party. This choice was made in order to avoid underestimation of costs given that the reporting by product type is expected to be more costly as compared to reporting information at overall operator level.

The questions of the survey were formulated so that allows us to capture the additional costs of reporting to a third party. Operators usually have an established reporting system for various economic and financial indicators for internal management purposes. The survey attempted to capture only those costs that are incurred in addition to the costs spent on reporting system for internal operators' use. Respondents were asked to provide two types of costs of reporting to a third party: annual running costs and total set-up costs. The running costs include expenditures spent each year by operators to maintain the reporting system (e.g. personnel costs, IT) to a third party. The set-up costs are one time expenditure incurred to set-up the system of reporting to a third party.

Figure 27. Type of information reported at product level and their frequency of reporting to a third party by operators (% of respondents who report to a third party; number of respondents)



Costs of existing reporting practices

Out of total 113 respondents, around 82% (93 respondents) have an established reporting system for input/output prices, volumes (production, stocks, trade), transport costs and/or margins of own operations and transactions for internal and/or external use and around 56% (63 respondents) report to a third party (public authority, private company or other type). However, not all respondents who report to a third part provided cost estimates. Only 27% of all respondents (30 respondents) report to a third party and provided estimates for running costs, while 20% (23 respondents) report to a third party and provided estimates for set-up costs.

Figure 16 (Figure 17) shows the operators' running (set-up) costs of reporting to a third party as a share of the total annual running (or total set-up) cost of the operators' reporting system.[323] Usually operators do not differentiate between expenditures on reporting for internal use and expenditures of reporting to a third party. For this reason operators were asked to provide an estimate of the costs of reporting to a third party as a share of the total annual running (or total set-up) cost of the operators' reporting system. The shares of respondents reported in Figure 16 and Figure 17 are calculated as percentages in all respondents that report to a third party and provided cost estimates (i.e. the share out of 30 and 23 respondents in Figure 16 and Figure 17, respectively). These costs are for the existing reporting practices to a third party.

According to the survey results, around 73% (22 respondents) of respondents who report to a third party and provided cost estimates have running costs of reporting to a third party lower than 20% of the total annual running costs of the operators' reporting system, around 23% (7 respondents) have the costs between 20% and 50% and the remaining 3% (1 respondent) have the costs greater than 75% (Figure 16).

Similar distribution pattern is valid for set-up costs, although the proportion of respondents with lower costs is greater. That is, around 87% (20 respondents) of respondents who report to a third party and provided cost estimates have set-up costs of reporting to a third party lower than 20% of the overall set-up costs of the

[323] The total annual running and total set-up costs of reporting represent the expenses which operators incur to gather, process, and transmit the information for both internal use and/or for external reporting.

operators' reporting system, around 13% (3 respondents) have the costs between 20% and 50% and no respondent had costs greater than 75% (Figure 17).

Figure 28. Annual running costs of reporting to a third party, for existing reporting practices (% of all respondents who report to a third party and provided cost estimates; Number of respondents)

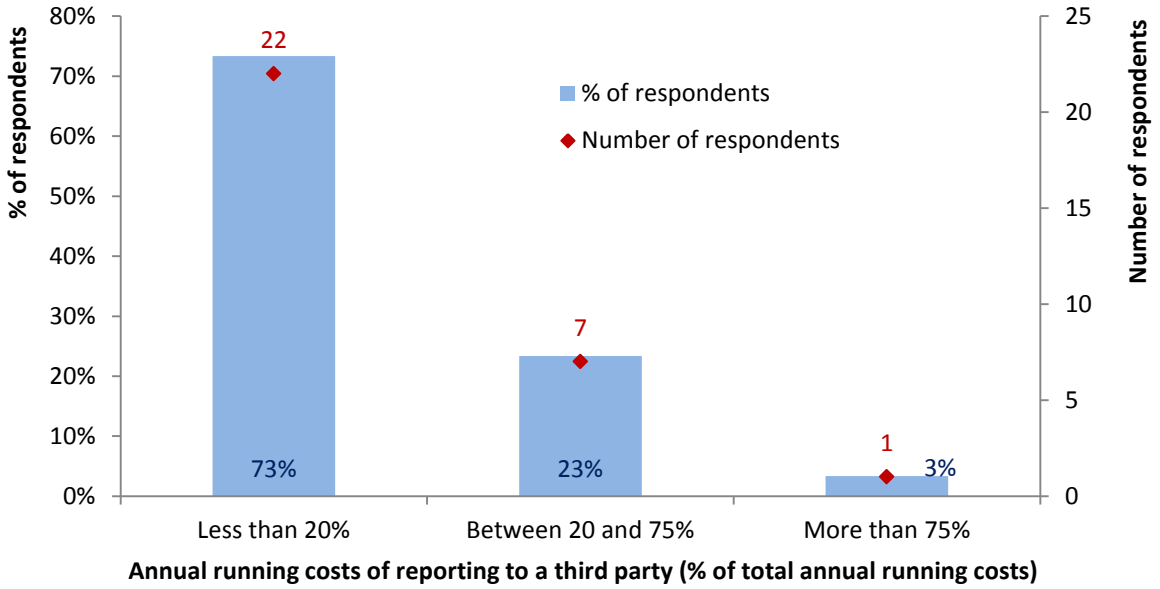


Figure 29. Set-up costs of reporting to a third party, for existing reporting practices (% of all respondents who report to a third party and provided cost estimates; Number of respondents)

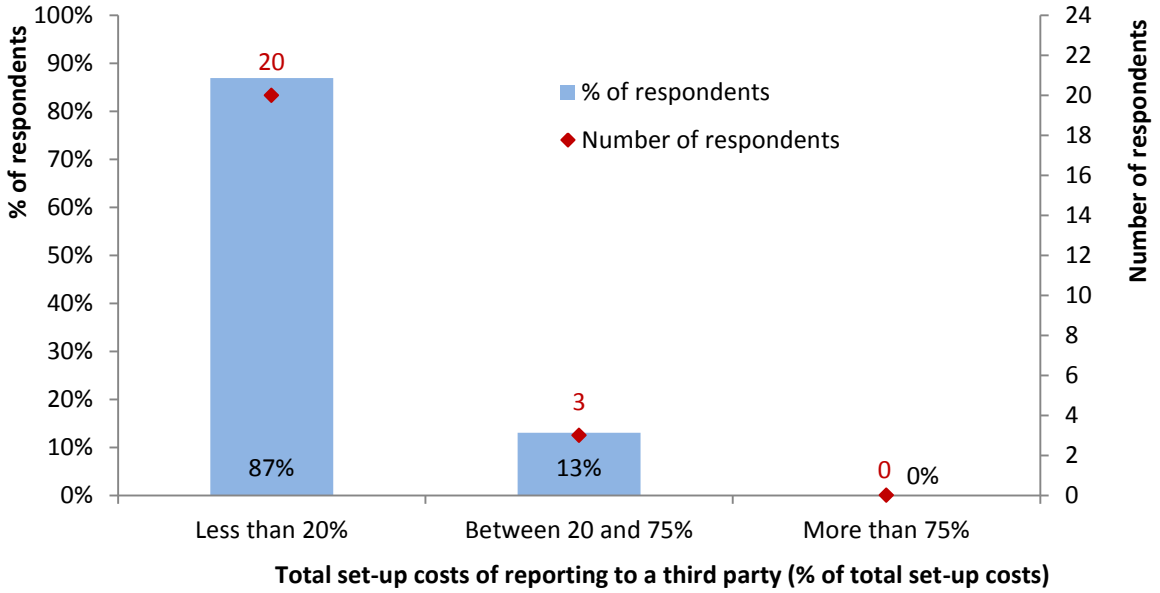


Figure 18 (Figure 19) shows the annual running (total set-up) costs of reporting to a third party as a share of the total annual running (set-up) costs of the operators' reporting system by size of total annual running (set-up) costs. The aim of these figures is to provide a more detail picture of the cost distribution by their size.

A significant share of respondents who report to a third party did not provide cost estimates for the overall costs of operators' reporting system or/and also additional reporting costs to a third party either because they do know their value (e.g. difficult to estimate) or because they did not want to provide them. For the annual running costs, around 29% of respondents who report to a third party do not know or did not want to provide the total costs of existing reporting system (used for internal and external reporting), whereas

around 24% of respondents who report to a third party do not know or did not want to provide the reporting cost of existing system to a third party (Figure 18a). For the total set-up costs these figures are larger: around 43% of respondents who report to a third party do not know or did not want to provide the set-up total costs of existing reporting system, whereas around 32% of respondents who report to a third party do not know or did not want to provide the reporting cost to a third party (Figure 19a).

As mentioned above, operators who do not report information by product type to a third party were not asked to provide costs estimates. They represent 24% of respondents who report to a third party for both the annual running costs and the total set-up costs (Figure 18a, Figure 19a).

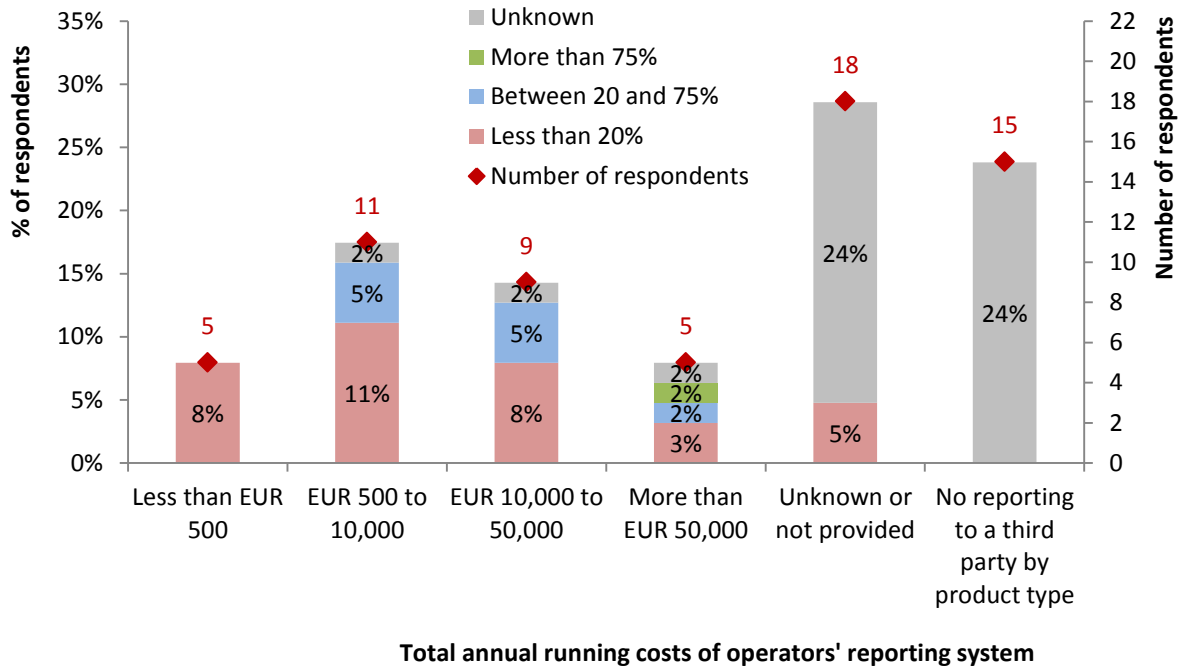
Most respondents who report to a third party and provided cost estimates tend to have annual running costs of reporting smaller than EUR 50,000 and costs for reporting to a third party represent less than 20% of these. For example, 33% (23% + 10%) of respondents who report to a third party and provided cost estimates have annual running costs of the reporting system between EUR 500 and EUR 10,000 of which less than 20% are the costs of reporting to a third party for most of these respondents (Figure 18b).

What concerns set-up costs, the vast majority of respondents who report to a third party and provided cost estimates have set-up costs of reporting to a third party smaller than 20% of the total set-up costs of operators' reporting systems. Only a small share of respondents have the set-up costs to a third party between 20% and 75% of the total set-up costs, while none of the respondents have costs greater than 75%. For example, 26% (22% + 4%) of respondents who report to a third party and provided cost estimates have total set-up costs of reporting system between EUR 1,000 and EUR 10,000 and for most of them the costs of reporting to a third party represent less than 20% of these (Figure 19b).

Figure 20 (Figure 21) shows the annual running (total set-up) costs of reporting to a third party as a share of the total annual running (set-up) costs of the operators' reporting system by operator size (number of employees).

