European Commission

JRC TECHNICAL REPORTS

Market transparency: Costs of external data reporting by private operators in the EU agri-food supply chain

A survey-based analysis

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2019

Joint Research Centre

EUR 29794 EN

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EU Science Hub
https://ec.europa.eu/jrc

JRC116927

EUR 29794 EN

PDF ISBN 978-92-76-08790-8 ISSN 1831-9424 doi:10.2760/210466

Luxembourg: Publications Office of the European Union, 2019

How to cite this report: Solano-Hermosilla, G., P. Ciaian and J. Kathage, *Market transparency: Costs of external data reporting by private operators in the EU agri-food supply chain – A survey-based analysis*, EUR 29794 EN, Publications Office of the European Union, Luxembourg, 2019, ISBN 978-92- 76-08790-8, doi:10.2760/210466, JRC116927

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Acknowledgements

We would like to thank all participating operators, organisations and individuals from the private sector who provided their responses to the online questionnaire and structured interviews. Without their contribution this report could not have been completed. We would also like to thank Bruno Buffaria (HoU), Marcelo Lima, Fabien Santini, Oliver Sitar, Alexander Stein from the Directorate-General for Agriculture (DG AGRI) and Federica Di Marcantonio, Pedro Andrés Garzón Delvaux and Jesús Barreiro Hurle from JRC for their comments on the questionnaire and on an earlier version of this report. We thank Giampiero Genovese, Head of Economics of Agriculture Unit, for his continuing support and additional input to the production of this report.

Executive summary

Market transparency in the agri-food supply chain has been subject to intensive analysis in scientific literature and has recently been under renewed policy attention in the EU. The Agricultural Markets Task Force (AMTF), established in January 2016, recommended that '[the] Commission should take further steps to increase market transparency so as to foster effective conditions of competition along the supply chain'. Following the AMTF recommendations, in May 2019 the Commission published a proposal for regulation to increase price transparency in the food supply chain.

This report contributes to the discussion on market transparency by presenting findings on estimates by operators (i.e. companies or businesses in primary production, distribution, processing, wholesale or retail stages) in EU agri-food supply chains, of the costs of providing information to a third party (public authority, private company and/or other agency type) in order to comply with a reporting obligation to help improve market transparency. These are mainly personnel and IT costs for data gathering and processing, internal or external auditing (if required), and dissemination of information. However, these costs exclude the cost of preparing and presenting information that is also used for management purposes. The secondary objective of this report is to analyse potential benefits and risks from increased market transparency, as perceived by operators in the agri-food supply chain. The analyses are based on an online survey and structured interviews conducted among operators in the agri-food supply chain between 23 October 2018 and 5 February 2019.

In general, the online survey and structured interviews provided consistent results in terms of benefits and risks from increased market transparency, as well as operators' costs for reporting to a third party.

Overall, the results show that more respondents expressed that they would benefit from increased price transparency along the agri-food supply chain than those that expressed that they would face risks. The main benefits identified by respondents include improvement in market knowledge, increase in opportunities for risk management (or better decision-making), and reduction in uncertainty (or reduction in information asymmetry). The main risks include confidentiality and data security risks, higher competitive pressure and decrease in selling prices. Besides price information, respondents expressed that availability of information on production volumes, consumption and trade volume could contribute to increased market transparency along the agri-food supply chain. Meanwhile, gross and net margins are the factors most often reported by respondents as generating risk from increased market transparency.

The findings for the costs of reporting to a third party show that, for the majority of respondents (73 %), annual running costs for reporting to a third party under existing practices are less than 20 % of the total annual running costs of the operator's internal reporting system. In monetary values, the annual running costs for reporting to a third party amount to less than EUR 10 000 for the majority of respondents (74 %); for a significant proportion of respondents (44 %) they represent less than EUR 2 000, and for 19 % they are less than EUR 100. In terms of set-up costs for reporting to a third party, for most respondents (87 %), costs under existing practices are less than 20 % of total set-up costs for the operator's internal reporting system. In monetary values, the set-up costs represent less than EUR 10 000 for the majority of respondents (81 %), for 63 % they are less than EUR 2 000, and for 31 % they are less than EUR 1 000.

Estimated costs for reporting all relevant information (i.e. input/output prices, volumes, transport costs and margins) to a third party – which usually goes beyond what is reported under existing practices – tend to be greater than those for existing reporting practices. That is, for 60 % of respondents estimated annual running costs for reporting to a third party are less than EUR 10 000, while for 35 % of respondents they are less than EUR 1 000. With respect to estimated set-up costs, for 59 % of respondents they are less than EUR 10 000, while for 35 % of respondents they are less than EUR 1 000. However, estimated costs for reporting only input/output prices to a third party are considerably lower than the cost of also reporting information beyond prices: 80 % (71 %) of

respondents reported that estimated annual running (set-up) costs for reporting only input/output prices are less than 20 % of total estimated annual running (set-up) costs for reporting all relevant information to a third party.

Cost values for reporting to a third party are positively correlated with operator size, meaning that larger operators have higher costs in absolute value than smaller ones. Automation of reporting is perceived as necessary to reduce reporting costs. Finally, an important consideration is that direct costs for reporting information to a third party are not always perceived by respondents as the most important costs; indirect costs related to market risks induced by increased market transparency could often be greater.

Market transparency: Costs of external data reporting by private operators in the EU agri-food supply chain

A survey-based analysis ([1])

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1 Introduction

Market transparency in the agri-food supply chain has been the subject of intensive analysis in scientific literature and has recently been under renewed policy attention in the EU. The availability of accurate information reduces information asymmetries and allows market participants to make informed decisions about consumption and production, which is expected to lead to more efficient functioning of markets. Transparency is particularly relevant for the agri-food supply chain, due to increasingly complex organisation and governance of interactions between agents in the chain, and the need to satisfy consumers' changing demand for food. This is reinforced by the recent concerns about the volatility of agricultural commodity prices and food price shocks (e.g. in 2007-2008) among market participants, governments and international organisations (FAO, 2011; Trienekens et al., 2012; AMTF, 2016a; Baltussen et al., 2019; Ménard, 2019).

Generally, transparency in the agri-food supply chain can be defined as '… the extent to which all [its] stakeholders have a shared understanding of, and access to, the product-related information that they request, without loss, noise, delay and distortion' (Hofstede, 2003). The Agricultural Markets Task Force (AMTF) defines market transparency '… as the availability of relevant market information to market participants … [This includes] prices, weather, production … and stocks' (AMTF, 2016a). The literature shows that improved market transparency may contribute to and/or have potential impacts on a variety of issues, such as consumer food choices and trust (e.g. Møllgaard and Overgaard, 1999; Meuwissen et al., 2003; Martin, Borah and Palmatier, 2017); product differentiation (e.g. Schultz, 2004); improvement of market efficiency (e.g. Hueth and Marcoul, 2006; Pendell and Schroeder, 2006; Jensen, 2010; Koontz and Ward, 2011); competition and reduction in asymmetries in bargaining power (e.g. Kuhn and Vives, 1995; Azzam and Salvador, 2004; Trienekens et al., 2009; Mitchell, 2017); innovation and optimisation of business processes and products (e.g. Dyer and Singh, 1998; Lokanathan, de Silva and Fernando, 2011); and improvement of price discovery which may affect price dispersion and volatility and reduce waste (e.g. Fausti and Diersen, 2004; Fausti et al., 2010; Scott et al., 2010). Furthermore, improved availability of relevant market information can better support evidence-based formulation and implementation of public policy (e.g. AMTF, 2016b; Ménard, 2019).

However, some studies argue that in certain circumstances increased market transparency can have some adverse implications for the functioning of the agri-food supply chain. For example, market transparency might facilitate tacit collusion in the presence of market power (e.g. Stigler, 1964; Kuhn and Vives, 1995; Møllgaard and Overgaard, 1999; Levenstein and Suslow, 2006; Cai, Stiegert and Koontz, 2011), increase the risk of data breach if data protection is not properly ensured (e.g. Sayogo

([1]) 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.

et al., 2014; Martin, Borah and Palmatier, 2017), or generate harmful market effects if information is incomplete, inaccurate and/or biased (e.g. Ménard, 2019).

Market transparency in the food supply chain is under intensive policy scrutiny in the EU. Recognising the potential benefits of market transparency and the asymmetric availability of information across different stages of the agri-food supply chain, AMTF - established by the Commission in 2016 with the aim of examining possible ways of improving the position of farmers in the food supply chain - recommended that '[the] Commission should take further steps to increase market transparency so as to foster effective conditions of competition along the supply chain'. In particular, it recommended introducing mandatory price reporting to cover information gaps in the agri-food supply chain, collecting the data in a timely and standardised manner, and disseminating it in a duly aggregated form (AMTF, 2016a; 2016b). Based on the AMTF recommendations, in 2017 the European Commission launched an inception impact assessment and a public consultation on the initiative to improve the food supply chain. Alongside unfair trading practices and producer cooperation, this also covered market transparency (European Commission, 2017a; 2017b). In May 2019, the Commission published a proposal for regulation to increase price transparency in the food supply chain (European Commission, 2019a; 2019b).

A key requirement for improving market transparency is the provision of information by operators (i.e. companies or businesses in the primary production, distribution, processing, wholesale or retail stages) in the agri-food chain, that can be made accessible in an appropriate format to all market participants in the supply chain. In other words, in addition to being on the receiving end of transparency in food supply chains, operators are often also suppliers of information to external organisations, such as public agencies (e.g. government agency, national statistical office), private companies (e.g. market research company) and/or other agencies (e.g. associations, NGOs). Providing information to a third party usually involves direct costs to operators, given that they need to put in place the reporting system required to deliver the necessary information. These are mainly costs for data gathering and processing, internal or external auditing (if required), and dissemination of information. This may include various types of costs related to setting up the accounting and IT system, maintaining the system, or hiring additional staff to carry out the reporting. The reporting costs depend on many factors, such as volume and type of information that needs to be reported, frequency of reporting, size of the operator and complexity of its activities, level of automation, and whether the operator has established a reporting system for internal management purposes. The cost of external reporting shall exclude the cost of preparing and presenting information that is also used for management purposes. Naturally, identification of the actual level of costs to operators for reporting to a third party is an empirical question. However, literature analysing the costs to operators for reporting is very limited. Usually, the literature focuses only on a conceptual discussion of the implications of reporting information to a third party, and does not provide cost estimates (e.g. Sayogo et al., 2014; Baltussen et al., 2019).

The present report aims to close this gap in the literature by presenting findings on estimates by operators in EU agri-food supply chains, of the costs of providing information to a third party in order to contribute to improved market transparency in the agri-food chain. This analysis is relevant because it contributes to a better understanding of potential implications of the Commission policy initiative to increase price transparency in the agri-food supply chain (European Commission, 2019a; 2019b). The secondary objective of this report is to analyse potential benefits and risks of increased market transparency, as perceived by operators in the agri-food supply chain. The analyses in this report are based on an online survey and structured interviews conducted among operators in the agri-food supply chain between 23 October 2018 and 5 February 2019.

2 Methodology

2.1 EU Survey and structured interviews

The analyses in this report are based on data collected through:

1. 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 food chain operators or associations, and other organisations that represent their interests or provide them with services.

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 (for the English version, see Annex 1). 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 email and 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 2018 and 1 February 2019. In total, 113 responses were obtained within this period, which implies an approximate response rate of 17 % ([2]). Out of these, 68 responses are from companies or operators along the food chain and 45 are from different types of associations or organisations.

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

The structured interviews were conducted between 23 October 2018 and 5 February 2019. The aim of the structured interviews was to obtain more in-depth information, to complement data obtained through the online survey. The online questionnaire included a question on respondents' availability to participate in a structured follow-up interview; 80 % of the interviews conducted came through this source. The structured interviews consisted of 10 questions, organised 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 current data gathering and reporting practices and the estimated costs of reporting to a third party. In total, 21 interviews were conducted: 11 with companies operating in the food chain and 10 with associations representing the interests of or serving these companies. Nineteen structured interviews were conducted by telephone and two were received in written form ([3]).

Organisations (e.g. farmers' associations, trade associations, associations of food processing firms, retail associations) participating in the online survey and structured interviews were usually not

([2]) This is only an approximate response rate and likely overestimated, because the number of respondents receiving the message about the survey through social media (e.g. Twitter, LinkedIn, Facebook) cannot be estimated. Furthermore, 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); no information is available about the number of operators contacted by associations, bioeconomy clusters or ministries.

([3]) Two respondents preferred the written form, because providing responses to the questions required gathering information from different departments.

directly reporting data to a third party, but were expected to provide their cost estimates for reporting to a third party based on their knowledge of the sector.

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

2.2 Econometric estimations

Multivariate regression was used to analyse the relationship (correlation) between the costs of reporting to a third party and various explanatory variables that might affect the cost values. The regression analysis allows joint estimation of the influence of several explanatory variables on the cost values. Due to data limitations, econometric estimations were conducted only for respondents' estimated costs for reporting to a third party to comply with a reporting obligation to increase market transparency, and not for the actual costs of their current internal/external reporting activities.

In the econometric estimations, ordinary least squares (OLS) and ordinal logit regressions were employed. Both regressions were used in order to check for the robustness of the results. The ordinal logit, or the ordered logit model (Liu, 2015), was also used because the dependent variable is ordered from small or negligible costs to higher estimated costs, which cannot be easily indicated in levels.

3 Respondent profiles

This section presents the characteristics of respondents who participated in the online survey and structured interviews. The analysis focuses on describing the distribution of respondents in terms of geographic coverage, stage of food chain, sector and size.