Figure 30. The share of annual running costs of reporting to a third party for existing reporting practices (of the total annual running costs of operators' reporting system)

a) % of respondents who report to a third party



b) % of respondents who report to a third party and provided cost estimates

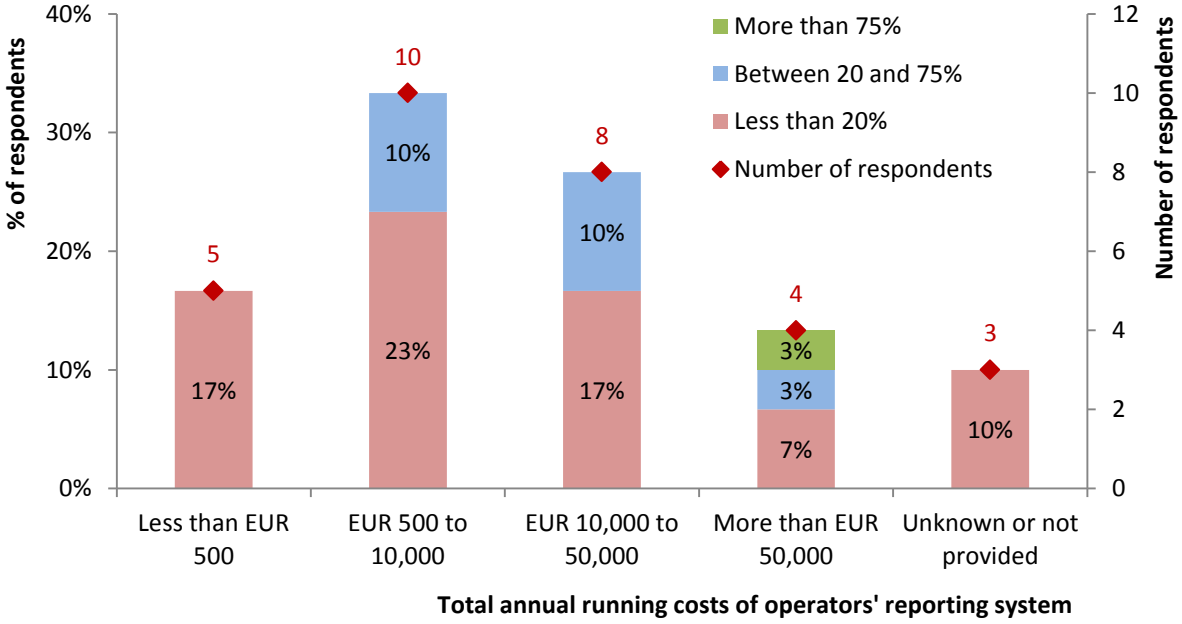
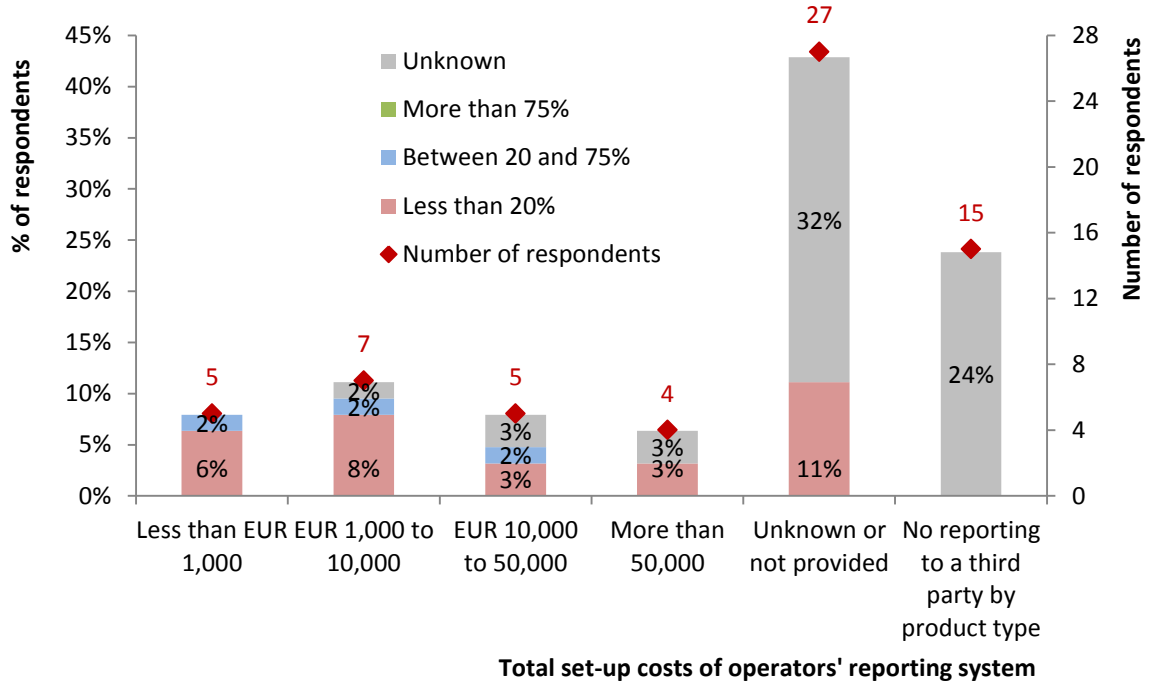
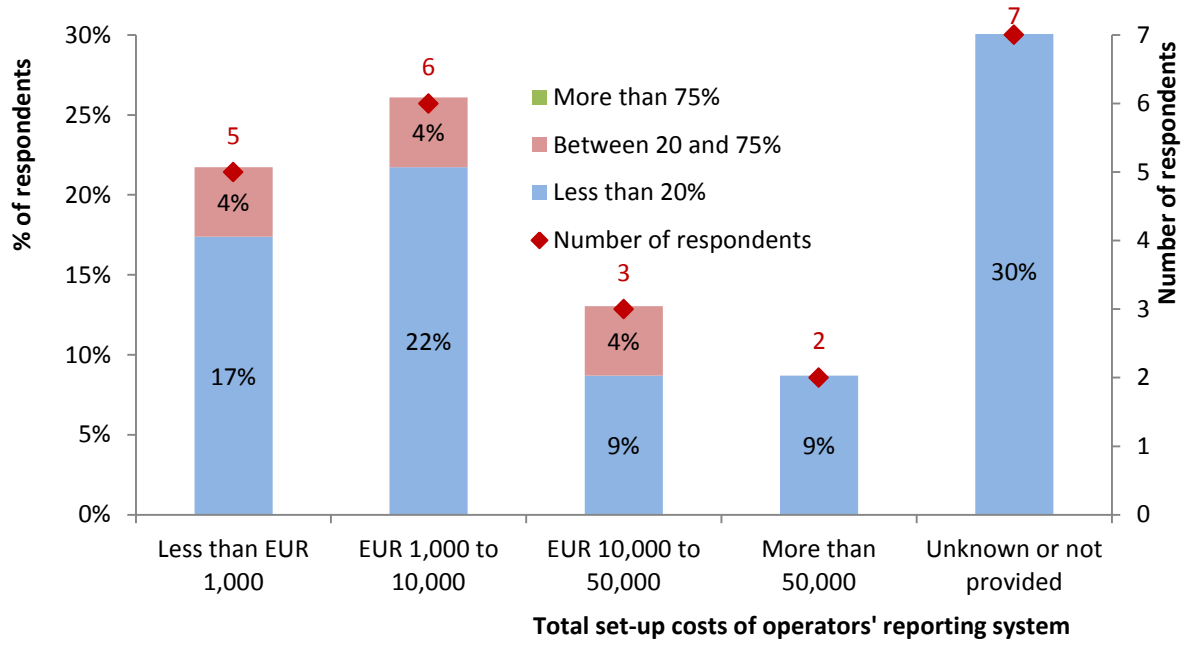


Figure 31. The share of <u>set-up costs</u> of reporting to a third party for existing reporting practices (of the total set-up costs of operators' reporting system)

a) % of respondents who report to a third party



b) % of respondents who report to a third party and provided cost estimates



Most respondents who report to a third party have annual running costs of reporting to a third party smaller than 20% of the total annual running costs of operators' reporting systems across all operator sizes. The exception are operators with the number of employees between 10 and 49 persons who have equal split of the annual running costs of reporting to a third party between less than 20% of the total annual running costs and between 20% and 75% of the total annual running costs (Figure 20).

Figure 32. Annual running costs of reporting to a third party as a share of the total annual running costs, for existing reporting practices, by operator size (% of all respondents who report to a third party and provided cost estimates; Number of respondents)

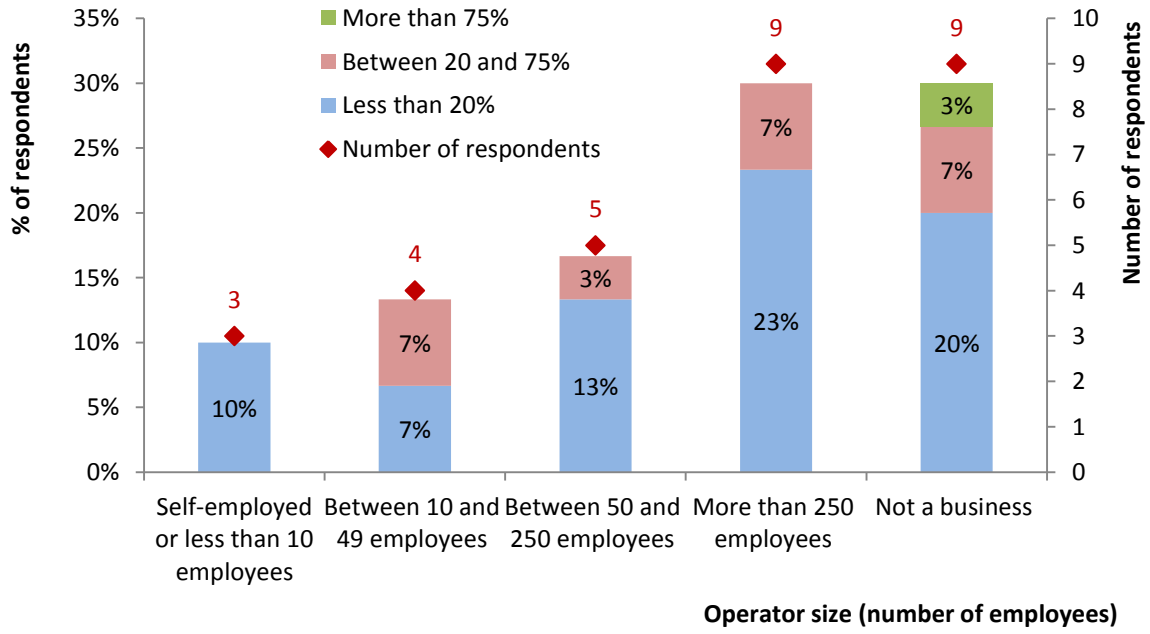
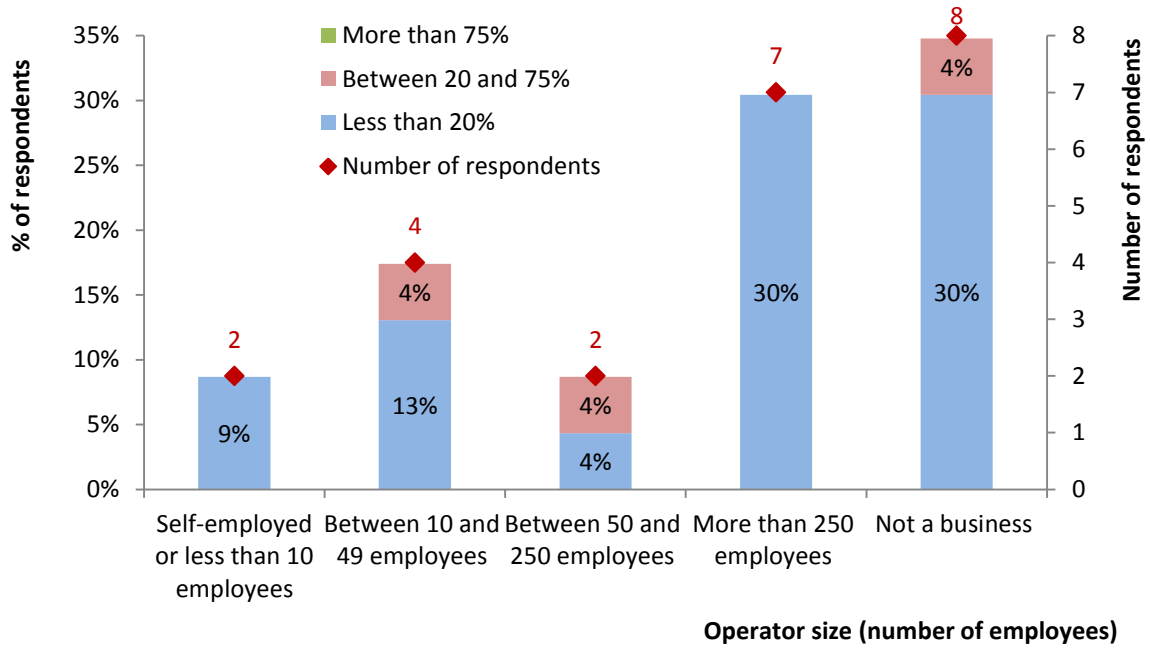


Figure 33. Set-up costs of reporting to a third party as a share of the total set-up costs, for existing reporting practices as share, by operator size (% of all respondents who report to a third party and provided cost estimates; Number of respondents)



Similar is valid for the total set-up costs of reporting to a third party. That is, most respondents who report to a third party have total set-up costs of reporting to a third party smaller than 20% of the total set-up costs of operators' reporting systems across all operator sizes. This share of respondents is greater than in the case of running costs. Only operators with the number of employees between 50 and 250 persons have an equal split of the annual running costs of reporting to a third party between less than 20% of the total annual running costs and between 20% and 75% of the total annual running costs (Figure 21).

Respondent estimated costs for reporting all relevant information

This section shows the estimated annual running and total set-up costs of reporting to a third party all information related to input/output prices, volumes (production, stocks, trade), transport costs and margins (Figure 22 and Figure 25). Because price data are one of the most commonly reported information to a third party, respondents were also asked to provide the share of estimated costs for input/output price reporting to a third party out of the total reporting costs (Figure 22 and Figure 25). All respondents were asked to provide these estimated costs. Out of total 113 respondents, 51% (58 respondents) provided estimates for annual running costs and around 46% (52 respondents) provided estimates for total set-up costs.

Overall, a greater share of respondents (more than half of those that provided cost estimates) tend to have the estimated annual running and total set-up costs of reporting to a third party in lower cost brackets. Regarding running costs, around 55% of respondents who provided cost estimates suggested that the estimated annual running costs of reporting to a third party would be lower than EUR 10,000, for 16% the costs would be between EUR 10,000 and EUR 25,000 and for the rest of respondents (29%) the costs would be higher than EUR 25,000 (Figure 22b).

If only respondents who report to a third party (for existing reporting practices) and provided cost estimates are considered (Figure 22c), for 60% of them the estimated annual running costs of reporting to a third party are lower than EUR 10,000, for 25% the costs would be between EUR 10,000 and EUR 25,000 and for the rest of respondents from this group (15%) the costs would be higher than EUR 25,000.

As expected, the respondent estimated running costs of reporting to a third party tend to be positively correlated with the operator size (number of employees). The majority of smaller operators (e.g. 86% of self-employed or operators with less than 10 employees) tend to have the estimated running costs lower than EUR 10,000, while larger operators (e.g. 79% of operators with more than 250 employees) tend to have the estimated costs greater than EUR 10,000 (Figure 23).