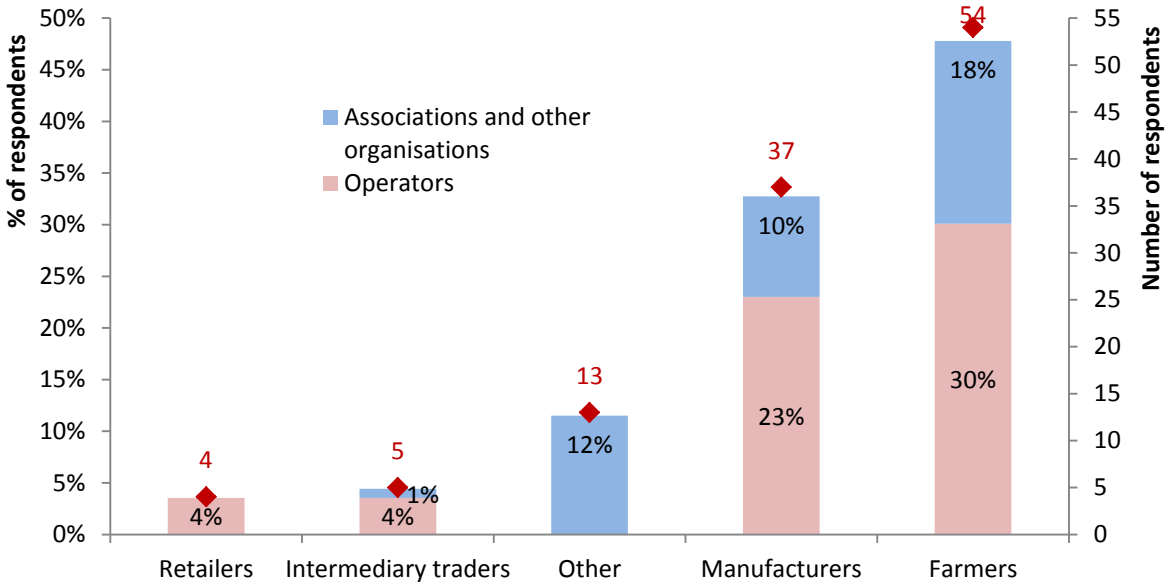
3.1 Online Survey

Figure 1 shows the distribution of respondents, by country of head office location. The most represented countries are Latvia, Slovakia and Belgium, respectively accounting for 13 %, 12 % and 10 % of all respondents. The least represented are Croatia, Czechia, Cyprus, Ireland, Lithuania and the Netherlands, each accounting for only one respondent. This implies that the sample is not representative across different Member States (MS), given that some smaller MS (in terms of size of the agri-food sector) are over-represented, while some bigger ones are under-represented.

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 %). A significant proportion of respondents (40 % of all respondents) represent associations and other organisations (Figure 2).

Figure 1. Respondents by Member State (% of all respondents; Number of all respondents)

Figure 2. Respondents by food chain stage (% of all respondents)



The respondents are relatively well spread across different agri-food sectors. The most represented sectors are fruit and vegetables (17 % of all respondents), various primary agricultural products (16 %), grains (13 %) and various processed food products (13 %) (Figure 3). There is a similar spread in the distribution of operators by size (i.e. number of employees). In addition to associations and other organisations, which account for 40 % of all respondents, all relevant size groups of operators participated in the survey. Self-employed or operators 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 50-250 employees (12 %), and small operators with 10-49 employees (11 %) (Figure 4).

Figure 3. Respondents by sector (% of all respondents)

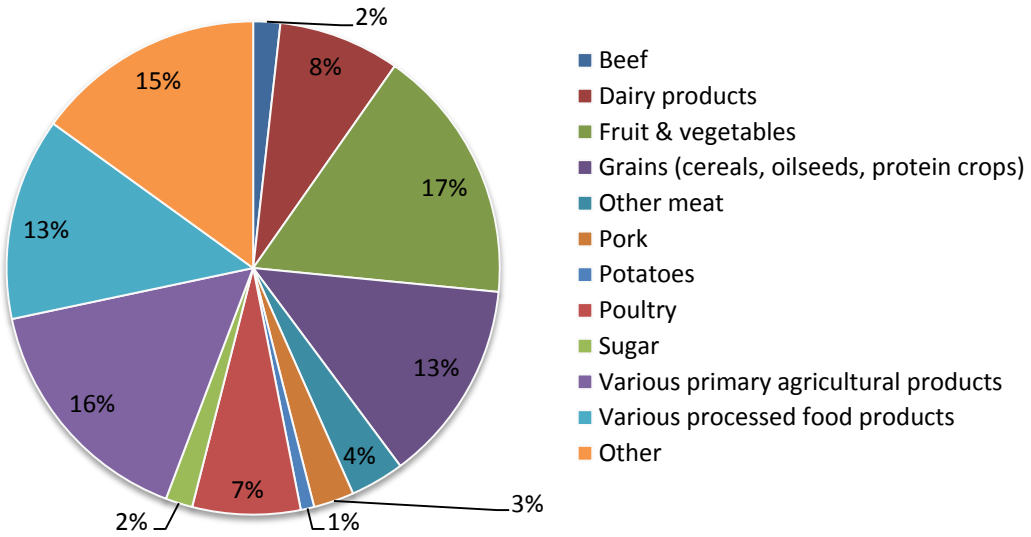
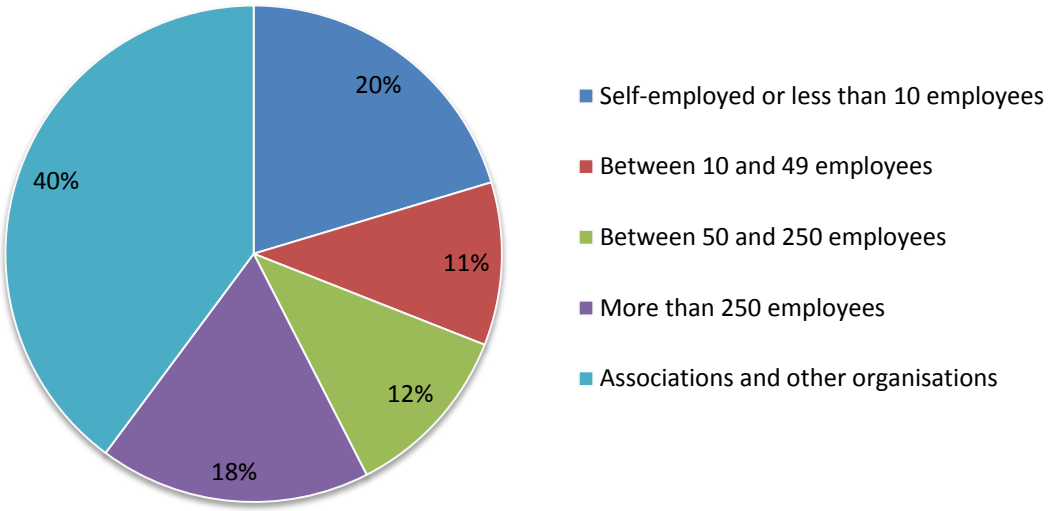


Figure 4. Respondents by number of employees (% of all respondents)

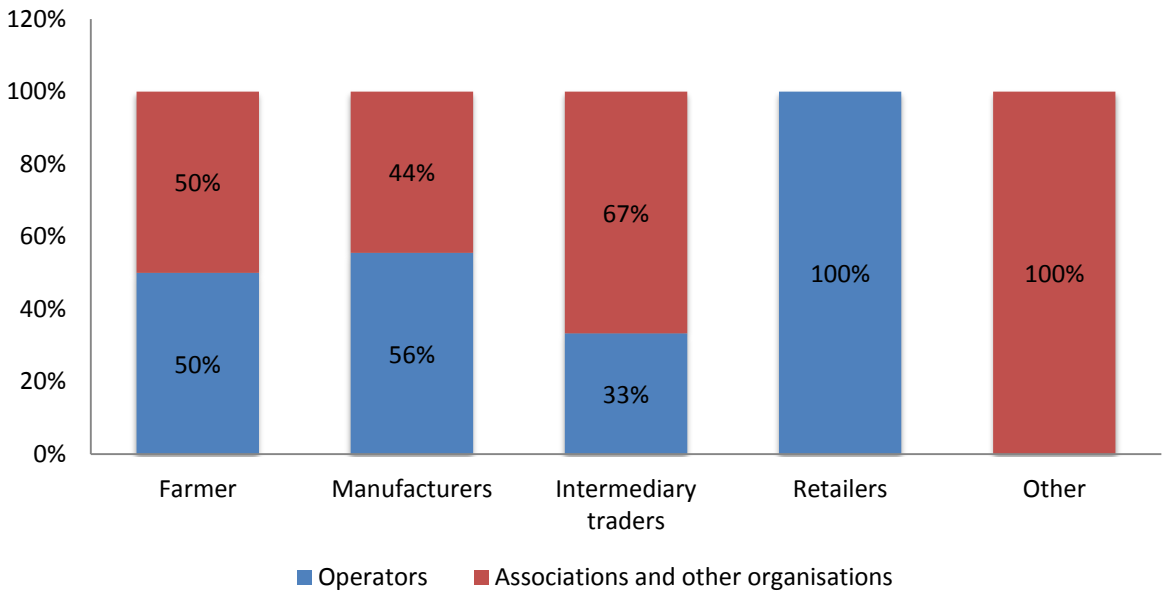


3.2 Structured interviews

The findings presented in this report cover information obtained through 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 types of companies and organisations at different stages of the food chain – specifically, farmers (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).

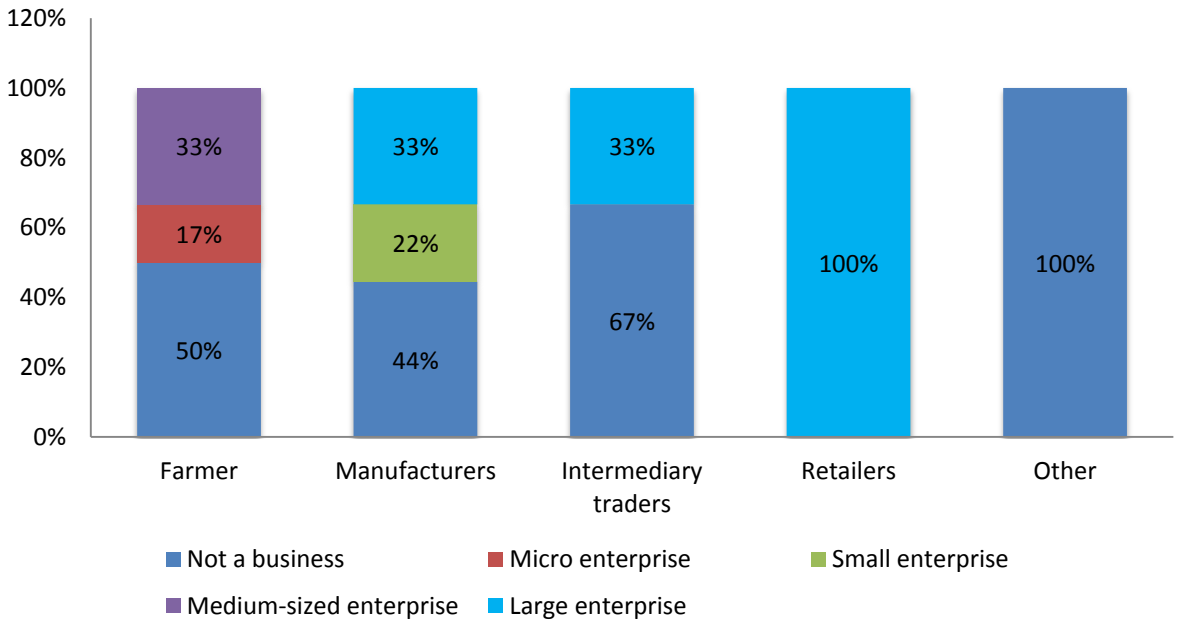
Of the 21 interviewees, 11 are operators defined as companies or businesses operating along the food chain. The other 10 are associations or organisations that represent the interests of food chain operators or provide them with services. Although a significant number of operators responded to the online EU Survey (68 of the 113 respondents are operators – 60%), only 23 (34 %) expressed availability for an interview. Of 45 associations that responded to the online EU Survey, 25 (56 %) offered their availability for a follow-up interview. The share of interviewees that represent either a food chain operator or an association at each stage of the food chain is shown in Figure 5.

Figure 5 Share of interviewed operators or associations at each stage of the food chain



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

Figure 6 Share of operators or associations interviewed at each stage of the food chain, by company size



4 Potential benefits and risks of increased market transparency

4.1 Online Survey

Respondents were asked to express their view on potential benefits and risks to their business or organisation as a result of increased market transparency along the agri-food supply chain. Respondents were asked about potential benefits and risks specifically in relation to increased price transparency, as well as about additional information (e.g. production volumes, stocks, margins) contributing to increased market transparency. To compare the overall effect, respondents also evaluated how benefits compare with reporting costs and risks for their business or organisation, as a result of increased market transparency along the agri-food supply chain. 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 ([4]).

The majority (78 %) of respondents expressed that they would benefit at least to a minor extent from increased price transparency along the agri-food supply chain; this included around a quarter (26 %) of respondents who 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 increased price transparency, compared with other stages of the chain (i.e. manufacturers, traders and 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 increased price transparency. However, overall the share of respondents that would not benefit from increased price transparency is relatively low (14 % of all respondents) (Figure 7).

The main benefits ([5]) from increased price transparency most commonly 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 increase in opportunities for risk management. Between 25 % and 31 % of all respondents listed these individually as the main benefits of increased price transparency. Other main benefits selected by a significant share of respondents include improvement in investment decisions in the long term (15 % of all respondents), increase in consumer awareness of the economic situation of food operators (13 %), improvement in 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 %), improvement in cooperation with other operators in the agri-food supply chain (12 %), and increase in the effectiveness of public policies (10 %) (Figure 8). Other benefits from increased price transparency listed in Figure 8 were reported individually as a main benefit by less than 10 % of respondents.