According to Figure 24, the share of respondent estimated running costs of reporting only input/output prices to a third party is lower than 20% of the total annual running costs of reporting to a third party for most operators who provided cost estimates (i.e. for 80% of respondents who provided cost estimates).

Regarding set-up costs, around 52% of respondents who provided cost estimates suggested that the estimated total set-up costs of reporting to a third party would be lower than EUR 10,000, for 19% the costs would be between EUR 10,000 and EUR 20,000 and for the rest of respondents (29%) the costs would be higher than EUR 20,000 (Figure 25, panel b).

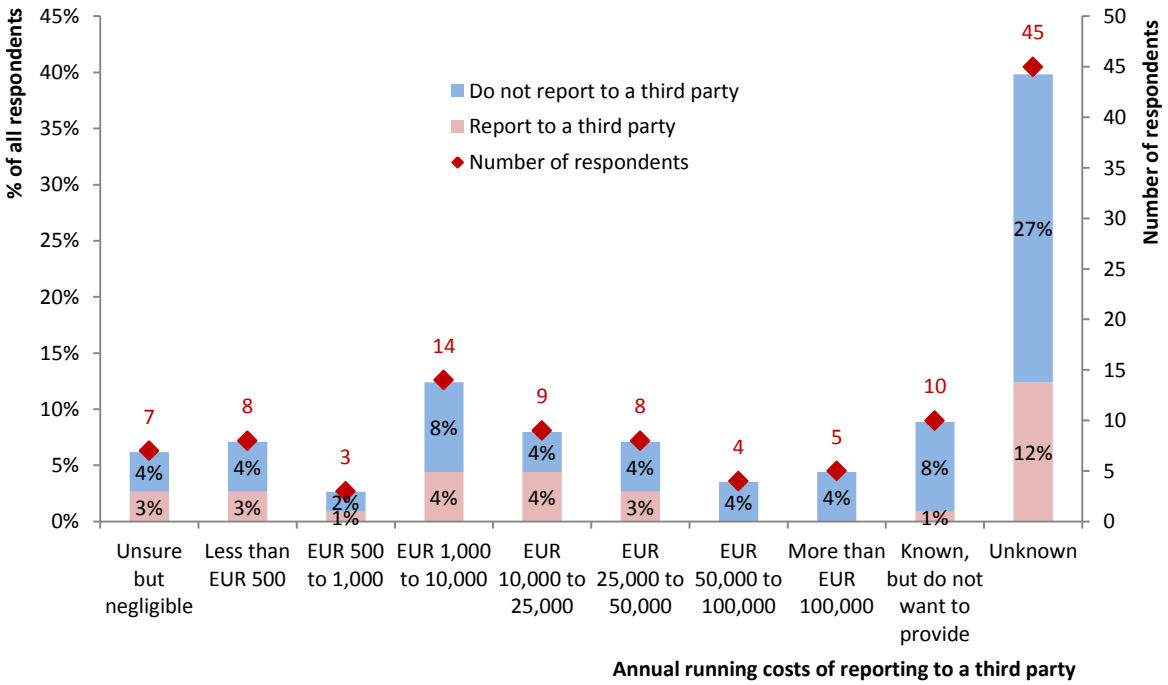
Whereas if only respondents who report to a third party and provided cost estimates are considered (Figure 25c), for 59% of them the estimated set-up costs of reporting to a third party are lower than EUR 10,000, for 24% the costs would be between EUR 10,000 and EUR 25,000 and for the rest of respondents from this group (18%) the costs would be higher than EUR 25,000.

Similar as for the running costs, respondent estimated set-up costs of reporting to a third party tend to be positively correlated with the operator size (number of employees). The majority of smaller operators (e.g. 91% of self-employed or operators with less than 10 employees) tend to have the estimated running costs lower than EUR 10,000, while larger operators (e.g. 71% of operators with more than 250 employees) tend to have the estimated costs greater than EUR 10,000 (Figure 26).

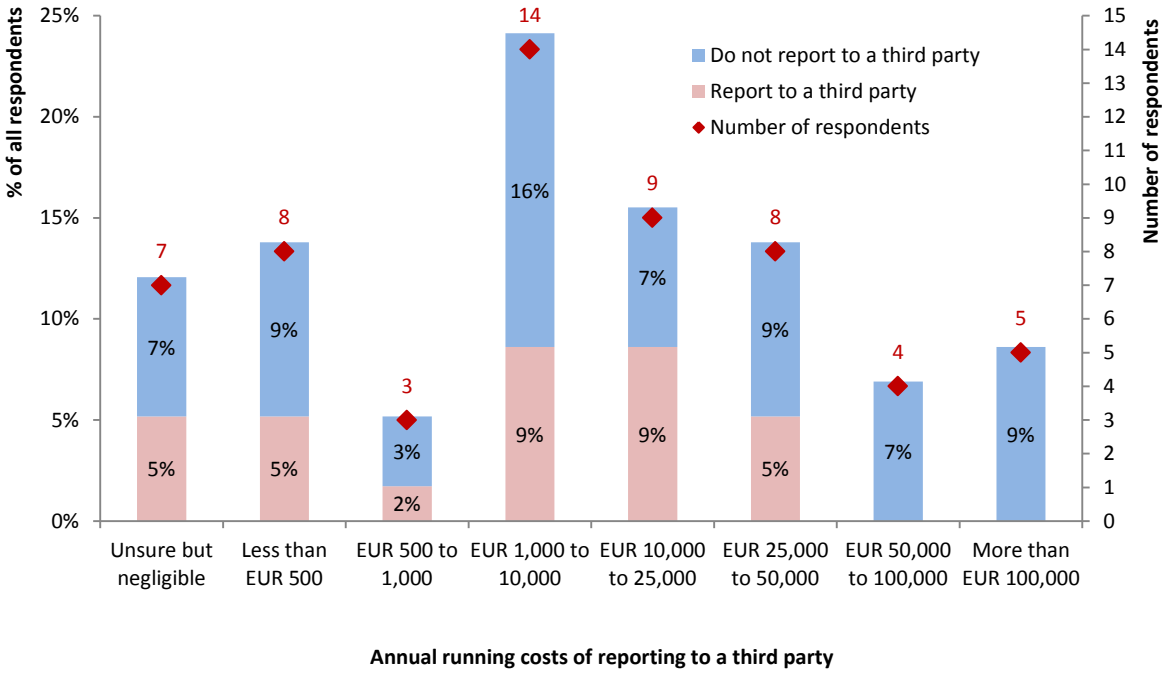
According to Figure 27, the share of respondent estimated set-up costs of reporting only input/output prices to a third party is lower than 20% of the total annual running costs of reporting to a third party for most operators who provided cost estimates (for 71% of respondents who provided cost estimates).

Figure 34. Respondent estimated annual running costs, reporting and not reporting to a third party

a) % of all respondents



b) % of respondents who provided cost estimates



c) % of respondents who report to a third party and provided cost estimates

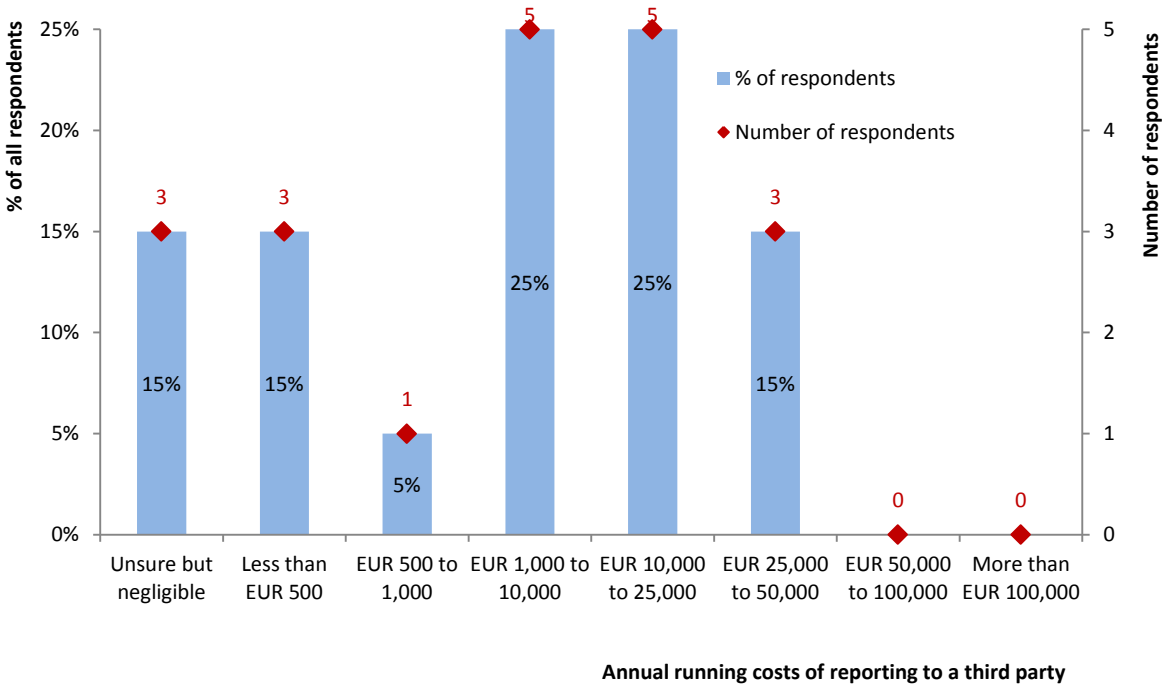


Figure 35. Respondent estimated running costs of reporting to a third party by firm size (% of respondents who provided cost estimates)

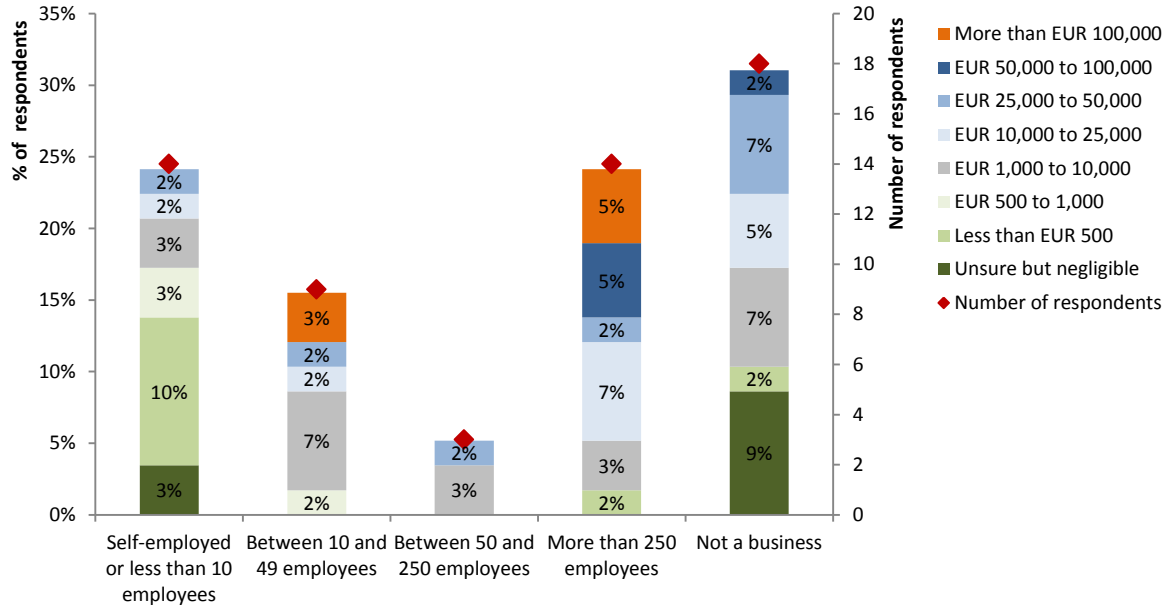


Figure 36. The share of respondent estimated running costs of input/output price reporting to a third party of the total annual running costs of reporting to a third party (% of respondents who provided cost estimates)