([4]) 'Market transparency can be defined as the availability of relevant market information to market participants.' (AMTF, 2016a).

([5]) Respondents to the questionnaire could select up to three main benefits from increased price transparency.

Figure 7. Potential benefits from increased price transparency along the agri-food supply chain (% of all respondents; number of respondents)

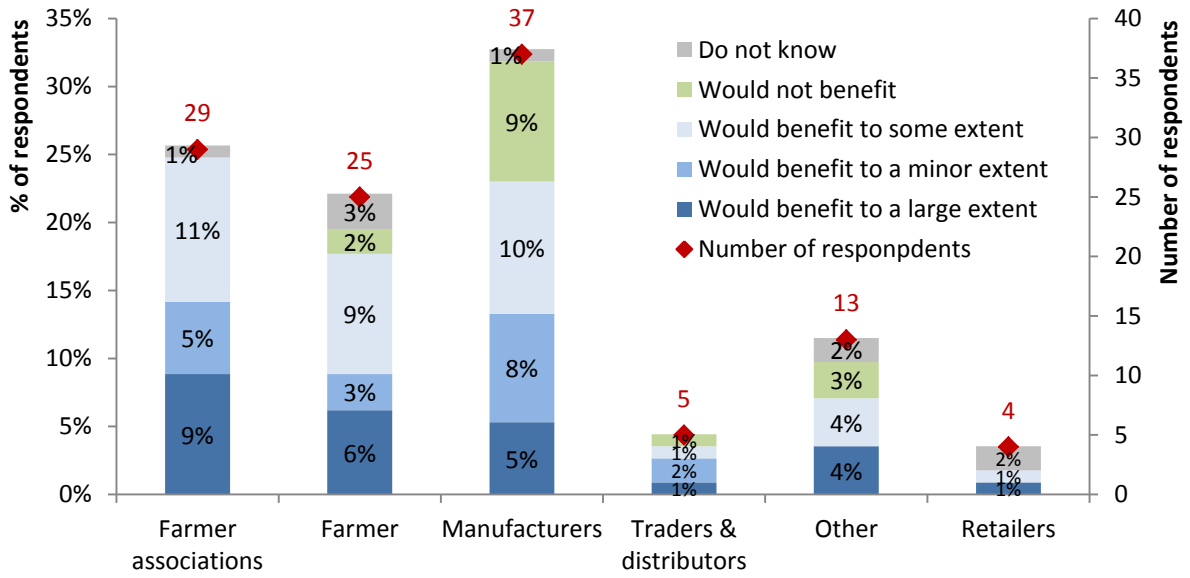
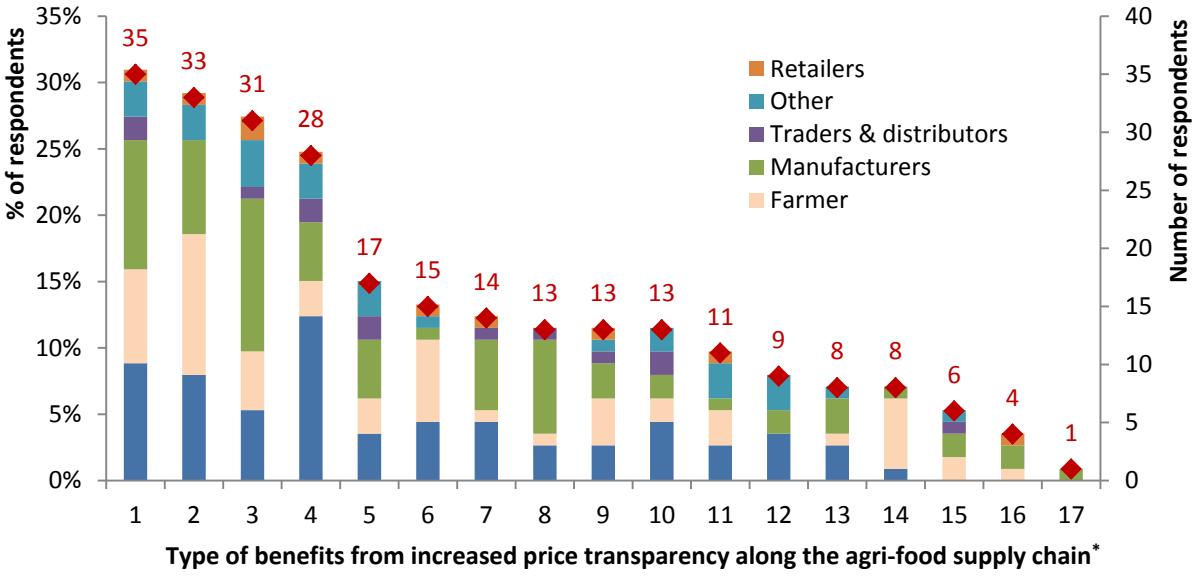


Figure 8. Type of potential benefits from increased price transparency along the agri-food supply chain (% of all respondents; number of respondents)



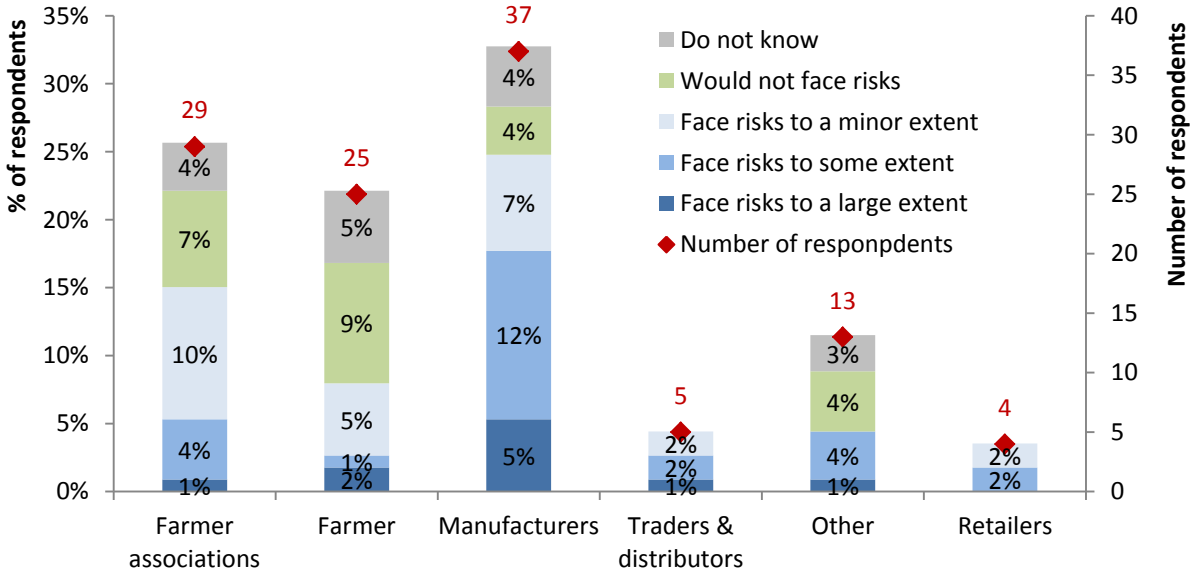
Notes: * 1: Reduce uncertainty, 2: Level the playing field for all operators in the agri-food supply chain, 3: Improve knowledge on how price changes are passed on between operators, 4: Increase opportunities for risk management, 5: Improve investment decisions in the long term, 6: Increase consumer awareness of the economic situation of food operators, 7: Improve 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: Improve 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.

Compared with benefits, fewer respondents expressed that they would face risks from 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 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 and distributors, and retailers appear to be more concerned than farmers about risks from increased price transparency: a greater share of them than of farmers and farmers' associations expressed that they would face risks to some extent, and to a large extent, from increased price transparency. Around 23 % of all respondents reported that they would not face risks from increased price transparency; these were mostly among farmers' associations and farmers.

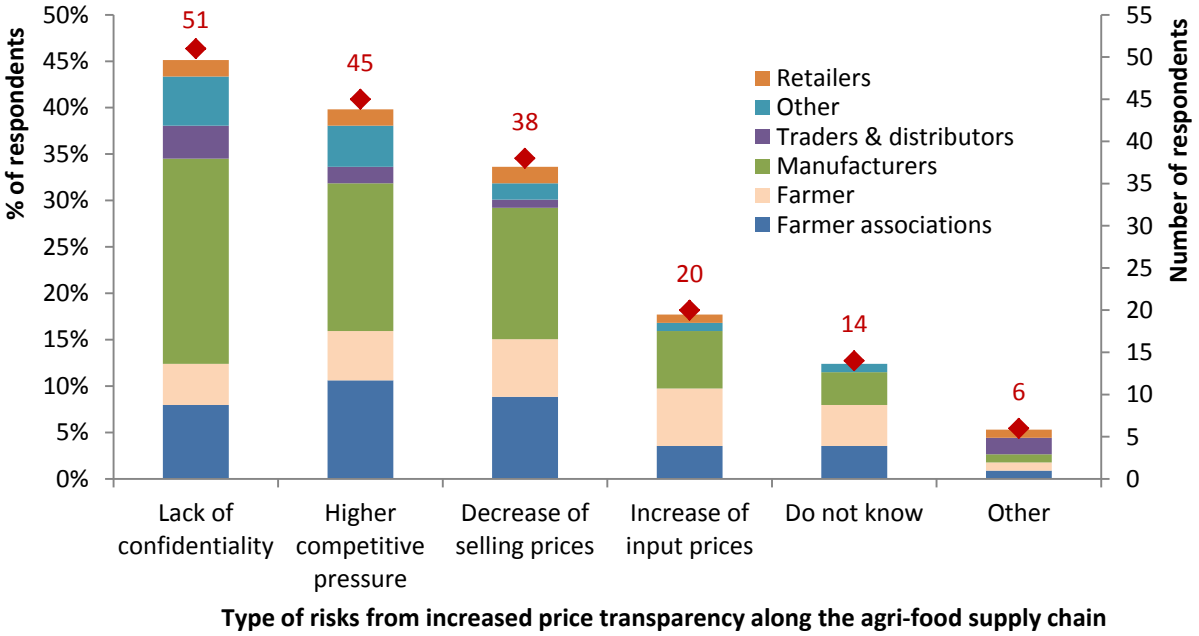
The main risks ([6]) from increased price transparency most commonly reported by respondents include lack of confidentiality (45 % of all respondents), higher competitive pressure (40 %), and decrease in selling prices (34 %). Increase in input prices was suggested to be the main risk by 18 %, and other risks by 5 % of respondents (Figure 10).

Figure 9. Potential risks from increased price transparency along the agri-food supply chain (% of all respondents; number of respondents)



([6]) Respondents to the questionnaire could select up to three main risks from increased price transparency.

Figure 10. Type of potential risks from increased price transparency along the agri-food supply chain (% of all respondents; number of respondents)



In addition to price transparency, respondents provided their view on benefits and risks from other information contributing to increased market transparency along the agri-food supply chain. In terms of benefits, over 40 % of respondents perceived that an increase in the transparency of indicators for production volumes, consumption, trade volume and transport costs would generate benefits to their business or organisation. At the other end of the scale, gross and net margins and sustainability indicators were reported by the least number of respondents (less than 35 %) as expected to benefit from increased market transparency (Figure 11).

Among information other than price, gross and net margins were the factors most often reported (by more than 40 % of all respondents) as generating risk from increased market transparency. 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 11. Potential additional information generating benefits from increased market transparency along the agri-food supply chain (% of all respondents)

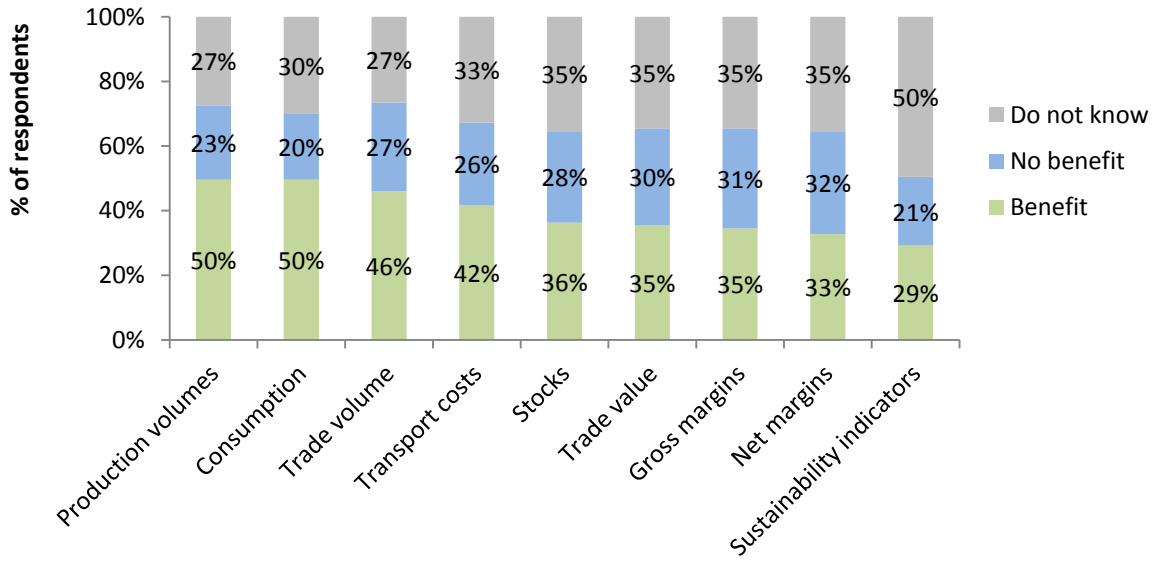


Figure 12. Potential additional information generating risks from increased market transparency along the agri-food supply chain (% of all respondents)

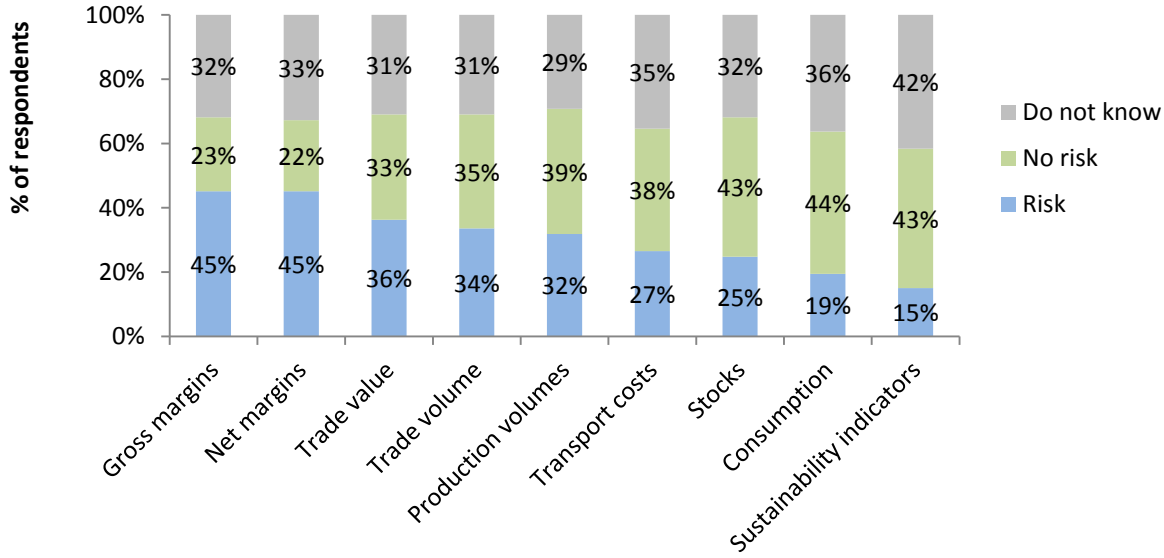
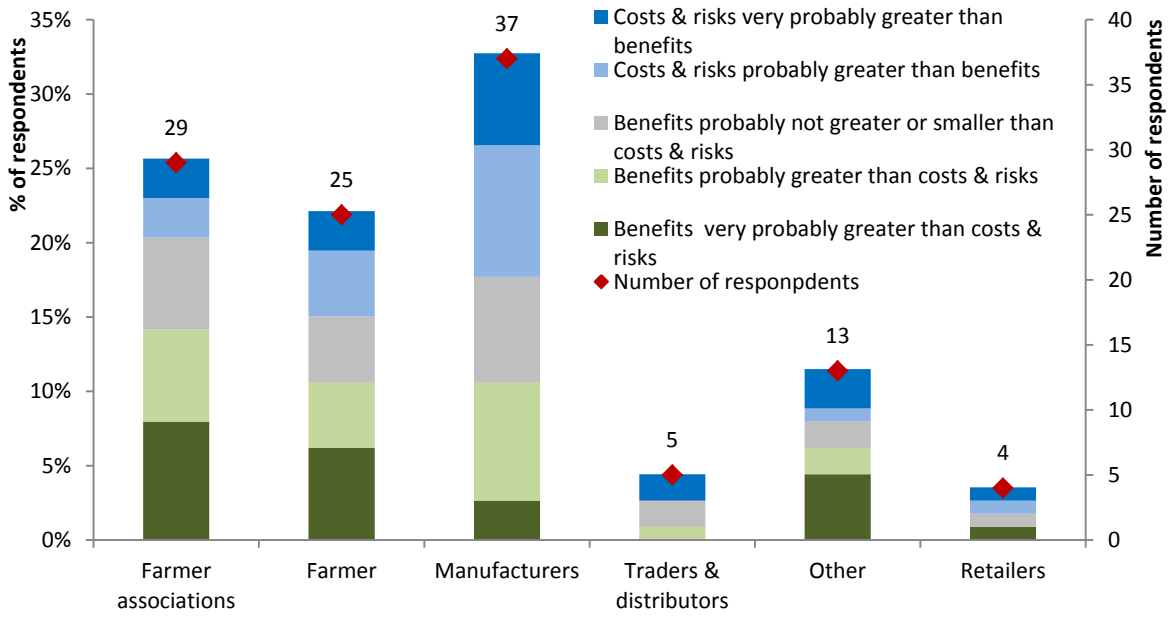


Figure 13 attempts to provide the respondents' evaluation of the net effect of increased market transparency along the agri-food supply chain. Respondents were asked to compare benefits with reporting costs and risks to their business or organisation from increased market transparency. According to the results, a greater share of respondents perceive benefits to be greater than reporting costs and risks from increased market transparency, compared with the share of respondents that perceive the opposite (i.e. net loss). In other words, around 43 % of all respondents consider benefits probably or very probably greater than costs and risks, whereas 35 % consider costs and risks probably or very probably greater than benefits. Around 22 % of respondents

reported insignificant net effect from increased market transparency (i.e. benefits are probably not greater or smaller than costs and risks).

There is a significant difference in relative distribution of the reported net effect of increased market transparency between respondents from different stages of the agri-food supply chain. The share of farmers and farmers' associations that report net benefits is greater that the share that report net loss from increased market transparency. The reverse is true for manufacturers, traders and distributors, and retailers: more respondents from these groups report net loss than net benefits (Figure 13).

Figure 13. Comparison of benefits versus reporting costs and risks from increased market transparency along the agri-food supply chain (% of all respondents; number of respondents)



4.2 Structured interviews

To gain better insights from operators and associations on potential benefits and risks from increased market transparency, one question in the semi-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. They were then asked to comment on perceived benefits and risks for their company or organisation from increased market transparency. It is noteworthy that interviewees were always presented with questions on increased market transparency compared with the current situation, not with general questions on market transparency.

4.2.1 Awareness and relevance

The interviews revealed that 9 of the associations interviewed were aware of the AMTF and some of them had also been actively involved in it, whereas of the 11 operators, only 6 knew about it. The remaining association interviewed 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 publicly 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 information already publicly available in their sector and segment of the food chain.

Indeed, from a full chain perspective, 16 of the interviewees (76 %) suggested potential benefits from increased market transparency. However, they 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 avoid competitive disadvantage for food supply stages that report information compared with those that do not. This was reported especially by 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 is available but it is not used. In a similar line of argument, four interviewees (19 %) also stressed that training and education are important for the success of increased market transparency, in order for operators (e.g. farmers) to 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 play an active role in promoting knowledge transfer and training in how to use the information available. It was also suggested that public authorities (at MS or EU level) should play a role in gathering basic (raw) information, but that processing, interpretation and market analysis should be left to the private sector. Some interviewees consider that the information currently provided to the EU is oriented more towards the needs of policymaking and is less useful for operational business needs.

Finally, some interviewees indicated that increased reporting requirements should be mandatory and established by law, in order to avoid opportunistic behaviours. One interviewee commented that, in order to achieve operability, near real-time data reporting would be preferable and it should be established by the Commission and not by MS.

4.2.2 Benefits and risks

Figure 14 shows the summary statistics for interviewees' responses on their perception of benefits and risks from increased market transparency, by stage in the food chain. Overall, there is an equal number of interviewees reporting benefits and reporting risks from increased market transparency, i.e. 16 interviewees (76 % of all interviewees). Similar to the online survey, manufacturers appear to be more concerned about risks from increased price transparency compared with farmers: a greater number of them expressed that they would face risks from increased market transparency compared with farmers and farmers' associations. For the other stages of the food chain, there is an equal split in the number of reported benefits and risks from increased market transparency. However, these figures need to be evaluated with care, given the small sample size of structured interviews.

Of the 16 interviewees (76 %) who perceived potential benefits for their company or organisation from increased market transparency, 12 (57 %) also reported potential risks, while the remaining 4 interviewees (14 %) did not identify any risks from increased market transparency.

The benefits from increased market transparency most commonly mentioned by interviewees were potential for generating dialogue among agents in the chain, provision of market knowledge, benchmarking opportunities, reduction of information asymmetries, opportunity for enhancing trust among agents, bringing unfair practices to light, allowing better decision-making, and provision of input and feedback for policymaking.

The risks from increased market transparency most commonly identified by interviewees were lack of methodology and established product definitions to enable comparison of information across sectors and along the food chain, competition pressures, decreasing selling prices, increasing confidentiality and data security risks, increasing risk of revealing business secrets, and challenge of ensuring data quality. Several interviewees highlighted a potential risk that increased reporting could

induce strategic/opportunistic behaviour by some operators, in deliberately reporting inaccurate data in order to affect markets.

The interviews revealed a list of potential effects of increased market transparency. However, the perception of a certain effect as a benefit or a risk differs across sectors and stages in the food chain. For instance, of the 13 interviewees (62 %) who mentioned that increased market transparency provides an opportunity for benchmarking, 10 (48 %) considered it an opportunity for operators to better evaluate company situation, market developments and product performance, allowing them to obtain a fairer price and improve productivity. However, 3 of them also perceive risks and 2 did not identify any risk. Some interviewees suggested that increased market transparency could lead to increased pressure on (farmers') prices, as it gives more power to the counterparty (client) and increases competition pressures from importing countries.

Around 7 interviewees (33 %) stressed that transparency along the food chain could contribute to reducing information asymmetry, given that there is currently an observed imbalance in the availability of information across different stages of the food chain. While the early (upstream) stages of the chain tend to be more transparent (especially primary agricultural and some manufacturing sectors), there is lower transparency towards the downstream stages. A few manufacturers interviewed, however, feared that higher transparency may provide more power to their counterparty in business transactions, thus counteracting the potential benefits from increased market transparency.

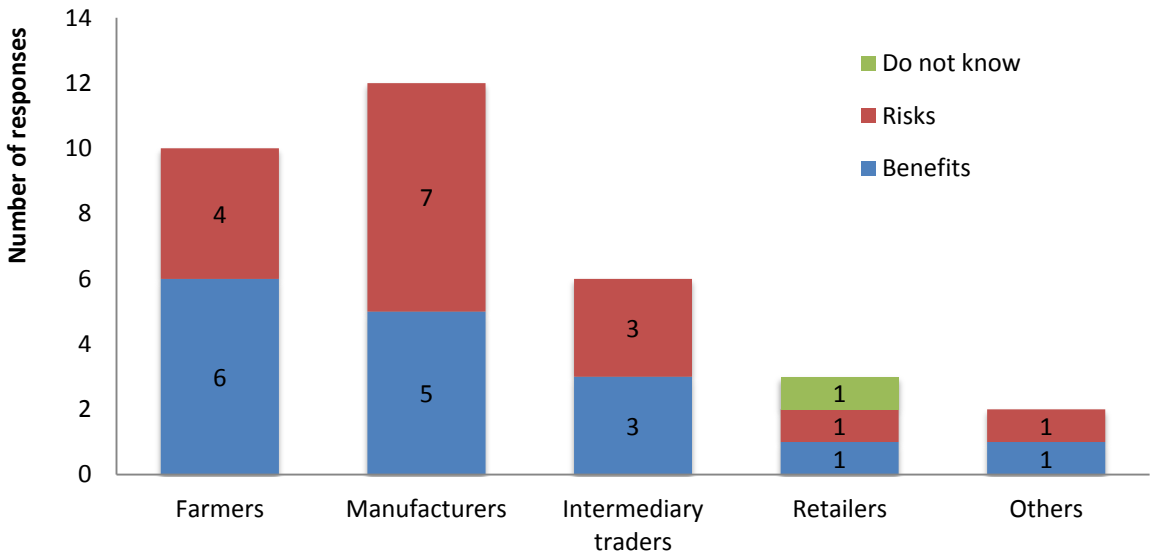
Several interviewees highlight the relevance of enhanced market transparency for bringing unfair trade practices to light. Interestingly, only a few interviewees mentioned the administrative burden as a risk of greater reporting/notification requirements related to increased market transparency.

In relation to the usefulness of increased market transparency, data quality is often mentioned as a challenge. This is in terms of accuracy (information must be correct, raising the issue of quality enforcement), timeliness (particularly relevant for perishable products), representativeness (e.g. if only wholesale prices are made publicly available, they may represent only a small portion of the market), relevance (e.g. all relevant product varieties need to be considered and increased transparency must be designed to meet the needs of operators, not only policy objectives) ([7]) and comparability (e.g. comparison of margins across different stages of the food chain is challenging since cost/margin structure is very different across different stages and sectors). With regard to the comparability of reported information, several interviewees stressed that there is a need to develop a proper methodology for data collection and aggregation, and to establish adequate product definitions. Finally, the accessibility of information was identified by some interviewees as a relevant issue in need of attention, arguing that the system must be simple and easy to use and interpret.

Last but not least, confidentiality (especially in concentrated markets) and IT security were considered by several interviewees as significant potential risks from increased market transparency. These risks are perceived by many to lead to the disclosure of business secrets.

([7]) For instance, some farmers and farmers' associations see the main risk as being in product definition. Products come in different sizes (e.g. small versus large), shapes and varieties. Prices usually depend on these characteristics, and it may not be possible to make business decisions based on prices for standard products.

Figure 14. Statistics on interviewees' perceived benefits and risks from increased market transparency along the agri-food supply chain (number of responses)



5 Costs of reporting to a third party

5.1 Online Survey

A firm's external reporting costs mainly include personnel and IT costs for data gathering and processing, internal or external auditing (if required), and dissemination of information. These costs must however exclude the cost of preparing and presenting information that is also used for management purposes. The primary objective of the survey was to collect information on the respondents' costs for reporting to a third party, for:

(i) existing reporting practices
(ii) estimated costs for reporting all relevant information.