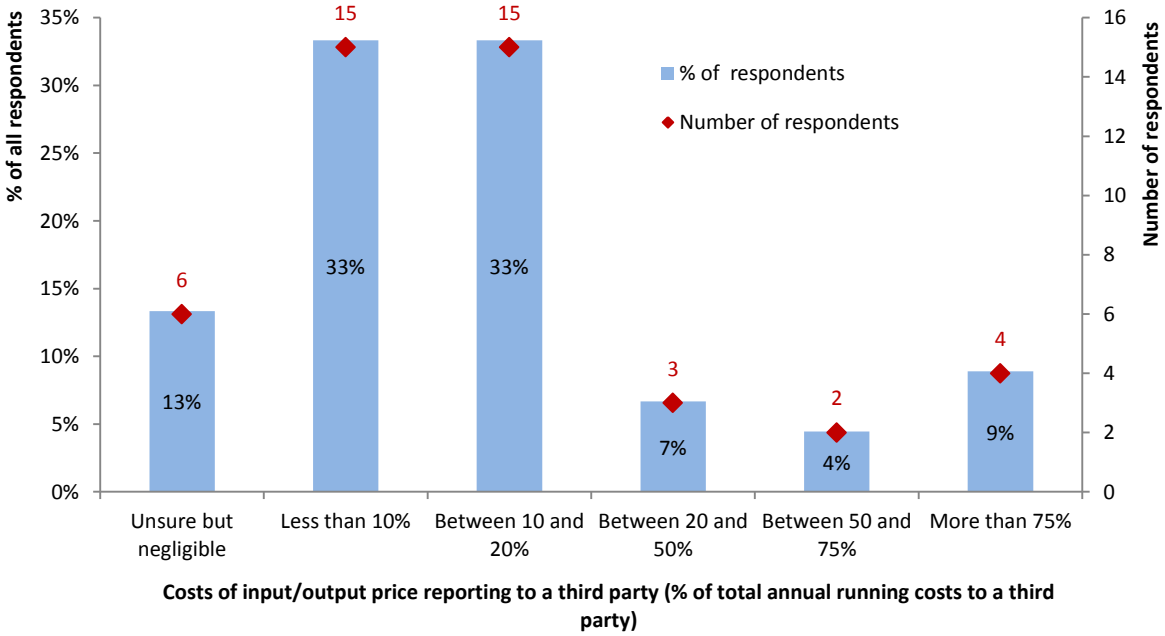
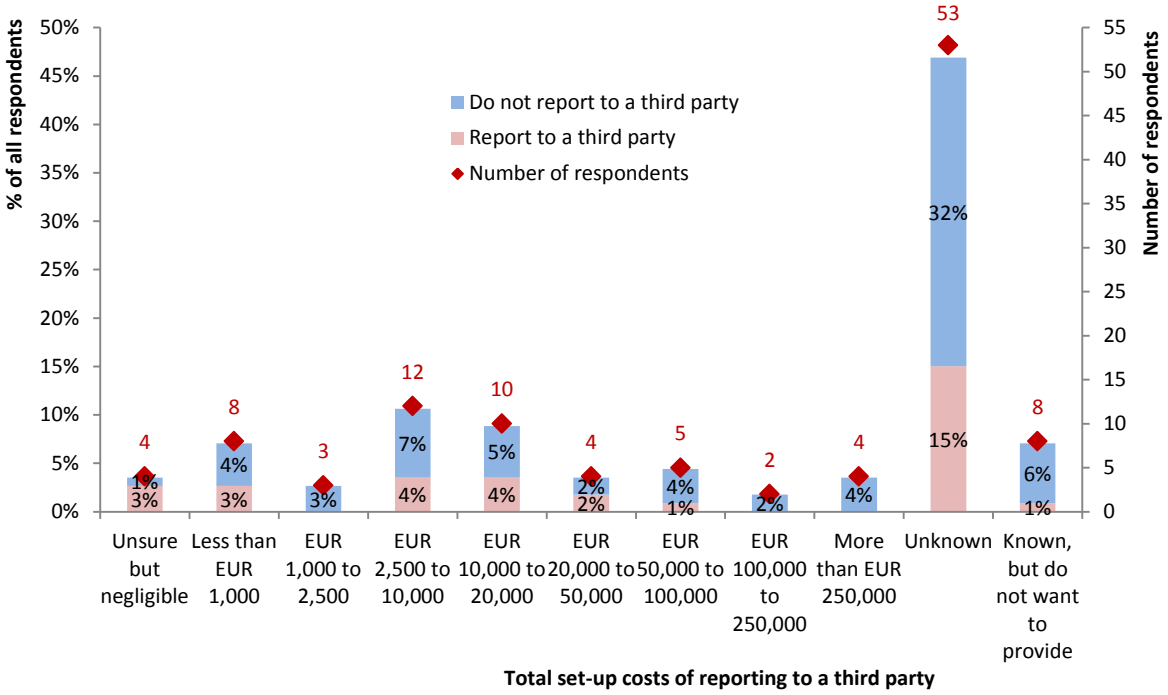
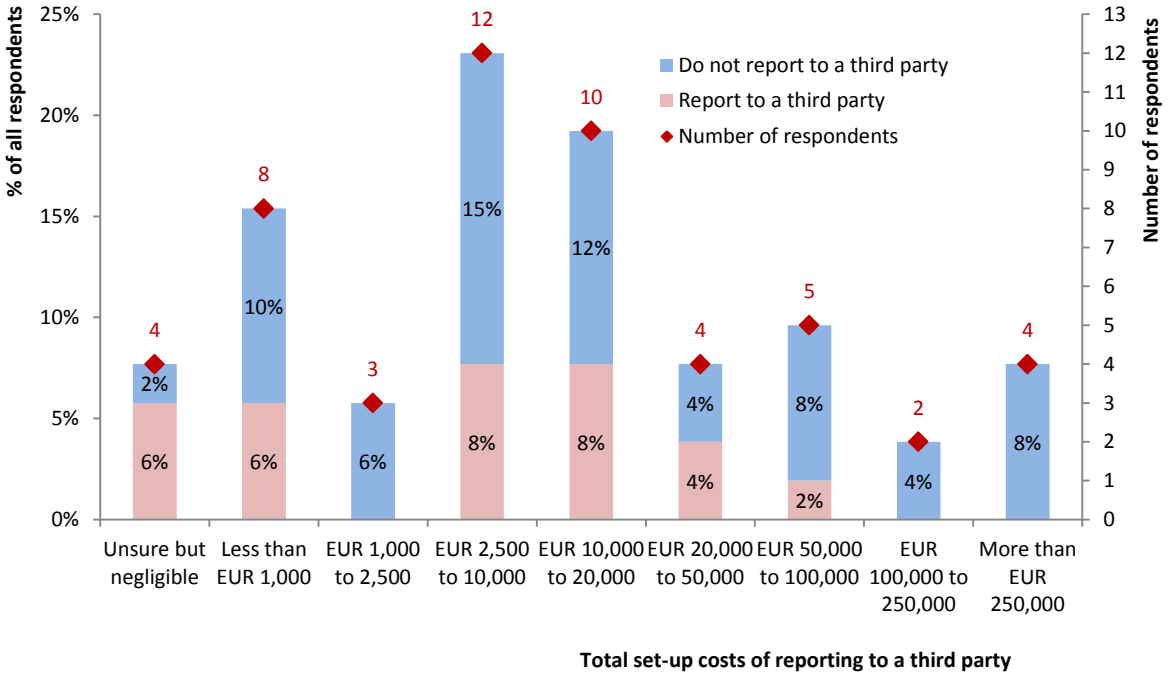


Figure 37. Respondent estimated set-up costs of reporting to a third party

a) % of all respondents



b) % of respondents who provided cost estimates



c) % of respondents who report to a third party and provided cost estimates

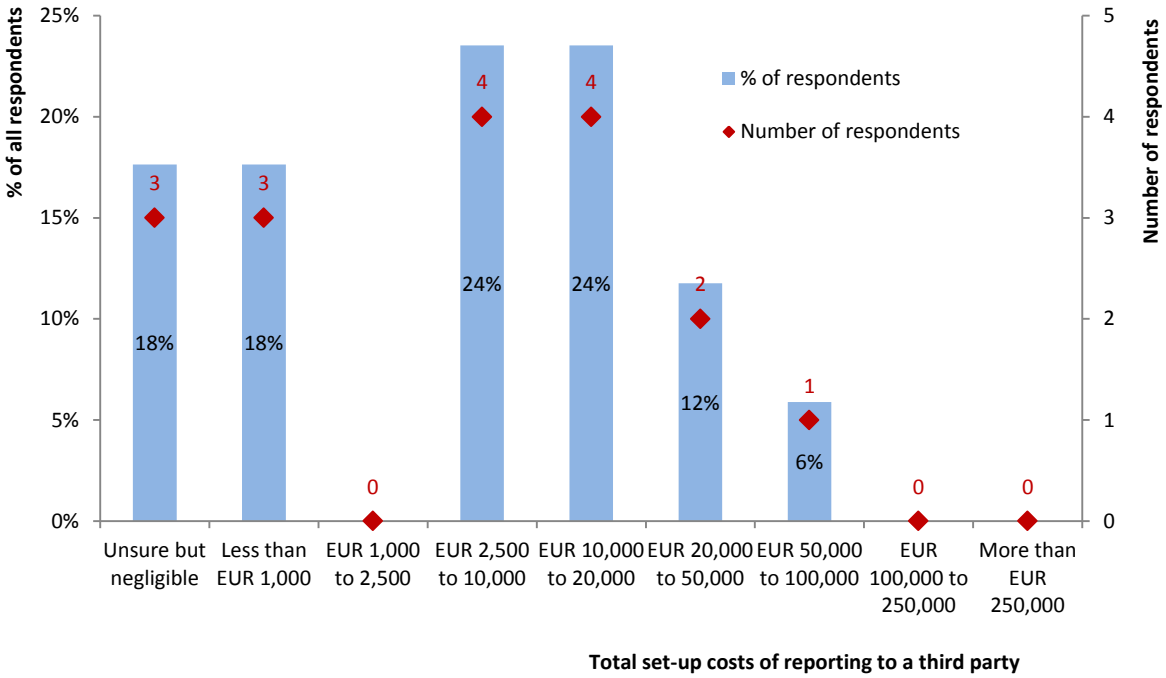


Figure 38. Respondent estimated <u>set-up costs</u> of reporting to a third party by firm size (% of respondents who provided cost estimates)

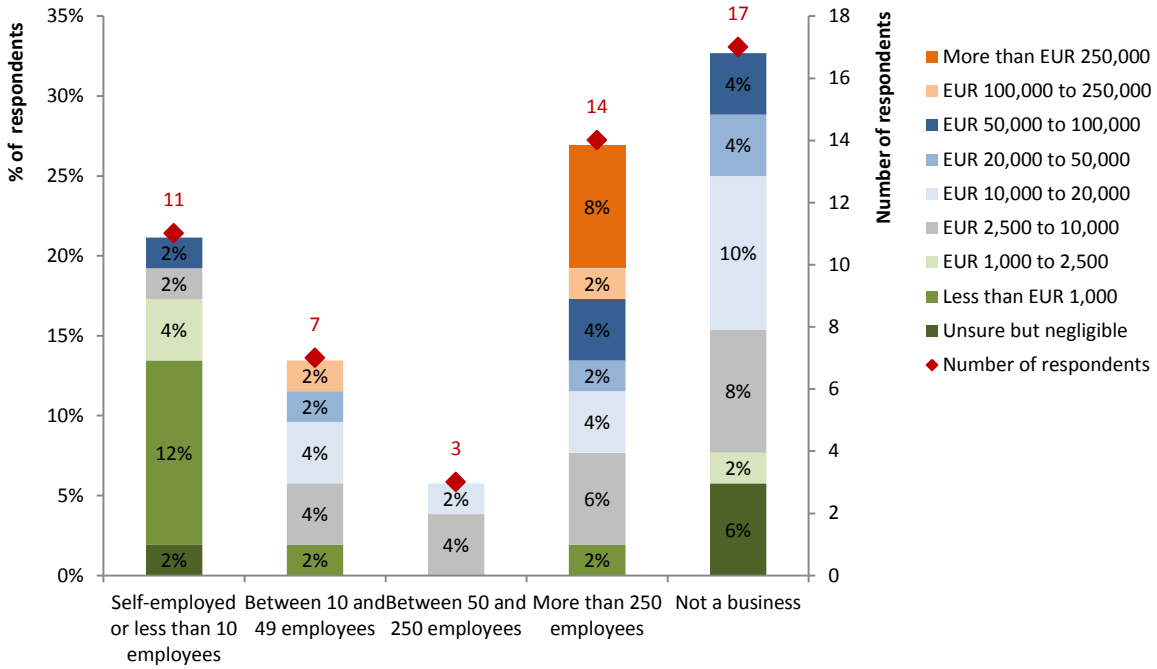
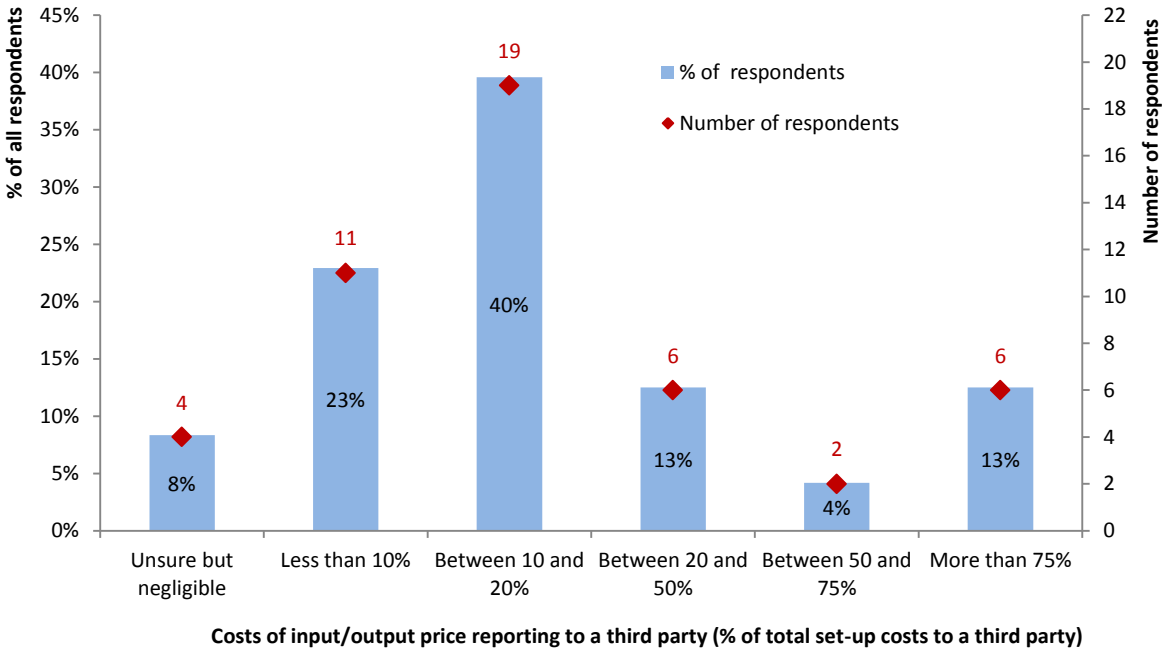


Figure 39. The share of respondent estimated set-up costs of input/output price reporting to a third party of the total set-up costs of reporting to a third party (% of respondents who provided cost estimates)



4.2 Structured interviews

The following sections summarize the main findings from the structured interviews concerning the costs estimated by the interviewees as well as the suggested cost drivers and constrains to comply with increased reporting / notification requirements to a third party related to increased market transparency.