Many operators already report various types of information to a third party, such as 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 information most commonly reported at product level to a third party under existing reporting practices includes production, output prices and trade volumes, each of these representing more than 40 % of respondents who report to a third party. Other information relatively commonly reported at product level to a third party includes trade values, input prices and stocks, varying between 29 % and 32 % of respondents who report to a third party. Other information is reported at product level to a third party by less than 12 % of respondents. Respondents usually report information at product level to a third party on a monthly basis (on average, 10 % of respondents who report to a third party, over the 10 types of information listed in Figure 15), followed by annual (6 %) and weekly (3 %) reporting. Other reporting frequencies are practised to a lesser extent (by less than 3 % of respondents who report to a third party) (Figure 15).

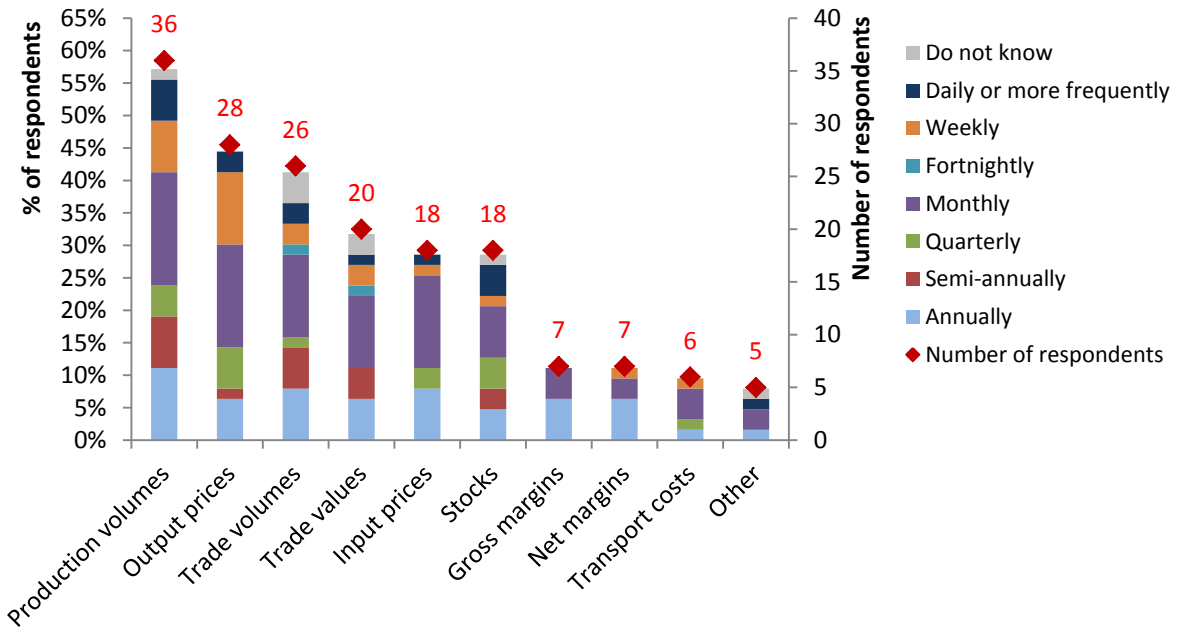
The actual reporting experience of operators might imply that they can provide more accurate cost estimates for reporting to a third party. However, as shown in Figure 15, there is significant variation between respondents in the frequency and type of information reported to a third party, as well as many operators who do not report to a third party. For this reason, the survey included questions attempting to capture respondents' estimated costs for 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 than existing reporting practices.

It is important to note that only those operators who report information by product type to a third party were asked in the questionnaire to provide costs for existing reporting practices. This choice was made in order to avoid underestimation of costs, given that reporting by product type is expected to be more costly than reporting information at overall operator level.

The questions in the survey were formulated to allow capture of 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 costs spent on the reporting system for operators' internal use.

Respondents were asked to provide two types of costs for reporting to a third party: annual running costs and total set-up costs. The running costs include operators' annual expenditure on maintaining the system for reporting to a third party (e.g. personnel and IT costs). The set-up costs are one-time expenditure incurred to set up the system for reporting to a third party.

Figure 15. Type of information reported by operators at product level to a third party, and frequency of reporting (% of respondents who report to a third party; number of respondents)



5.1.1 Costs of existing reporting practices

Out of the total of 113 respondents, around 82 % (93 respondents) have an established reporting system for input/output prices, volumes (production, stocks, trade), transport costs and/or margins for their 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 party provided cost estimates. Only 27 % of all respondents (30 respondents) report to a third party and provided estimates for annual 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 for reporting to a third party as a share of total annual running (total set-up) costs for the operator's reporting system ([8]). Operators do not usually differentiate between expenditure on reporting for internal use and expenditure on 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 total annual running (or total set-up) costs for the operator's reporting system. The shares of respondents reported in Figure 16 and Figure 17 are calculated as percentages of 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 existing practices for reporting to a third party.

According to the survey results, around 73 % of respondents (22 respondents) who report to a third party and provided cost estimates have annual running costs for reporting to a third party representing less than 20 % of total annual running costs for the operator's reporting system, around 23 % (7 respondents) have costs between 20 % and 75 %, and the remaining 3 % (1 respondent) has costs greater than 75 % (Figure 16).

There is a similar distribution pattern for set-up costs, although the proportion of respondents with lower costs is greater. That is, around 87 % of respondents (20 respondents) who report to a third party and provided cost estimates have set-up costs for reporting to a third party representing less

([8]) The total annual running and total set-up costs for reporting represent the expenses which operators incur to gather, process and transmit the information both for internal use and/or for external reporting.

than 20 % of overall set-up costs for the operator's reporting system, around 13 % (3 respondents) have costs between 20 % and 75 %, and no respondent had costs greater than 75 % (Figure 17).

Figure 16. Annual running costs for 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)

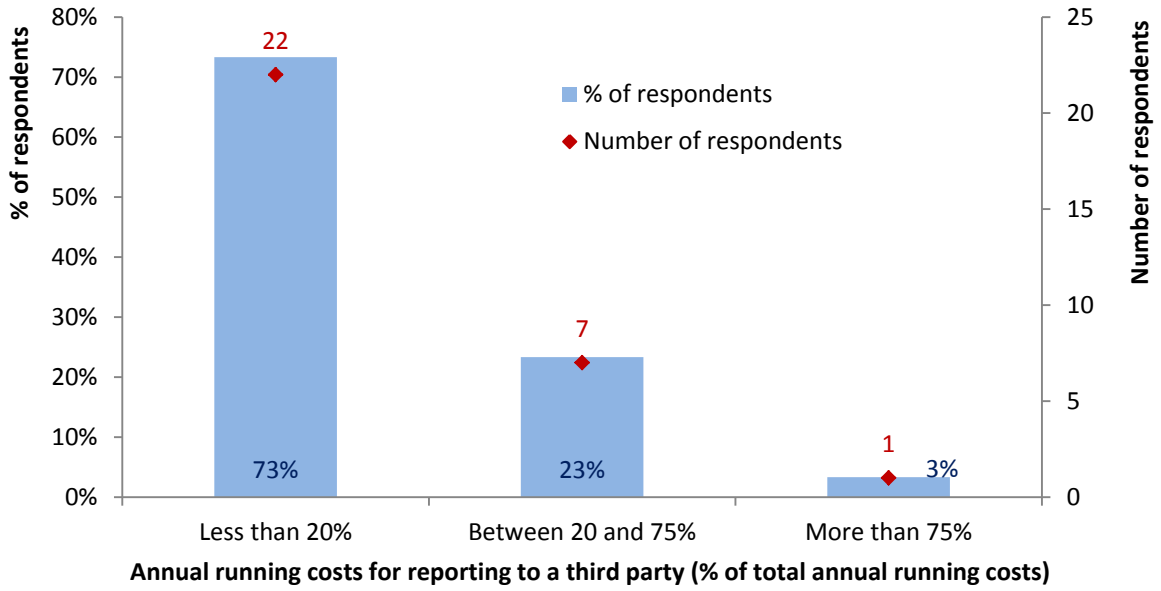


Figure 17. Set-up costs for reporting to a third party, for existing reporting practices (% of all respondents who report to a third party and provided cost estimates; Number of respondents)

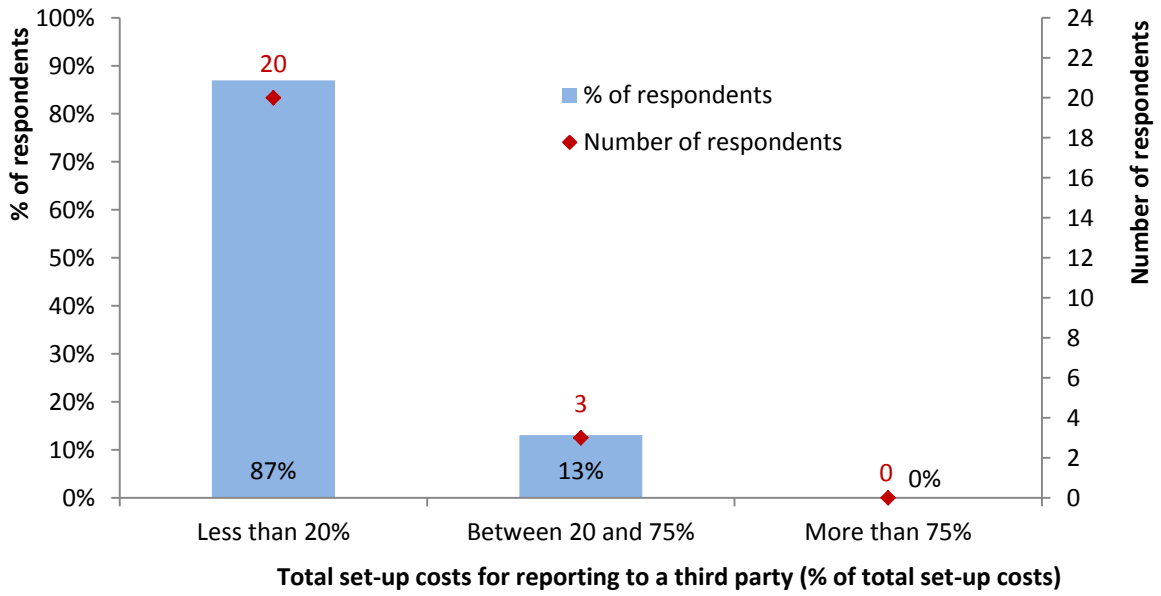


Figure 18 (Figure 19) shows annual running (total set-up) costs for reporting to a third party as a share of total annual running (set-up) costs for the operator's reporting system, by size of total annual running (set-up) costs. The aim of these figures is to provide a more detailed picture of the cost distribution by size.

A significant share of respondents who report to a third party did not provide cost estimates for the overall costs of the operator's reporting system and/or also additional costs for reporting to a third party, either because they do not know their value (e.g. difficult to estimate) or because they did not want to provide them. For 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 the existing reporting system (used for internal and external reporting), while around 24 % of respondents who report to a third party do not know or did not want to provide the cost of the existing system for reporting to a third party (Figure 18a). For total set-up costs, these figures are higher: around 43 % of respondents who report to a third party do not know or did not want to provide the total set-up costs for the existing reporting system, while around 32 % of respondents who report to a third party do not know or did not want to provide the cost of reporting to a third party (Figure 19a).

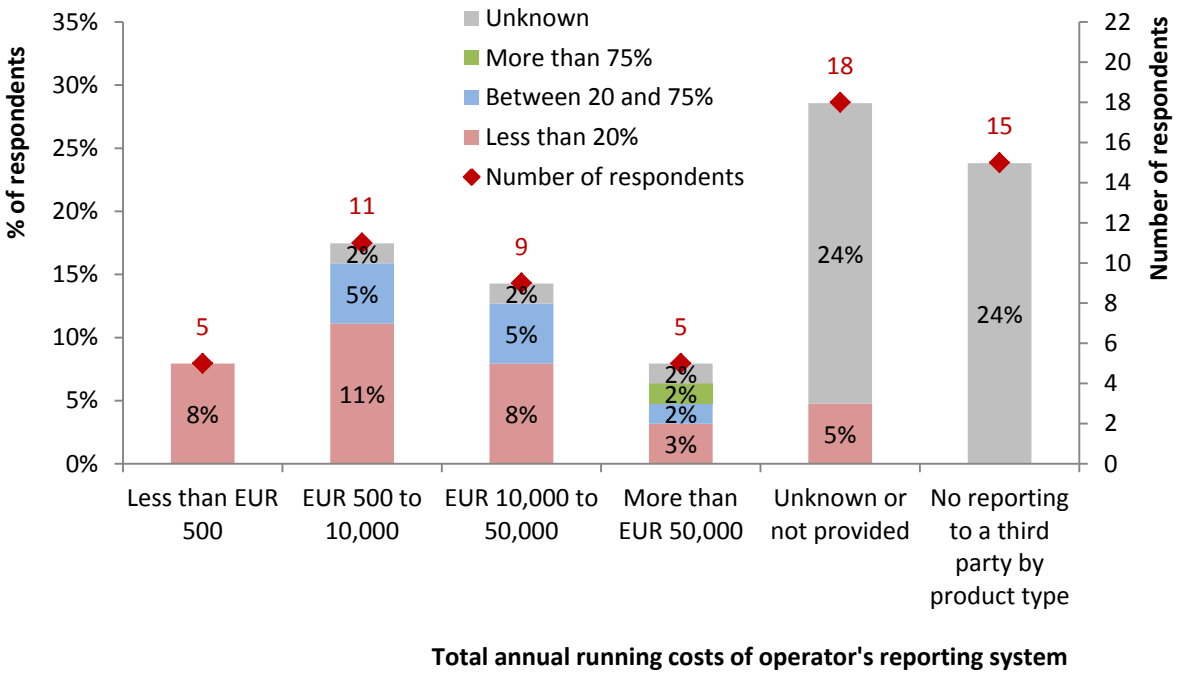
As mentioned above, operators who do not report information by product type to a third party were not asked to provide cost estimates. They represent 24 % of respondents who report to a third party, for both annual running costs and total set-up costs (Figure 18a, Figure 19a).