Costs estimates

Of 21 interviewees, 18 (86%) were able to provide estimates for the annual running costs to fulfil an obligation to report information to a third party and 16 (76%) could provide estimates as well on the set-up costs

Among them 6 interviewees (29%) expressed that the (running and set-up) costs to fulfil an obligation to report data on output prices to a third party (additional costs) are mostly considered as negligible, since data are in most cases already available in the operators' systems and several interviewed operators are already reporting this type of information to a third party (14), either to public authorities (e.g. government, national statistical offices, market observatories) or to private companies (e.g. market research companies).

The cost estimates to notify market transparency data to a third party vary from negligible (7) additional running costs (data annualized) to EUR 1,000, EUR 1,000 to 10,000, EUR 10,000 or EUR 25,000 to 50,000 (6). Other (4) provide the information in terms of employees and report from less than half time Full Time Employee (FTE), to a half time FTE, given that the data are already being collected in the companies' systems. One operator mentioned that the costs of hiring the required new employees are high and 3 interviewees could not provide an estimation(Figure 29).

In terms of sept-up costs (16), the interviewees answers vary from negligible (8) to EUR 5,000, EUR 10,000, EUR 10,000 to 20,000, EUR 50,000, EUR 50,000 to 100,000 (7). One operator mentioned high IT investment costs due to the fact that their data collection and reporting is at a very primal level. 5 interviewees could not provide an estimation of the set-up costs (Figure 29).

The interviewees revealed that in terms of reporting of data on volumes (e.g. production, trade, stocks) similarly to prices, if these are available in the internal company management system, the additional reporting to a third party would not imply an important investment or considerably increased running costs.

Figure 40 Interviewee estimated additional running costs for third party reporting[324]

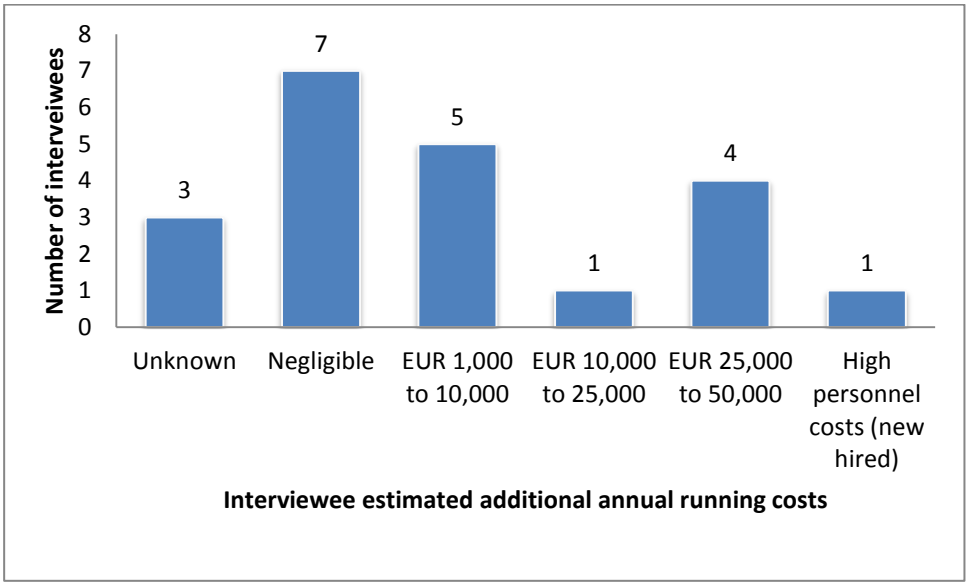
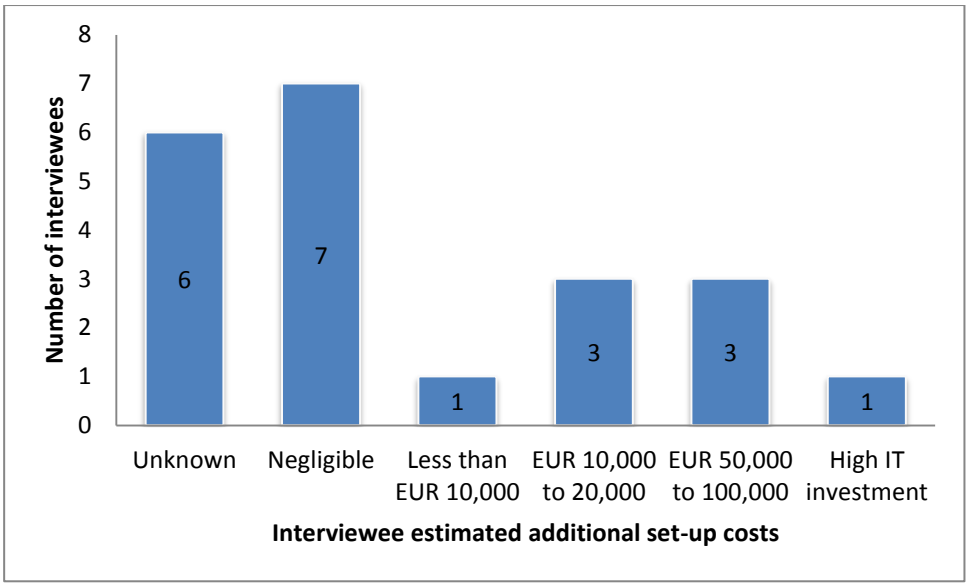


Figure 41 Interviewee estimated additional set-up costs for third party reporting



However, if the data are not available in the internal and automatic reporting systems at the required level (such as for example, costs of transport or margins at product level) this could imply higher set-up costs in order to generate a fairly automate system, while the additional running costs could be negligible if system is automated and a reporting system to third party is already established. The other way around, if systems is

[324] For the purpose of the graphical representation we have converted the responses based on FTE into annual labour costs on the basis of the hourly labour costs of country where the operator that the interviewee represented operates. The hourly labour costs were extracted from the Eurostat. We have used hourly labour cost from Eurostat (Labour cost levels by NACE Rev. 2 activity) by MS for "Professional, scientific and technical activities" for the last available year (2017). Overall, the difficulty in the interpretation of this figures arises for two sources. First, due to the large differences in hourly labour costs between MS; in some MS the costs are twice larger than in others. Second, 'negligible' costs reflect a perception of interviewees which likely depend on the size of the operator.

not automated this could lead to higher running costs driven by increased personnel costs needed to fulfil the reporting obligation.

Figure 42. Respondent estimated running costs of reporting to a third party by food chain stage (number of interviewees)

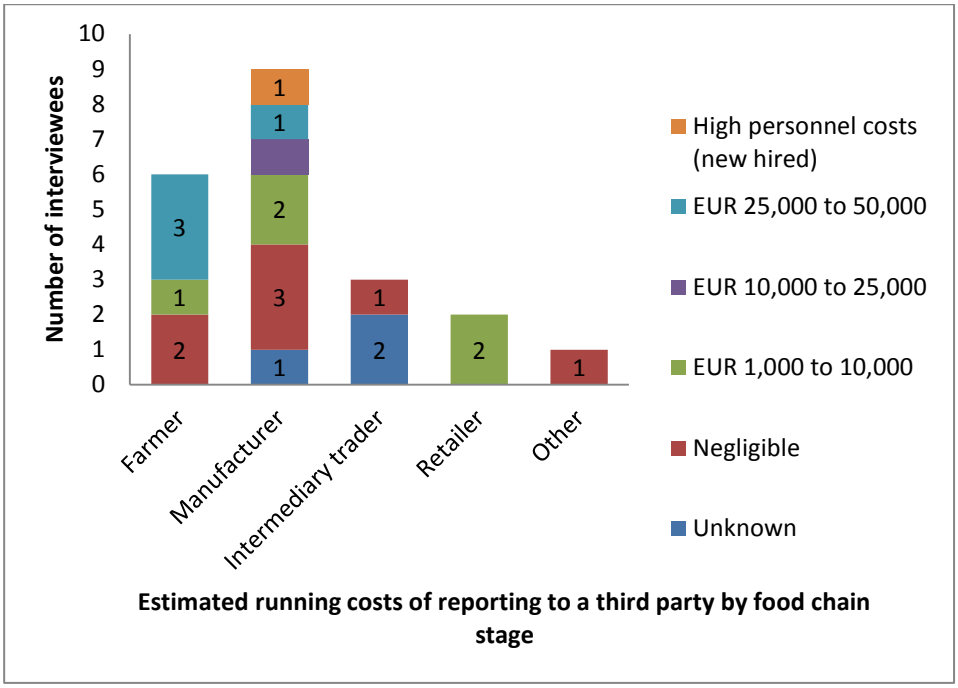
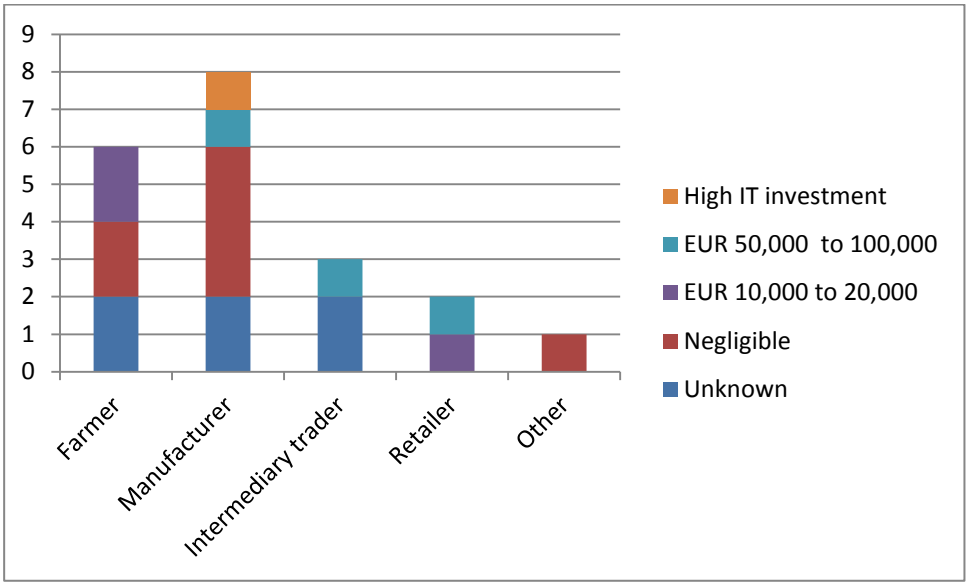


Figure 43. Respondent estimated set-up costs of reporting to a third party by food chain stage (number of interviewees)



Drivers of costs and constrains

The main drivers of the reporting costs to a third party are personnel and IT costs, which are also related to the complexity of the business in terms of number of products/ product types and processes through which the products go. Some interviewees commented that their accounting systems do not break costs by product but to broader product categories and only direct costs are automated. However, the majority of interviewees stressed that automatisation of data collection and aggregation can significantly reduce the reporting costs to operators.

Indeed, the majority of interviewees agree that the question of the costs of market transparency is not just a matter of the direct costs of reporting to a third party but there could be significant indirect costs, notably

- It might lead to the vulnerability of operators in the segments of the chain with established market transparent if other segments of the chain are not or less transparent (particularly in the downstream sector). The indirect costs relate to the risks caused by the imbalance of information, which may lead, among others, to disadvantages in negotiation over price and unfair domestic and international competition.
- In markets with limited number of actors there might emerge breach of data confidentiality.
- Although price transparency might provide important benchmark opportunities, it can also increase competition pressures causing, among others, that (e.g. farmers') prices decrease.

An important constrain mentioned by some interviewees is the product definition and methodology. Products have different sizes, qualities, composition and varieties that should be considered in the data collection methodology in order to provide information that make sense (e.g. to allow comparison across food chain segments) and in time.

Some interviewees stressed that often it is difficult / challenging to establish a link between the price (or margins) of the raw agricultural commodity and the price (or margins) of final processed products in the downstream segments, since products often undergo a complex transformation and distribution process. A suggested solution is to report (produce) indices of the final processed products with high (important) content of the agricultural commodity.

Also a number of interviewees mentioned the need to establish a quality control process to guarantee that everybody reports correct information, if information is correct all operators can benefit, otherwise some operators might loose from market transparency. Particularly, several interviewees stressed the opportunistic behaviour/strategic behaviour of operators in reporting to third party needs to be avoided. In this regard, the experience of some interviewed operators shows that quality control procedures to report to third party could be time consuming and thus costly (particularly in terms or personnel costs).

For some interviewees the reporting of input prices is sensitive and considered to be against competition rules.

In addition although a majority of respondent respondents agree that reporting of selling prices to third party is technically feasible and not costly since data are already very often reported to market governmental statistics and/or private market research companies, some interviewees indicated that individual selling prices are also sensitive since there can be risk of collusion in certain sectors.

Indeed transparency beyond prices and volumes seems to be technically / methodologically difficult to obtain/calculate and/or more costly. This is particularly relevant for margins (at product level) and transport costs. A full transparency on margins was considered by several interviewees to be sensitive (private) information from a competition point of view and is often perceived as divulging of trade secrets. In this line of argument it was suggested that it is not only a problem of feasibility but of desirability of sharing data, which depends largely on the country.

In particular, in segments of the chain where reporting to a third party is relatively extensive (i.e. in food supply stages were markets are relatively transparent usually for prices and volumes), some interviewees stressed that additional reporting requirement should not go beyond what it is already reported because what is already available is sufficient to ensure market transparency or costs are too high for reporting additional information (e.g. margins, transport costs). Further, some interviewees stressed the unbalanced reporting across different stages of the supply chain which puts those segments with a higher transparency in a disadvantageous competitive position visa-vie the segments with a lower transparency.

In summary, up to a certain limit market transparency is considered beneficial for benchmarking and understanding of the market if all segments of the chain are covered. In general, the costs of reporting information to a third party are not perceived as the most important costs, since information is usually available in the internal business information system, but often the indirect costs related to market risks (e.g. unbalanced or asymmetric information, competition pressures or disclosure of confidential information and trade secret) are often perceived as very significant by interviewees. Furthermore, for data to be useful there are concerns on guaranteeing quality and generating trust and ensuring knowledge transmission and training on how to use information.

Automatisation of reporting is perceived necessary by some interviewees in particular when the reporting frequency increases or is high because the reporting costs are positively correlated with the frequency of reporting and could be high if done manually due to the need to hire additional labour (i.e. high additional labour costs).

Finally, some interviewees call for a mandatory reporting and regulated at EU level (e.g. by European Commission) and not at Member State level.

5 Summary comments

In general, the online survey and the structured interviews provided consistent results in terms of the benefits and risks from the increased market transparency as well as operators' costs of reporting to a third party. However, there are also observed some differences due to the fact that the two data collection approaches cannot be straightforwardly compared due to the differences in the sample size as well as each approach has its advantage and allows obtaining qualitatively different type of information.

Both the online survey and the structured interviews confirm similarities in terms of the types of benefits and risks of increased price transparency along the agri-food supply chain as identified by respondents. For example, for benefits this include improvement of market knowledge, increase in opportunities for risk management (or better decision making), or reduction in uncertainty (or reduction in information asymmetry). For risks, the similar ones identified in the online survey and the structured interviews include confidentiality and security risks, higher competitive pressure and decrease of selling prices.

Apart from the price, respondents expressed that the availability of information on production volumes, consumption and trade volume might contribute to the increased market transparency along the agri-food supply chain. However, gross and net margins are most often reported factors of generating risk from increased market transparency among respondents. These results corroborate between the online survey and the structured interviews.

However, there could also be observed some differences in the types of benefits and risks of increased market transparency between the online survey and structured interviews. For example, respondents tended to stress some benefits of increased market transparency more in structured interviews than in the online survey such as that it can generate dialog, provide benchmark opportunities and enhance trust among operators in different stages of the chain. The structured interviews revealed additional benefits such as bringing unfair trade practices to the surface. For risks, respondents in the structured interviews stressed the risks of reporting inaccurate data which could be due to the strategic/ opportunistic behaviour of some operators or the lack of methodology and established product definitions to make it possible to compare across sectors and stages of the agri-food chain. Other important risk factor mentioned by some respondents in the structured interviews was the asymmetric reporting and the asymmetric data availability across different stages of the agri-food supply chain.

Further, the online survey suggest that more respondents expressed that they would benefit from the increased price transparency as compared to those that expressed that they would face risks. The online survey

results also show that a greater share of farmers would benefit from the increased price transparency as compared to operators from other stages of the chain. In contrast, manufacturers, traders & distributors and retailers appear to be more concerned about the risks from the increased price transparency as compared to farmers. Overall, the online survey reveals a greater share of respondents perceive to have a net benefit from the increased market transparency as compared to the share of respondents that perceive the opposite (i.e. net loss). Again, the share of farmers that report to have net benefits is greater that the share of those that report net loss from the increased market transparency, while more manufacturers, traders & distributors and retailers report the net loss than net benefits.

Many operators currently report various type information to a third party such as to a public authority, a private company or other agencies. Hence, there are in place existing reporting practices to a third party among operators. The results from the online survey show that the majority of respondents (73%) have annual running costs of reporting to a third party for the existing practices lower than 20% of the total annual running costs of the operators' reporting system. Translated in monetary values, the annual running costs amount to less than EUR 10,000 for majority of respondents (74%), for a significant portion of respondents (44%) they represent less than EUR 2,000, while for 19% they are less than EUR 100. Similar results based on the online survey hold for the set-up costs of reporting to a third party for the existing practices which are one time expenditures incurred to set-up the reporting system. That is, most respondents (87%) have the set-up costs of reporting to a third party lower than 20% of the total set-up costs of the operators' reporting system. In monetary values, the set-up costs represent less than EUR 10,000 for the majority of respondents (81%), for 63% of them they are lower than EUR 2,000, while for 31% they are lower than EUR 1,000.[325]

The actual reporting experience of operators' with the existing reporting practices to a third party might imply that the provided cost values are more accurate. However, there is a significant variation in the frequency and the type of information reported to a third party between respondents in the existing reporting practices which complicates their comparison between respondents. When respondents were asked in the online survey about the estimated costs for reporting all relevant information (i.e. input/output prices, volumes, transport costs and margins), the reported costs tended to be greater than those reported for the existing practices. That is, for 60% of respondents the estimated annual running costs of reporting to a third party are lower than EUR 10,000, while for 35% of respondents they are lower than EUR 1,000. Regarding the estimated set-up costs, for 59% of respondents they are lower than EUR 10,000, while for 35% of respondents they are lower than EUR 1,000.

The cost values obtained through the online survey for both the annual running and the set-up costs and for both the existing reporting practices and the estimated costs are positively correlated with the operator size meaning that larger operator have higher costs in absolute value than the smaller ones.

Further, the online survey results reveal that costs of reporting only input/output prices to a third party are considerably lower as compared to the total cost of reporting all relevant information beyond prices. That is, 80% (71%) of respondents reported that the estimated annual running (set-up) costs of reporting only input/output prices are less than 20% of the total estimated annual running (set-up) costs of reporting all relevant information to a third party.

The results on the costs of reporting to a third party obtained from the structured interviews are largely in line with the online survey. That is, based on information obtained through the structured interviews, the

[325] The monetary value of costs presented in this paragraph are calculated based on the data reported in Figure 30b and Figure 31b without taking in consideration respondents who did not known or did not provide annual running costs and total set-up costs of operators' reporting system. This is because the costs of operators' reporting system are required to calculate the monetary values of the reporting cost to a third party.

(running and set-up) costs of price reporting to a third party are usually considered as negligible, since these data are in most cases already available in the operators' internal reporting systems and many operators are already reporting this type of information to a third party. Similar appears to hold for reporting additional information to a third party such as production, trade and stocks. If these information is available in the internal company management system, their reporting to a third party would not imply sizable additional set-up or running costs.

Similar to the online survey, results of the structured interviews imply that the reporting beyond prices and volumes (e.g. production, trade, stocks) seems to be more costly. This is particularly relevant for margins and transport costs.

Results from structured interviews reveal that the automatisation of reporting is perceived necessary to reduce reporting costs in particular when the reporting frequency is high because the reporting costs are positively correlated with the frequency of reporting. In contrast, manual reporting with higher frequency would imply employing additional labour causing a significant increase in reporting costs.

The structured interviews show some further interesting implications for the costs and benefits of increased market transparency. Some interviewees stressed that the (direct) costs of reporting information to a third party are not perceived as the most important costs, since information is usually available in the internal operators' system, but often the indirect costs related to market risks (e.g. unbalanced or asymmetric information, competition pressures or disclosure of confidential information and trade secret) are often perceived as more significant.

15 Annex VIII - Administrative burden

15.1 EU Standard Cost Model

According to Toolbox 60 of the better regulation guidelines[326], administrative costs are costs incurred by enterprises, the voluntary sector, public authorities and citizens in meeting legal obligations to provide information on their activities, and it stipulates that whenever a measure is likely to impose significant administrative costs, the 'EU Standard Cost Model' should be applied to assess the net cost of information obligations imposed by EU legislation. Therefore, to ascertain whether the preferred option for increasing market transparency in the FSC imposes significant administrative costs, in the following the EU Standard Cost Model is applied.

With Implementing Regulation (EU) 2017/1185 as the regulatory origin, the preferred option requires the reporting of market data on prices and quantities of products sold and bought. For the FSC operators concerned, this implies the one-off need to expand or introduce systems to record the required data and the recurrent (weekly or monthly) need to submit it to competent authorities, while these authorities need to adapt the existing reporting system (ISAMM). The target group of FSC operators is a sample of sellers and buyers of a defined list of agri-food products that is to be determined by MSs to deliver representative market data (and in determining their sampling, MSs should duly avoid putting a burden on SMEs and aim for cost-effective solutions).

For estimating the administrative burden, the following assumptions were used: Per MS whose respective production is bigger than two percent of the total production of the EU27, three sellers of dairy; meat; eggs; oilseeds, protein crops, oilmeals & oils; olive oil & table olives; cereals & rice; sugar & ethyl alcohol; fruit & vegetables (F&V); processed F&V; and wine – as well as three buyers from retail and industry – have to report the specified market data. Potentially these can be the same operators that are already reporting under Implementing Regulation (EU) 2017/1185. Moreover, some MSs have monitoring systems in place that collect the required data already. In these latter two cases no additional administrative burden is imposed. Available data was then used to estimate EU costs. In particular, the cost estimates for operators were taken from a study by the Joint Research Centre (JRC), while the costs for national administrations were derived in a standardised manner by using the Excel report sheet specified in Toolbox 60.

15.2 Estimated costs to operators and Member States

The JRC has carried out a study on costs to operators in the agri-food supply chain[327], which was used to estimate the administrative burden to operators of the preferred option. The JRC used both an online survey and structured interviews to elicit estimated (additional) set-up costs of reporting to a third party as well as (additional) annual running costs for given cost ranges. Taking middle values of the ranges produces average estimated one-off cost for setting up a reporting system of EUR 20,516 and average estimated running costs of EUR 254 per week, which were used in the Excel report sheet of Toolbox 60 (Table 9). Given that MSs should aim at cost-effectiveness when defining their methodology, in their sampling strategy MSs could focus on operators whose reporting costs are below average costs, i.e. using average costs for the estimation of operators costs is a conservative approach.

[326] EC, 2019, Better Regulation Toolbox 60, https://europa.eu/!cH79Hk.

[327] See Annex VII.

Given that the initiative to increase market transparency in the food supply chain will simply expand the range of market data that are already collected under Implementing Regulation (EU) 2017/1185, which is implemented through the Commission's ISAMM that MSs already use, no significant additional set-up or running costs are expected for MSs[328]. The costs for defining the sampling, for the additional quality checking and data processing, for the training of staff, and for staff participation in coordination activities at EU level were computed directly in the Excel report sheet of Toolbox 60 using the hourly earnings of ISCO3 (technicians and associate professionals).

[328] Because there is only a *marginal* cost for expanding an existing data collection effort and not an absolute cost for setting up a new system, absolute cost estimates from the literature could not be used. For broader context, the Farm Accountancy Data Network (https://europa.eu/!Mw63kH), an extensive farm level survey conducted across the EU, has been estimated to have absolute public costs of about €58 million (https://europa.eu/!QB33yv).

Table 9 - Estimated costs to operators and Member States

Amendment of Implementing Regulation (EU) 2017/1185 to improve market transparency in the food supply chain				Tariff (€/h)	Time (min.)	Price (per action)	Frequency (per year)	Entities (no.)	Actions (total no.)	Total Administrative Costs
No.	Type of obligation	Description of required actions	Target group							
1	Notification of (specific) activities or events	Producing new data	MSs	23	1,316	416	0.05	27	1	562
2	Certification of products or processes	Inspecting and checking (incl. assistance to inspections)	MSs	23	164	52	52	27	1,404	73,030
3	Submission of (recurring) reports	Submitting the information (sending it to designated recipients)	MSs	23	27	9	52	27	1,404	12,172
4	Submission of (recurring) reports	Retrieving relevant information from existing data	MSs	23	82	26	52	27	1,404	36,515
5	Cooperation with audits & inspections	Holding meetings	MSs	23	960	371	2	27	54	20,057
6	Submission of (recurring) reports	Familiarising with the information obligation	MSs	23	240	93	0.5	27	14	1,254
7	Non labelling information for third parties	Buying (IT) equipment & supplies	Operators			20,516	0.05	270	13	276,689
8	Non labelling information for third parties	Submitting the information (sending it to designated recipients)	Operators			254	52	270	14,026	3,562,594
									Total administrative costs (€)	**3,982,872**

16 Annex IX - Existing and proposed data collection on agri-food products

Sector	Implementing Regulation (EU) 2017/1185	Addition to the regulation *	Covered by ISAMM forms
Annex I (weekly prices)			
Cereals	Relevant cereals (common & durum wheat, barley, oats, rye, maize) & qualities	SP organic cereals BP wheat Flour	Wheat & rye flour, durum semolina; organic: common & durum wheat, rye; food industry, retail
Rice	Paddy rice		
Olive oil	Extra virgin, virgin, lampante, refined, composed, crude olive-pomace, refined olive-pomace oil, olive-pomace oil	SP organic olive oil BP olive oil per category	Organic: virgin, extra virgin; retail: virgin, extra virgin
F&V	Tomatoes, apricots, nectarines, peaches, table grapes, pears, apples, satsumas, lemons, clementines, mandarins, oranges, courgettes, cherries, cucumbers, garlic, plums, sweet peppers, lettuces, strawberries, cultivated mushrooms, kiwis	SP organic fresh F&V BP representative F&V	Organic: apples, oranges, tomatoes; retail, food industry: apples, oranges, peaches, nectarines, tomatoes, tomato concentrate
Bananas	Yellow bananas		
Meat	Beef, pig & sheep carcasses, live animals	SP beef cuts (hindquarter, forequarter, minced meat), pig cuts (loin, belly, shoulder, ham, minced meat), organic BP minced meat (pig, beef)	Beef cuts: hindquarter as such & reconstituted, forequarter as such & reconstituted; organic: beef carcasses; retail, food industry: minced meat (beef, pig)
Milk	Whey powder, skimmed & whole milk powder, butter, commodity cheeses	SP cream, drinking milk, organic BP butter, cheese	Mozzarella; cream, drinking milk; organic: drinking milk; retail, food industry: butter, cheese
Eggs	Class A eggs cage or barn	SP per type of eggs	Eggs free-range hens, eggs organic hens
Poultry	Class A chickens	SP chicken cuts, organic chicken BP chicken	Breast, legs; organic: whole chicken; retail: whole chicken, breast
Oilseeds & protein crops		SP oilseeds, oil meals, protein crops, oils, organic, non-GM	Rapeseed, sunflower seed, soya bean, rapeseed meal, sunflower seed meal, soya meal, field peas, field beans, lupines, chickpeas, lentils, rape oil, sunflower oil, soya bean oil; organic, non-GM: soya bean, soya meal
Sugar		BP sugar	Retail, food, biofuel
Annex II (non-weekly prices)			
Sugar	Monthly: white sugar (based on invoices, contract date not specified), sugar beet	Shorter time period (15th)	Contracts in notification month & prior notification month
Flax fibre	Monthly: long flax-fibre		
Wine	Monthly prices & yearly information sources: wine varieties (Annex VII Regulation (EU) 1308/2013)	SP wine per variety/type, organic	Wine: bulk, bottled, sparkling, red, white; organic: wine
Milk	Monthly: price of raw milk, price of non-commodity cheeses	Shorter time period (15th) SP organic, PDO/ PGI	Organic: raw milk SP PDO / PGI cheeses
F&V		SP processed F&V	SP apple & orange juice, tomato concentrate, canned tomatoes
Meat		SP ham other than commodity	SP PDO / PGI hams
Annex III (production & market information)			
Rice	Yearly: area, yield, production, stocks		
Sugar	Yearly: beet areas, sugar, bioethanol & isoglucose production; monthly: sugar & isoglucose stocks		
Fibre crops	Yearly: fibre flax area & production, planted cotton area, unginned cotton production, average unginned cotton price		