Most respondents who report to a third party and provided cost estimates tend to have annual running costs for reporting of less than EUR 50 000, and costs for reporting to a third party represent less than 20 % of this. For example, 33 % (23 % + 10 %) of respondents who report to a third party and provided cost estimates have annual running costs for the reporting system between EUR 500 and EUR 10 000, less than 20 % of which are costs for reporting to a third party, for most of these respondents (Figure 18b).

Regarding set-up costs, the vast majority of respondents who report to a third party and provided cost estimates have set-up costs for reporting to a third party of less than 20 % of total set-up costs for the operator's reporting system. Only a small share of respondents have set-up costs for reporting to a third party of between 20 % and 75 % of 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 for their reporting system between EUR 1 000 and EUR 10 000; for most of them, the costs of reporting to a third party represent less than 20 % of this (Figure 19b).

Figure 18. The share of annual running costs for reporting to a third party, for existing reporting practices (out of total annual running costs for operator's reporting system)

a) % of respondents who report to a third party



b) % of respondents who report to a third party and provided cost estimates

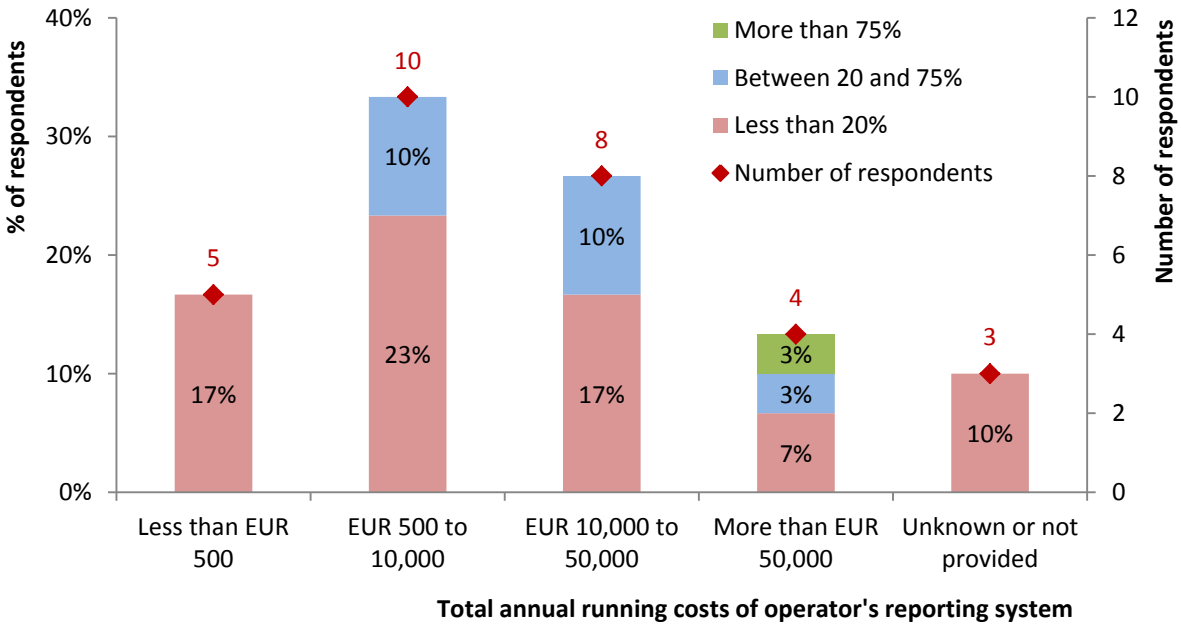
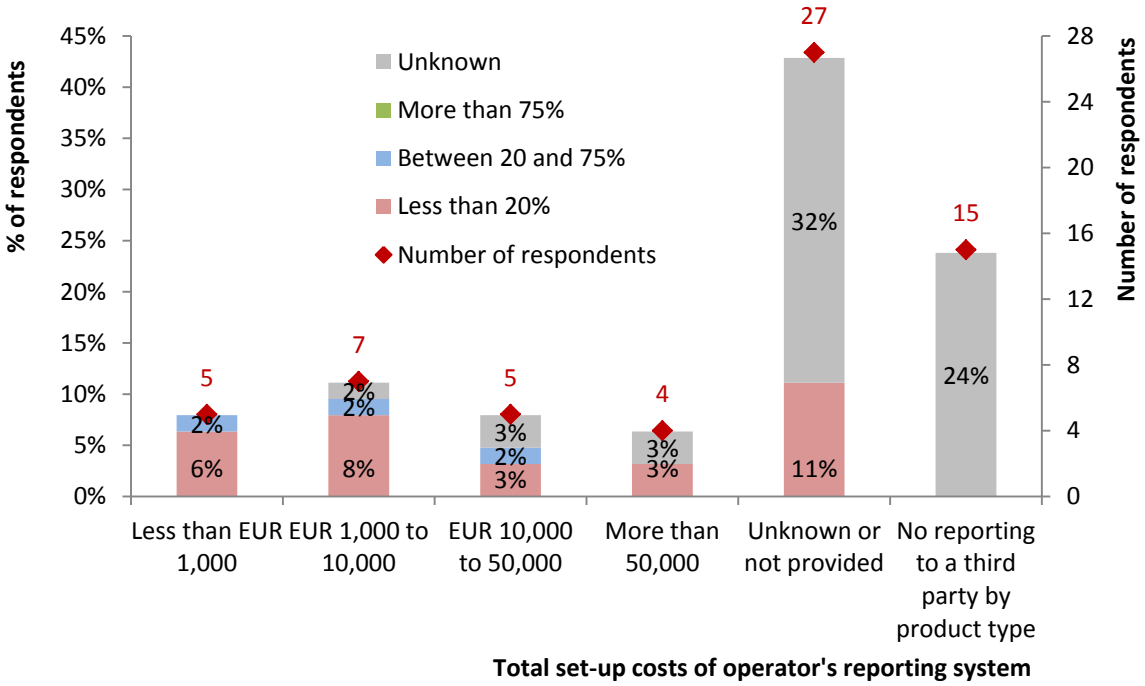


Figure 19. The share of set-up costs for reporting to a third party, for existing reporting practices (out of total set-up costs for operator's reporting system)

a) % of respondents who report to a third party



b) % of respondents who report to a third party and provided cost estimates

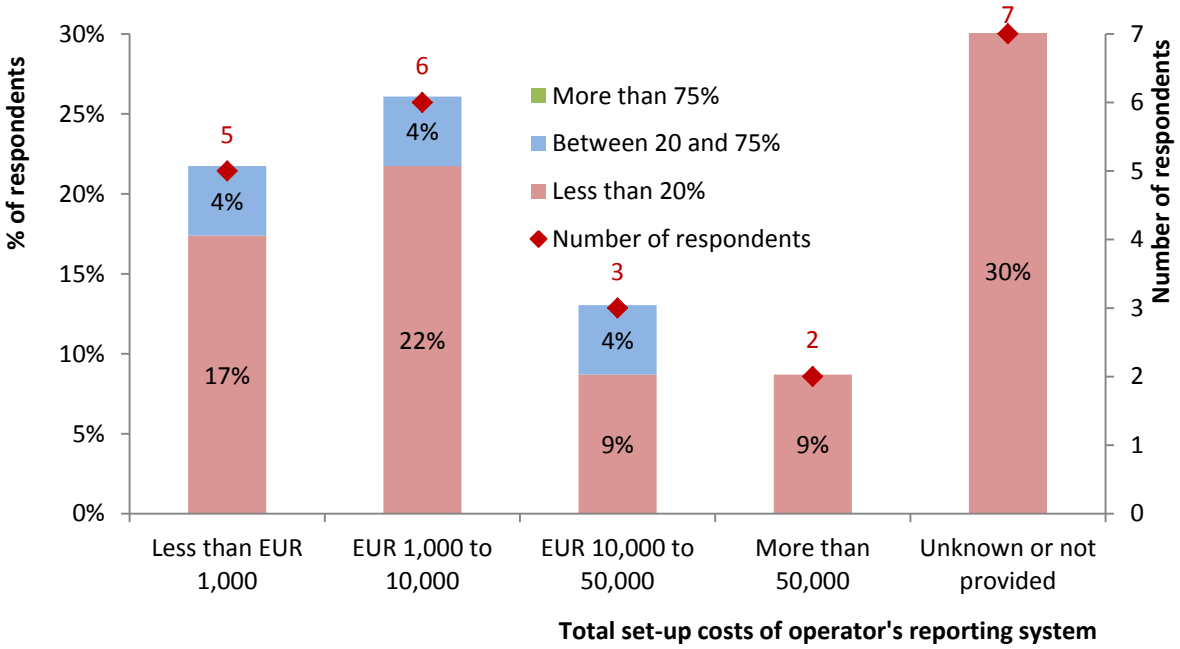


Figure 20 (Figure 21) shows annual running (total set-up) costs for reporting to a third party as a share of total annual running (set-up) costs for the operator's reporting system, by operator size (number of employees).

Most respondents who report to a third party have annual running costs for reporting to a third party of less than 20 % of total annual running costs for the operator's reporting system, across all operator sizes. The exception is operators with 10-49 employees, for whom annual running costs for reporting to a third party are equally split between less than 20 % of total annual running costs and 20-75 % of total annual running costs (Figure 20).

The picture is similar for total set-up costs for reporting to a third party. That is, for most respondents who report to a third party, set-up costs for reporting to a third party are less than 20 % of total set-up costs for the operator's reporting system, across all operator sizes. This share of respondents is greater than in the case of running costs. Only for operators with 50-250 employees are set-up costs for reporting to a third party equally split between less than 20 % of total set-up costs and 20-75 % of total set-up costs (Figure 21).

Figure 20. Annual running costs for reporting to a third party, as a share of 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)

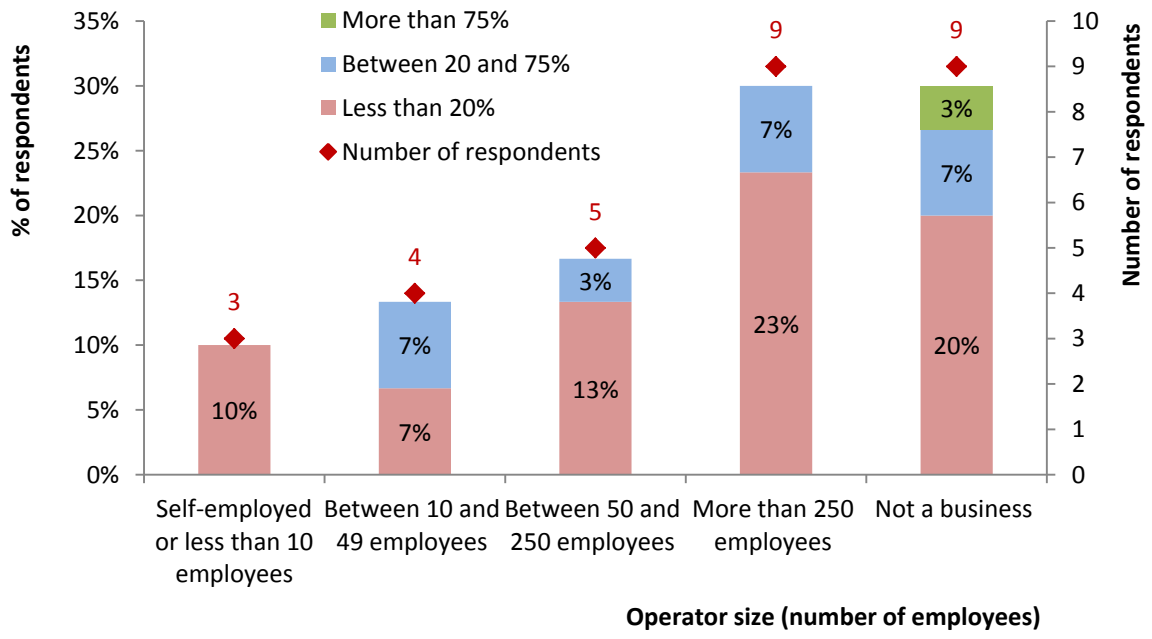
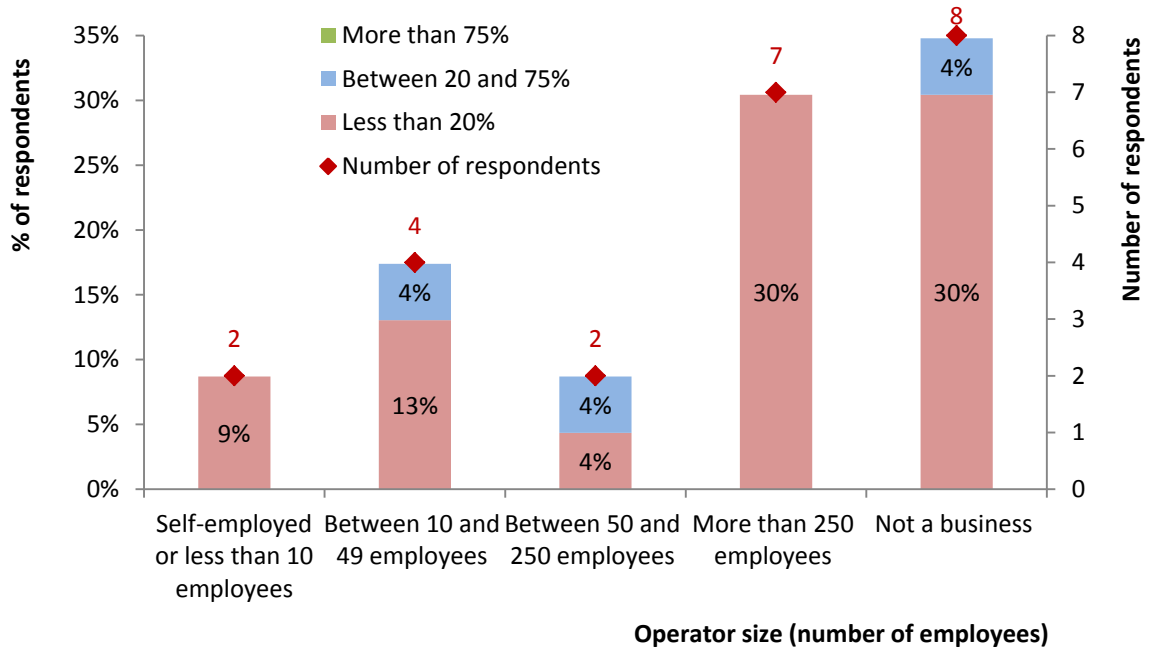