Hops	Yearly: number of farmers growing hops, area planted, quantity in tonnes sold & average farm gate price under forward contract, alpha-acid production in tonnes & alpha-acid content (%)		
Olive oil	Yearly: production, consumption, stocks	Organic production	Organic production virgin & extra virgin
Bananas	Triannually: average selling price & quantity of green bananas		
Tobacco	Yearly, per variety: number of farmers, area in hectares, quantity delivered in tonnes, average price paid to farmers		
Wine	Yearly: estimates of production, definitive result of production, summary of the stock declarations, final balance sheet		
Milk	Monthly: production of raw milk	Production Organic production	Fat-filled milk powder, organic raw milk
Eggs	Yearly: production sites	Production	Monthly: eggs in shell for cage, free-range & organic production
Ethyl alcohol	Yearly: production by fermenting & distilling (by agricultural raw material), volumes transferred from alcohol producers or importers for processing or packaging (by use: food & beverage, fuel, industrial/other)		
Meat		Production	Weekly: number of heads slaughtered & weight (beef, pig)
F&V		Stocks, production	Monthly: apples, pears; yearly: processed tomatoes

* Note: SP = selling price, BP = buying price.

17 Annex X - Market transparency in the FSC: Sector information on key sectors

In terms of data coverage of the EU's MIS, the AMTF called for the Commission's data systems to include data for trends in demand (among others for high quality, local, organic, or high animal welfare standard products[329]), for including market information from the processing and retail stages of the FSC, and a recommendation is made in the AMTF report for prioritising products in the dairy, F&Vs, and meat sectors.

The underlying structure of production of the different agricultural products in each sector has implications for the key needs in terms of MT: 'different products create different chains'[330]. In some supply chains there is a high degree of product homogeneity (little differentiation on type and quality); there are operating futures markets (giving information on market expectations on future price developments, typically up to a year); there are efficient buyers markets (many buyers competing for the product); and an overall relatively high degree of MT in the EU market, including in the type of public information already existing. This is, for example, the case with the wheat market and cereals markets more generally. Other supply chains have more complex product types, little development of futures markets, high levels of concentration in buyers markets; and a relatively low level of MT in the EU market.

For some products the costs of adjusting underlying production decisions are high in the short and long run (such as livestock and perishable multiannual crops), and sectors producing such products may require information that is different from sectors where changes in production decisions imply relatively low costs (see table 6).

Table 6 - Degree of rigidity and producer decisions on quantities to produce[331]

Product type	Short run rigidity	Long run rigidity	Examples
Livestock and perishable multiannual crops	High	High	Meat, dairy, peaches, grapes
Perishable annual crops	High	Low	Tomatoes
Storable multiannual crops	Low	High	Apples, almonds
Storable annual crops	Low	Low	Cereals, beans, peas, nuts

In the open public consultation, when respondents were asked about the sectors where enhancing MT would be most useful, the 'meat', 'dairy', and 'F&V' sectors received most responses, followed closely by 'arable crops'. These were then followed by 'wine', 'olive oil', and other sectors (in the additional comments on which 'other sectors' should be covered, a range of complementary sectors or more specific sub-sectors was mentioned, like poultry, eggs, fish, sugar, honey, 'tropical fruits', etc., as well as 'all sectors').

The different sectoral supply chains within the FSC (meat, dairy, fruit & vegetable, cereals, protein crops, etc.) all have their own structure and particularities. Different market structures in the different supply chains deserve a differentiated treatment in terms of MT, which seeks to increase the benefits for each sector, including through better conditions for competition, while mitigating the potential costs[332].

[329] Niche markets with, typically, high-growth profiles.

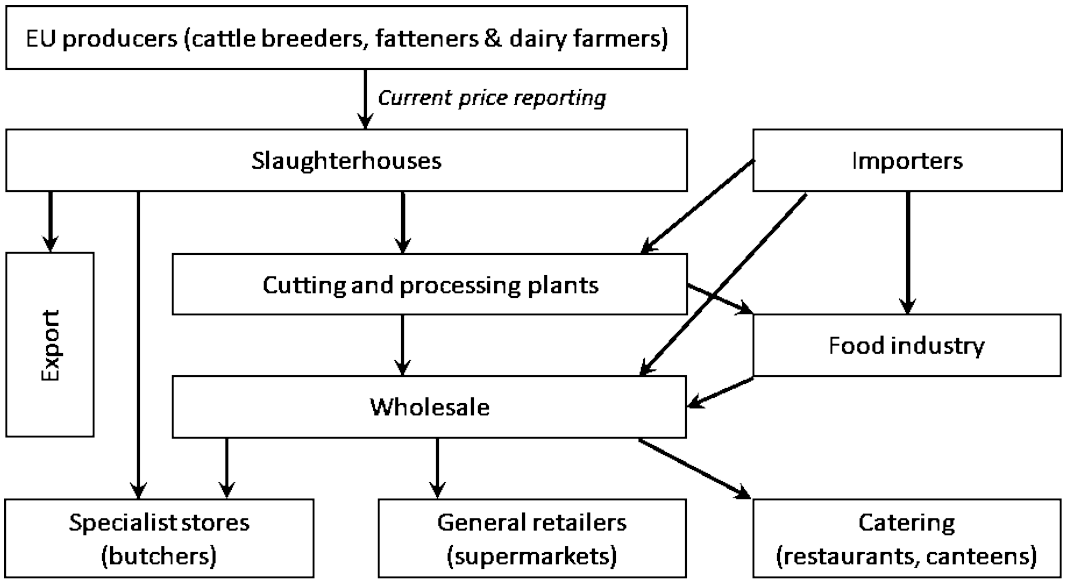
[330] OECD, 2014, Competition issues in the food chain industry, http://oe.cd/2xJ.

[331] Adapted from Mathijs E., 2018, Presentation of the SUFISA conceptual model, http://www.sufisa.eu/.

[332] Molnár A. et al., 2013, Price transparency for fair competition, http://doi.org/10.1007/978-94-007-6274-9_13; Baltussen W. et al., 2019, Monitoring of prices and margins, http://doi.org/10.2760/197814.

17.1 Beef supply chain

17.1.1 Flowchart of the sector



17.1.2 Data on the sector

According to the latest available farm structure statistics (from 2013),[333] the dataset on livestock[334] indicates that among all farm types in the EU, 2.3 million holdings were holding cattle, while the economic accounts for agriculture show that in 2017 in the EU the production value of cattle at basic price was EUR 35.0 billion.[335].

And according to the Commission's short-term outlook for EU agricultural markets,[336] in 2017 the total cattle herd in the EU had a size of 88.4 million heads (against a five-year average of 88.6 million), and the total herd of suckler cows was 12.3 million heads. The net bovine production of the EU in 2017 was 27.0 million heads (against a five-year average of 26.5 million), which gave 7.9 million tonnes at an average carcass weight of 292 kg/head.

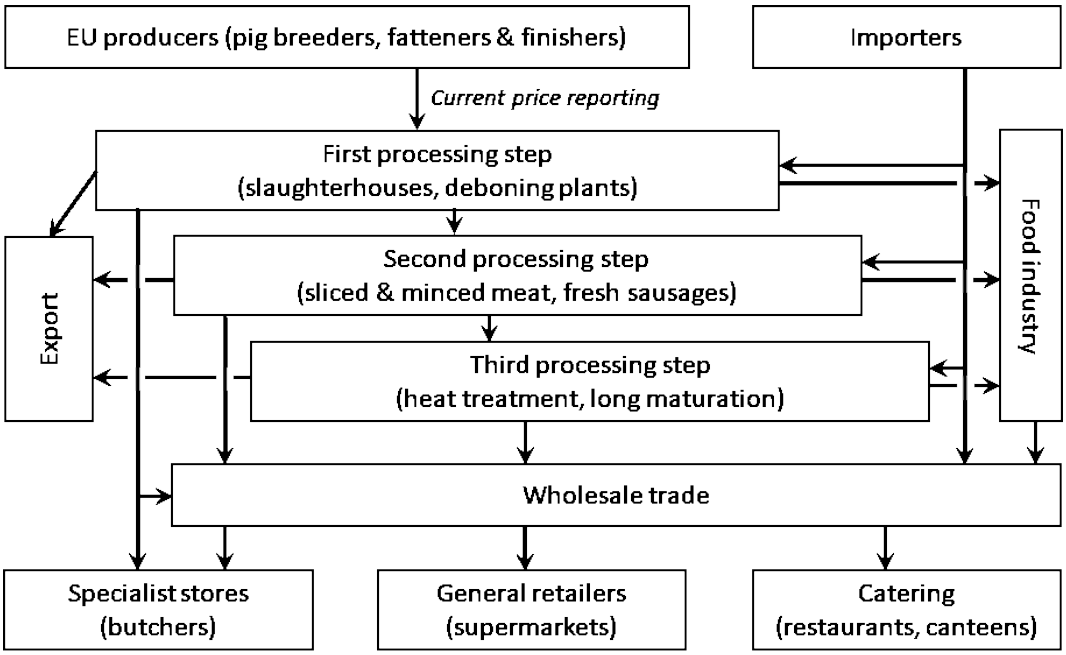
The EU production of beef and veal in 2017 was 8.1 million tonnes (carcass-weight equivalent) and consumption was 7.9 million tonnes (taking into account the import and export of live animals and meat). This amounts to a per-capita consumption of 10.8 kg of beef and veal in the EU, and it represents a self-sufficiency rate of 103%.

Data on subsequent stages of the supply chain are scarcer. According to Eurostat, in 2007 there were 43,000 enterprises in the EU that were involved in the production, processing, and preserving of meat and meat products (not just of beef) and that generated a turnover of EUR 190 billon.[337]

[333] EC, 2015, Farm structure statistics, http://europa.eu/!Jw67NJ.
[334] EC, 2017, Number of farms and heads of animals, http://europa.eu/!uf73hP.
[335] EC, 2019, Economic accounts for agriculture, http://europa.eu/!VX48yC.
[336] EC, 2019, EU balance sheets and production details, http://europa.eu/!ub48NQ.
[337] EC, 2016, Enterprise statistics on manufacturing, http://europa.eu/!XB74VG.

17.2 Pork supply chain

17.2.1 Flowchart of the sector



17.2.2 Data on the sector

According to the latest available farm structure statistics (from 2013),[338] the dataset on livestock[339] indicates that among all farm types in the EU, 2.2 million holdings were holding pigs, while the economic accounts for agriculture show that in 2017 in the EU the production value of pigs at basic price was EUR 37.9 billion.[340].

In addition, according to the Commission's short-term outlook for EU agricultural markets,[341] in 2017 the total number of live pigs in the EU was 150 million heads (against a five-year average of 148 million), and the total number of breeding sows was 12.2 million heads. The net pork production of the EU in 2017 was 259 million heads (against a five-year average of 257 million), which gave 23.7 million tonnes at an average carcass weight of 91.5 kg/head.

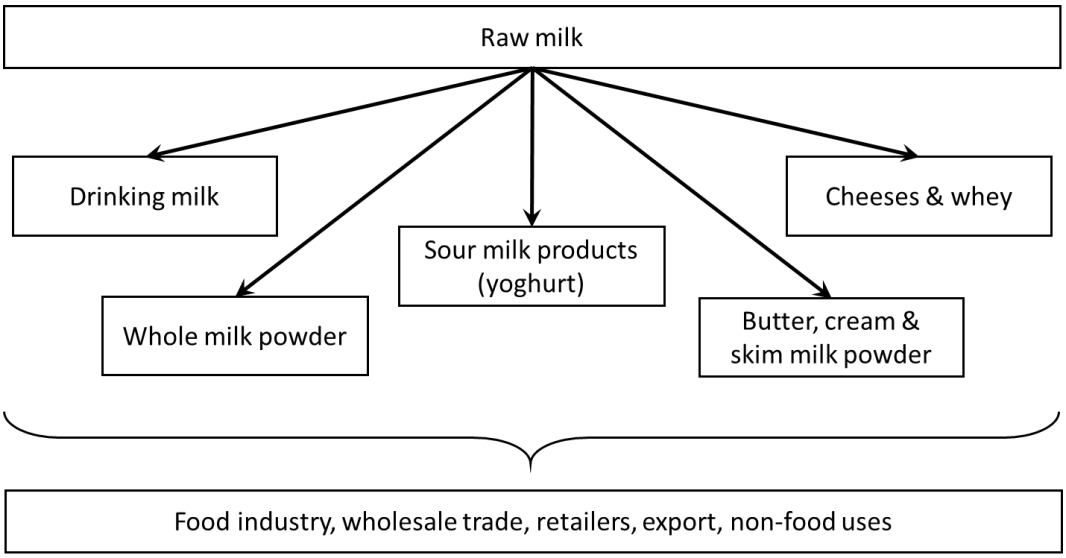
The EU production of pork in 2017 was 23.7 million tonnes (carcass-weight equivalent) and consumption was 21.1 million tonnes (taking into account the import and export of live animals and meat). This amounts to a per-capita consumption of 32.2 kg of pork in the EU, and it represents a self-sufficiency rate of 112%.

Data on subsequent stages of the supply chain are scarcer. According to Eurostat, in 2007 there were 43,000 enterprises in the EU that were involved in the production, processing, and preserving of meat and meat products (not just of pork) and that generated a turnover of EUR 190 billon.[342]

[338] EC, 2015, Farm structure statistics, http://europa.eu/!Jw67NJ.
[339] EC, 2017, Number of farms and heads of animals, http://europa.eu/!uf73hP.
[340] EC, 2019, Economic accounts for agriculture, http://europa.eu/!VX48yC.
[341] EC, 2019, EU balance sheets and production details, http://europa.eu/!ub48NQ.
[342] EC, 2016, Enterprise statistics on manufacturing, http://europa.eu/!XB74VG.

17.3 Dairy supply chain

17.3.1 Flowchart of the sector



17.3.2 Data on the sector

According to the latest available farm structure statistics (from 2013),[343] the dataset on livestock[344] indicates that among all farm types in the EU, 1.5 million holdings were holding dairy cows, while the economic accounts for agriculture show that in 2017 in the EU the production value of milk at basic price was EUR 59.4 billion.[345].

And according to the Commission's short-term outlook for EU agricultural markets,[346] in 2017 the total number of dairy cows in the EU was 23 million heads (against a five-year average of 23 million), cow milk production was 166 million tonnes, and cow milk deliveries to dairies were 156 million tonnes (against a five-year average of 151 million), with a milk yield of 7,080 kilograms per cow.

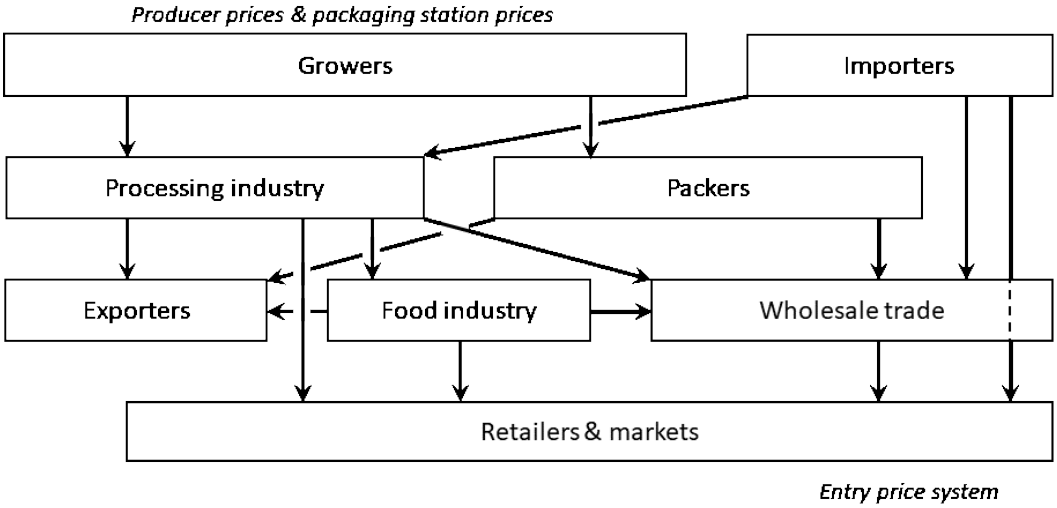
In 2017 the EU production of fresh dairy products was 45.9 million tonnes. Domestic use of fresh dairy products was 44.8 million tonnes, which represents a per-capita consumption of 87.8 kilograms and a self-sufficiency rate of 102%. EU production of cheese in dairies was 9.9 million tonnes, of which 0.9 million tonnes were from other milk than cow's milk; domestic use was 9.5 million tonnes, which represents a self-sufficiency rate of 108%. EU production of butter was 2.3 million tonnes; domestic use was 2.2 million tonnes, which represents a per-capita consumption of 4.3 kilograms and a self-sufficiency rate of 106%. EU production of skimmed (whole) milk powder was 1.5 (0.7) million tonnes; domestic use was 0.8 (0.4) million tonnes, which represents a self-sufficiency rate of 192% (210%).

Data on subsequent stages of the supply chain are scarcer. According to Eurostat, in 2007 there were 13,000 enterprises in the EU that were involved in the manufacture of dairy products and that generated a turnover of EUR 130 billon.[347]

[343] EC, 2015, Farm structure statistics, http://europa.eu/!Jw67NJ.
[344] EC, 2017, Number of farms and heads of animals, http://europa.eu/!uf73hP.
[345] EC, 2019, Economic accounts for agriculture, http://europa.eu/!VX48yC.
[346] EC, 2019, EU balance sheets and production details, http://europa.eu/!ub48NQ.
[347] EC, 2016, Enterprise statistics on manufacturing, http://europa.eu/!XB74VG.

17.4 Fruit & vegetables supply chain

17.4.1 Flowchart of the sector



17.4.2 Data on the sector

According to the latest available farm structure statistics (from 2013),[348] the dataset on arable crops[349] indicates that 920,000 holdings cultivated fresh vegetables, melons and strawberries on 1.6 million hectares, while the dataset on fruit and berry plantations[350] indicates that 1.4 million holdings cultivated fruits and berries on 2.5 million hectares. The economic accounts for agriculture show that in 2017 in the EU the production value of vegetables and horticultural products at basic price was EUR 55.1 billion, and that of fruits was EUR 26.3 million.[351]

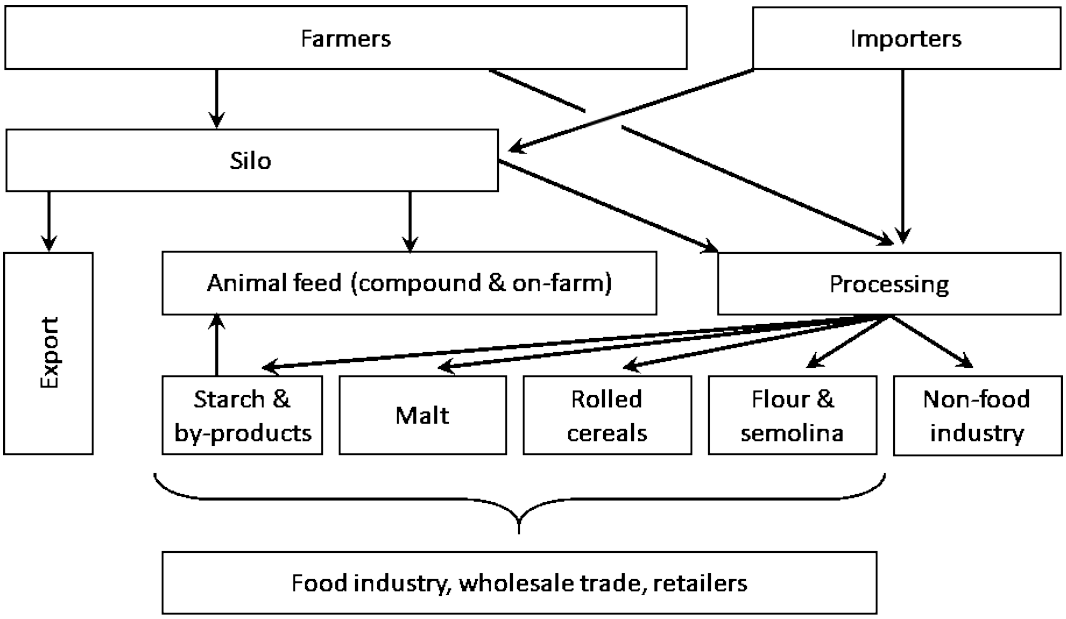
According to Eurostat, in 2016 fresh vegetables (including melons) and strawberries were produced on 2.3 million hectares, yielding 66 million tonnes, whereas fruits, berries and nuts (excluding citrus fruits, grapes and strawberries) were produced on 2.6 million hectares, yielding 26 million tonnes.[352]

Data on subsequent stages of the supply chain are scarcer. According to Eurostat, in 2007 there were 10,000 enterprises in the EU that were involved in the processing and preserving of fruit & vegetables that generated a turnover of EUR 58 billon.[353]

[348] EC, 2015, Farm structure statistics, http://europa.eu/!Jw67NJ.
[349] EC, 2017, Number of farms and areas of different arable crops, http://europa.eu/!Ph34HQ.
[350] EC, 2017, Number of farms and areas of fruit and berry plantations, http://europa.eu/!xk64NJ.
[351] EC, 2019, Economic accounts for agriculture, http://europa.eu/!VX48yC.
[352] EC, 2019, Crop production in EU standard humidity, http://europa.eu/!XU67Ht.
[353] EC, 2016, Enterprise statistics on manufacturing, http://europa.eu/!XB74VG.

17.5 Cereals supply chain

17.5.1 Flowchart of the sector



17.5.2 Data on the sector

According to the latest available farm structure statistics (from 2013),[354] the dataset on arable crops[355] indicates that 5.5 million holdings cultivated cereals on 58 million hectares, while the economic accounts for agriculture show that in 2017 in the EU the production value of cereals at basic price was EUR 46.0 billion.[356]

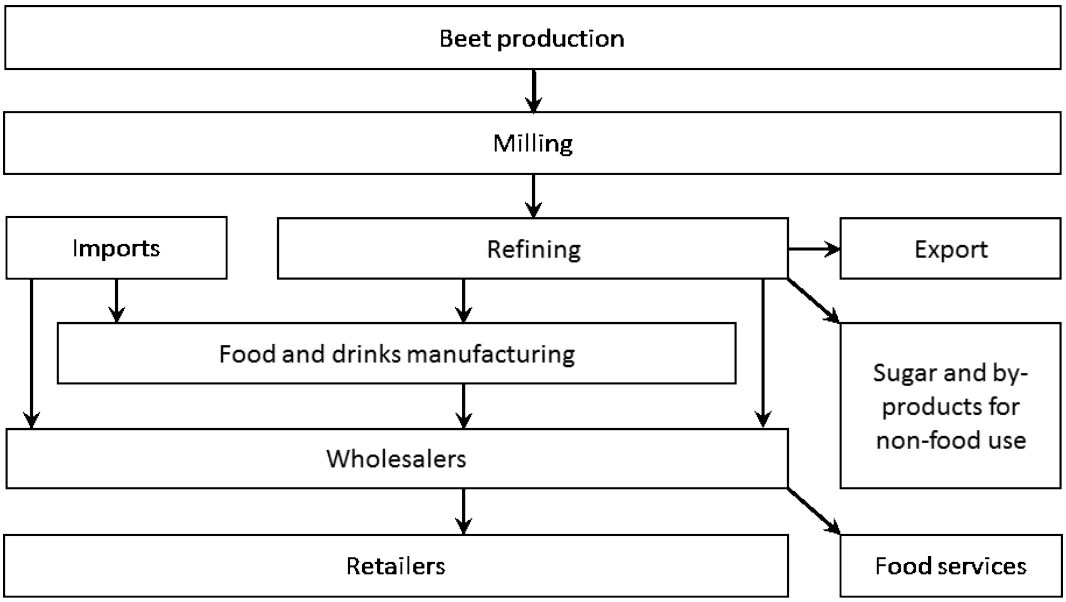
And according to the Commission's short-term outlook for EU agricultural markets,[357] in 2017 the total cereal area in the EU was 55.5 million hectares (against a five-year average of 57.0 million), and total gross production was 310 million tonnes (against a five-year average of 312 million), at an average cereal yield of 5.6 tonnes per hectare. Domestic use was 283 million tonnes (of which 173 million for animal feed, and 66 million for human consumption). This represents a self-sufficiency rate of 109%.

Data on subsequent stages of the supply chain are scarcer. According to Eurostat, in 2007 there were 7,700 enterprises in the EU that were involved in the manufacture of grain mill products, starches and starch products that generated a turnover of EUR 38 billon.[358]

[354] EC, 2015, Farm structure statistics, http://europa.eu/!Jw67NJ.
[355] EC, 2017, Number of farms and areas of different arable crops, http://europa.eu/!Ph34HQ.
[356] EC, 2019, Economic accounts for agriculture, http://europa.eu/!VX48yC.
[357] EC, 2019, EU balance sheets and production details, http://europa.eu/!ub48NQ.
[358] EC, 2016, Enterprise statistics on manufacturing, http://europa.eu/!XB74VG.

17.6 Sugar

17.6.1 Flowchart of the sector



17.6.2 Data on the sector

According to the latest available farm structure statistics (from 2013),[359] the dataset on sugar beet[360] indicates that 156,000 holdings cultivated sugar beet on 1.58 million hectares, while the economic accounts for agriculture show that in 2017 in the EU the production value of sugar beet at basic price was EUR 3.9 billion.[361]

And according to the Commission's short-term outlook for EU agricultural markets,[362] in 2017 the total sugar beet area in the EU was 1.75 million hectares (against a five-year average of 1.58 million), and total gross production was 143 million tonnes (against a five-year average of 119 million), at an average cereal yield of 81.6 tonnes per hectare. Domestic use of white sugar was 18.6 million tonnes. This represents a self-sufficiency rate of 113%.

Data on subsequent stages of the supply chain are scarcer. According to Eurostat, in 2007 there were 283 enterprises in the EU that were involved in the manufacture of sugar, which generated a turnover of EUR 15.4 billon.[363]

[359] EC, 2015, Farm structure statistics, http://europa.eu/!Jw67NJ.
[360] EC, 2017, Number of farms and areas of different arable crops, http://europa.eu/!Ph34HQ.
[361] EC, 2019, Economic accounts for agriculture, http://europa.eu/!VX48yC.
[362] EC, 2019, EU balance sheets and production details, http://europa.eu/!ub48NQ.
[363] EC, 2016, Enterprise statistics on manufacturing, http://europa.eu/!XB74VG.