Figure 21. Set-up costs for reporting to a third party, as a share of total set-up costs, for existing reporting practices, by operator size (% of all respondents who report to a third party and provided cost estimates; Number of respondents)



5.1.2 Respondent estimated costs for reporting all relevant information

This section shows the estimated annual running costs (Figure 22) and total set-up costs (Figure 25) for reporting to a third party all information related to input/output prices, volumes (production, stocks, trade), transport costs and margins, in order to comply with an additional reporting obligation to increase market transparency. Because price data is one of the types of information most commonly reported to a third party, respondents were also asked to provide the share of estimated costs for reporting input/output price to a third party, out of total reporting costs (Figure 24 and Figure 27). All respondents were asked to provide these estimated costs. Out of the total of 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 estimated additional annual running and total set-up costs for reporting to a third party in lower cost brackets.

Regarding running costs, around 55 % of respondents who provided cost estimates suggested that estimated annual running costs for reporting to a third party would be less 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 more than EUR 25 000 (Figure 22b).

Considering only respondents who report to a third party (under existing reporting practices) and who provided cost estimates (Figure 22c), for 60 % of them estimated annual running costs for reporting to a third party are less 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 more than EUR 25 000.

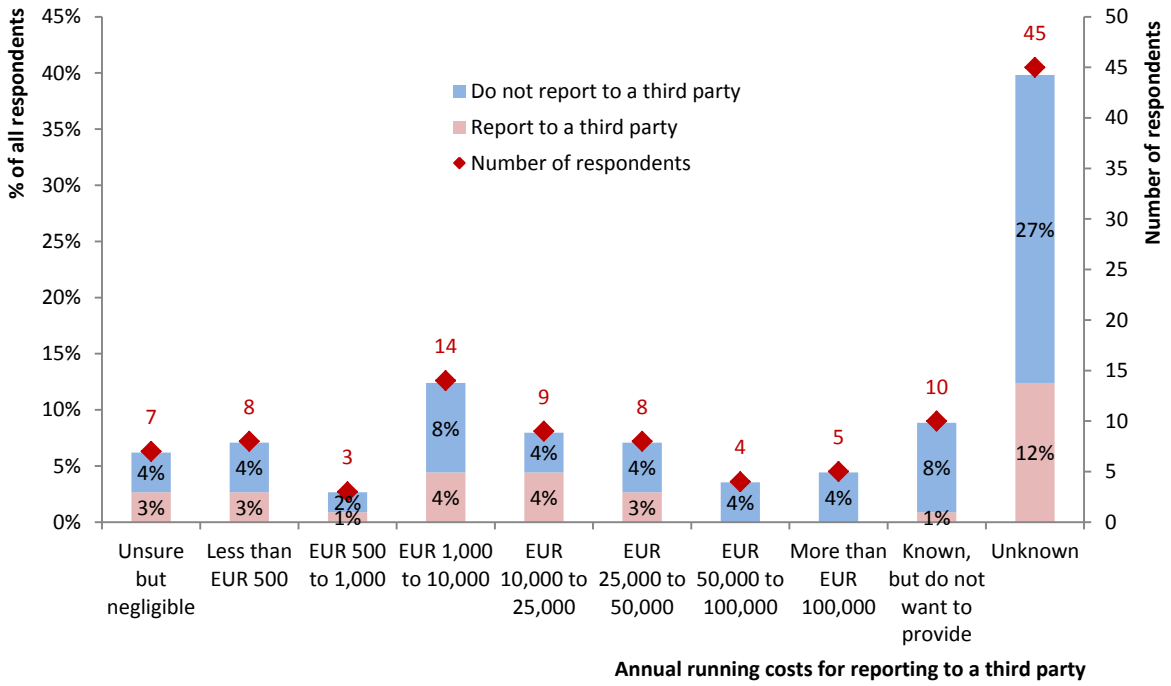
As expected, respondent estimated annual running costs for reporting to a third party tend to be positively correlated with operator size (number of employees). The majority of smaller operators (e.g. 86 % of self-employed or operators with less than 10 employees) tend to have estimated

running costs of less than EUR 10 000, while larger operators (e.g. 79 % of operators with more than 250 employees) tend to have estimated costs of more than EUR 10 000 (Figure 23).

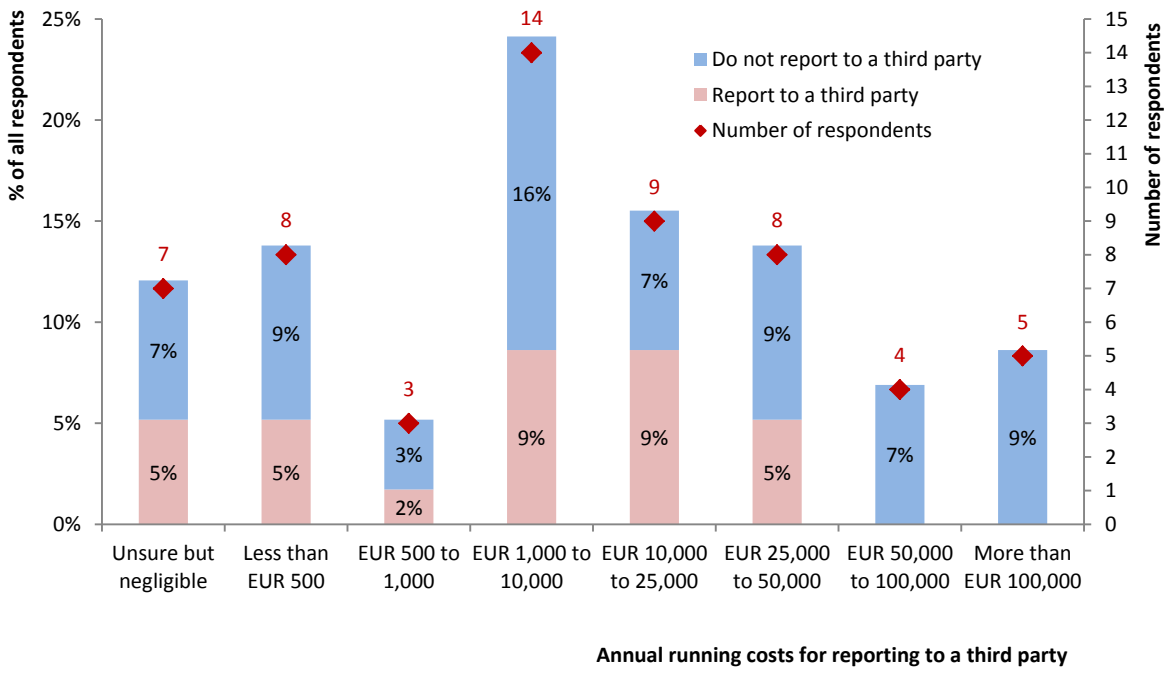
According to Figure 24, the share of respondent estimated running costs for reporting only input/output prices to a third party is less than 20 % of total annual running costs for reporting to a third party, for most operators (80 %) who provided cost estimates.

Figure 22. 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

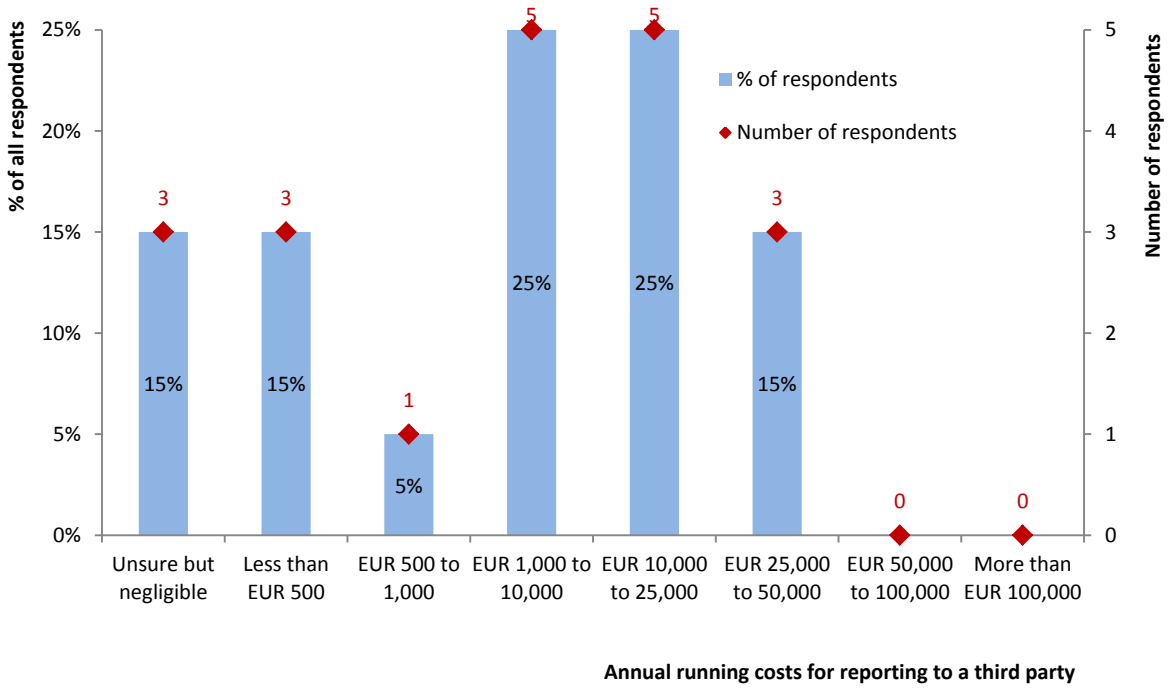


Figure 23. Respondent estimated running costs for reporting to a third party, by company size (% of respondents who provided cost estimates)

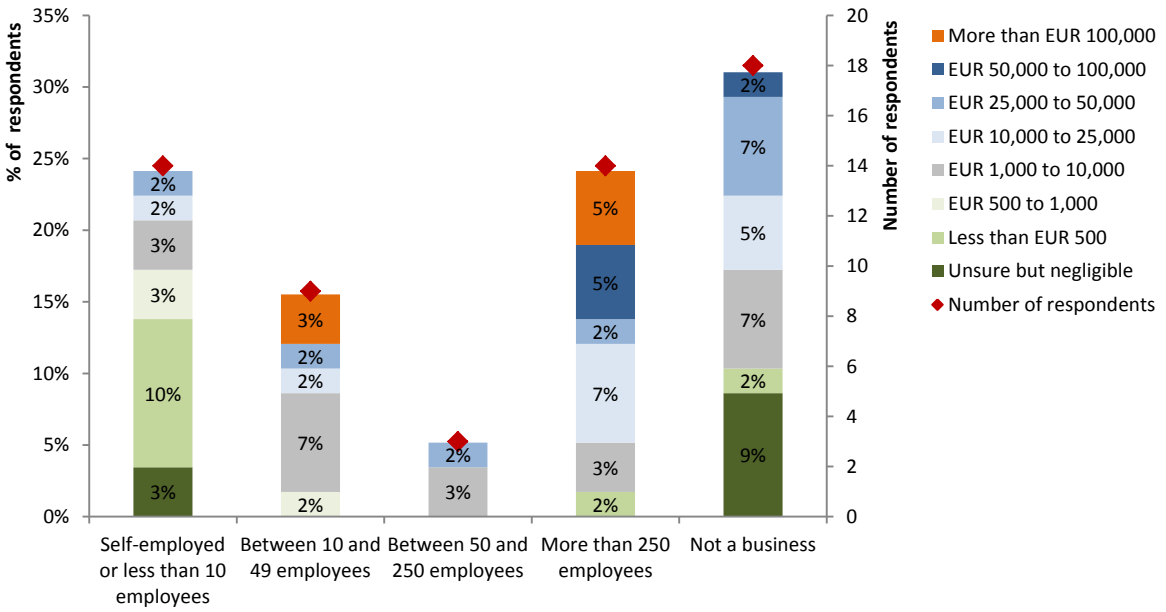
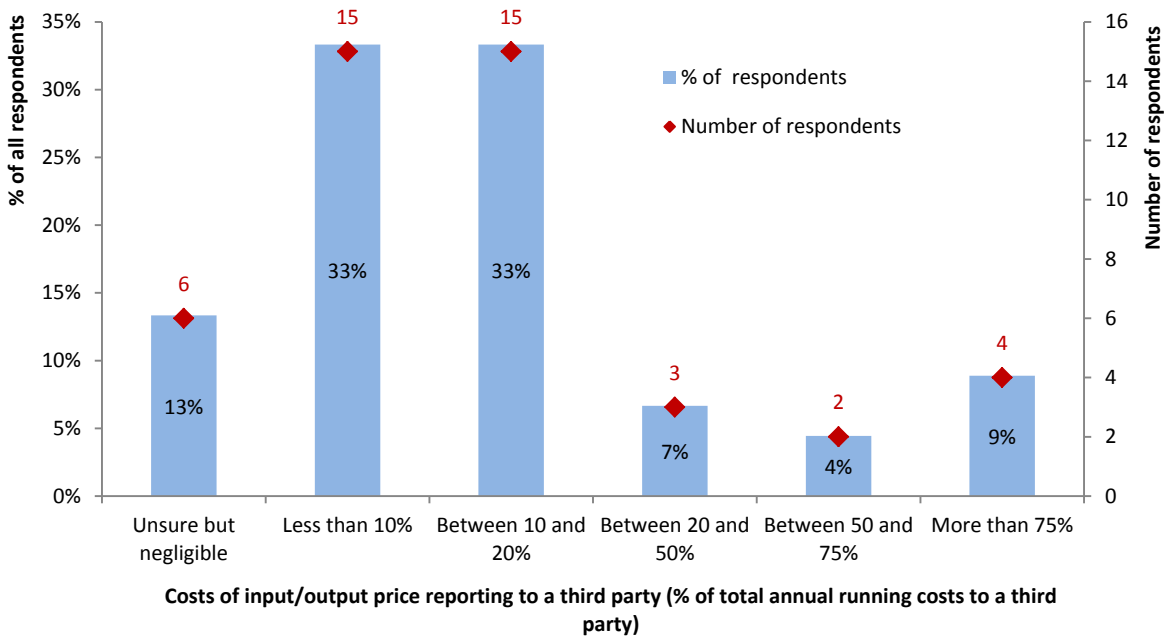


Figure 24. The share of respondent estimated running costs for reporting input/output price to a third party, out of total annual running costs for reporting to a third party (% of respondents who provided cost estimates)



Regarding set-up costs, around 52 % of respondents who provided cost estimates suggested that estimated total set-up costs for reporting to a third party would be less 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 more than EUR 20 000 (Figure 25b).

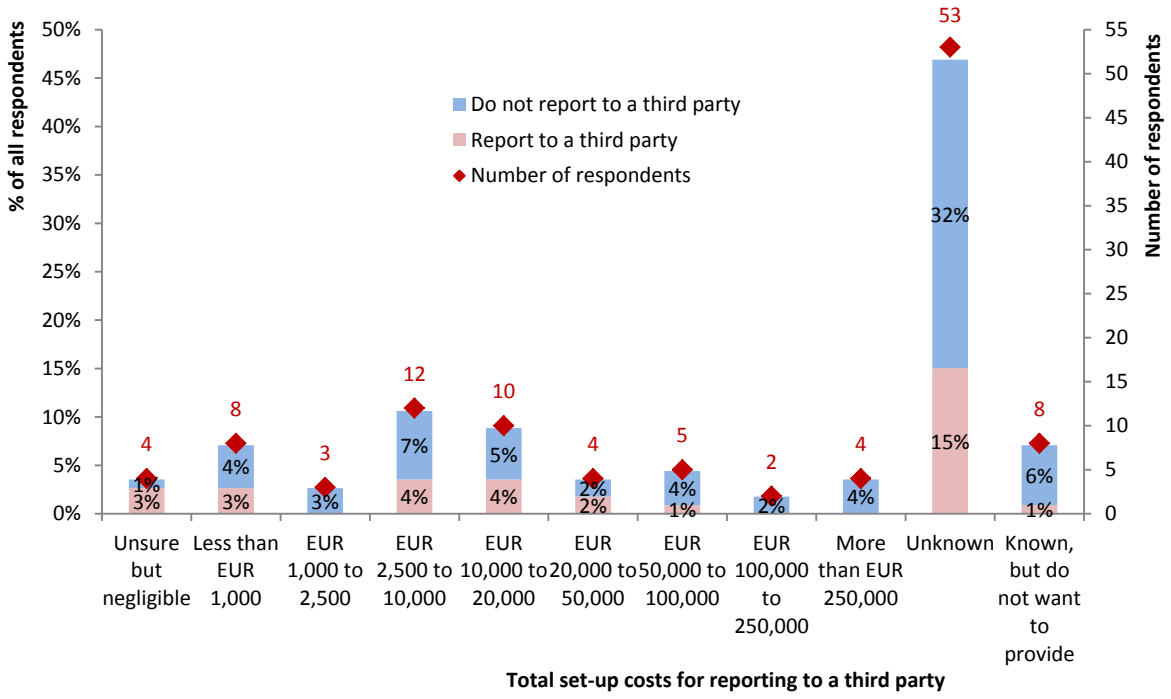
Meanwhile, considering only respondents who report to a third party and who provided cost estimates (Figure 25c), for 59 % of them estimated set-up costs for reporting to a third party are less than EUR 10 000, for 24 % the costs would be between EUR 10 000 and EUR 25 000, and for the rest of respondents from this group (18 %) the costs would be more than EUR 25 000.

Similar to the running costs, respondent estimated set-up costs for reporting to a third party tend to be positively correlated with 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 estimated running costs of less than EUR 10 000, while larger operators (e.g. 71 % of operators with more than 250 employees) tend to have estimated costs of more than EUR 10 000 (Figure 26).

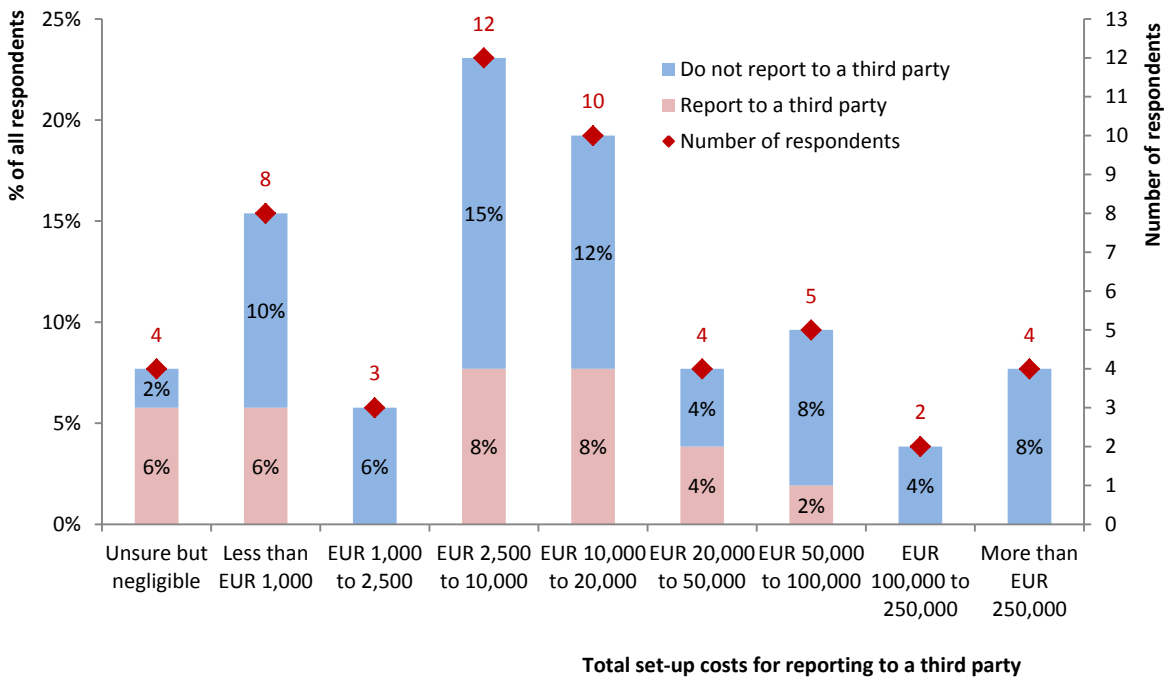
According to Figure 27, the share of respondent estimated set-up costs for reporting only input/output prices to a third party is less than 20 % of total annual running costs for reporting to a third party, for most operators (71 %) who provided cost estimates.

Figure 25. Respondent estimated <u>set-up costs</u> for 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

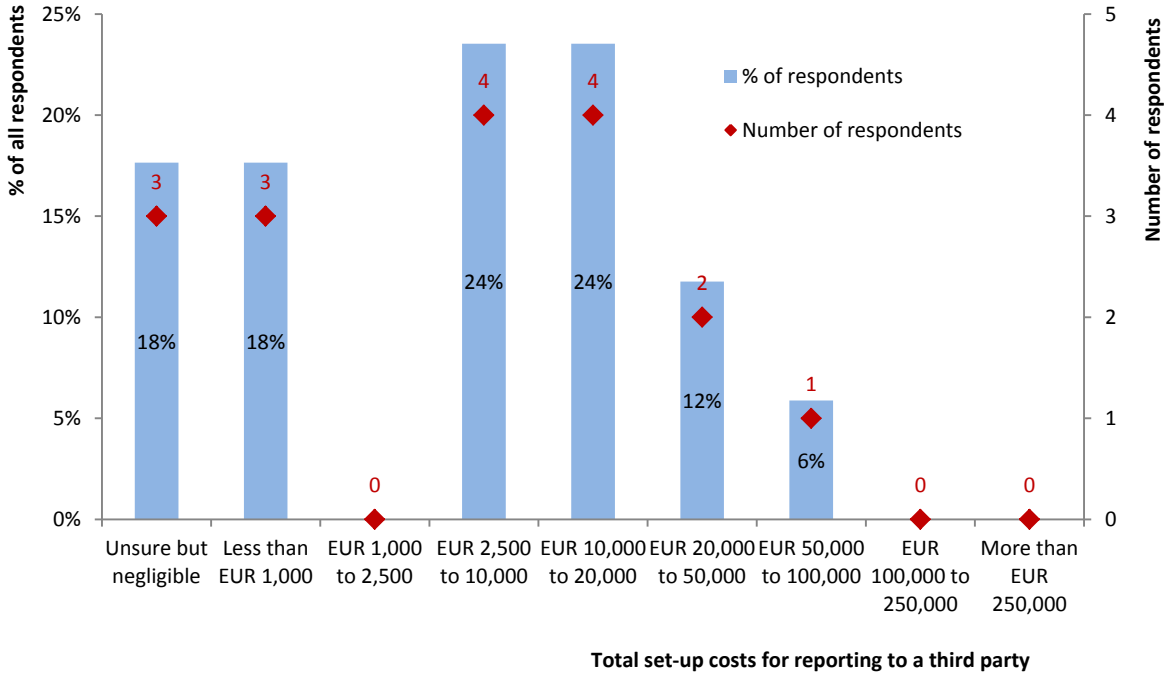


Figure 26. Respondent estimated set-up costs for reporting to a third party, by company size (% of respondents who provided cost estimates)

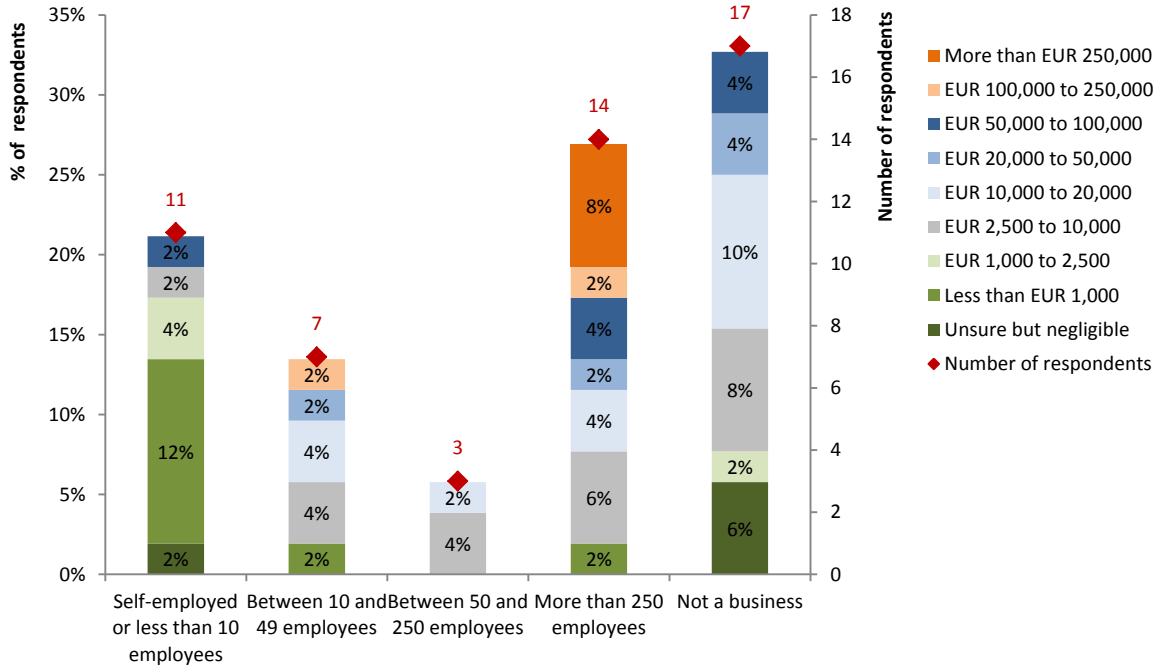


Figure 27. The share of respondent estimated set-up costs for reporting input/output price to a third party, out of total set-up costs for reporting to a third party (% of respondents who provided cost estimates)

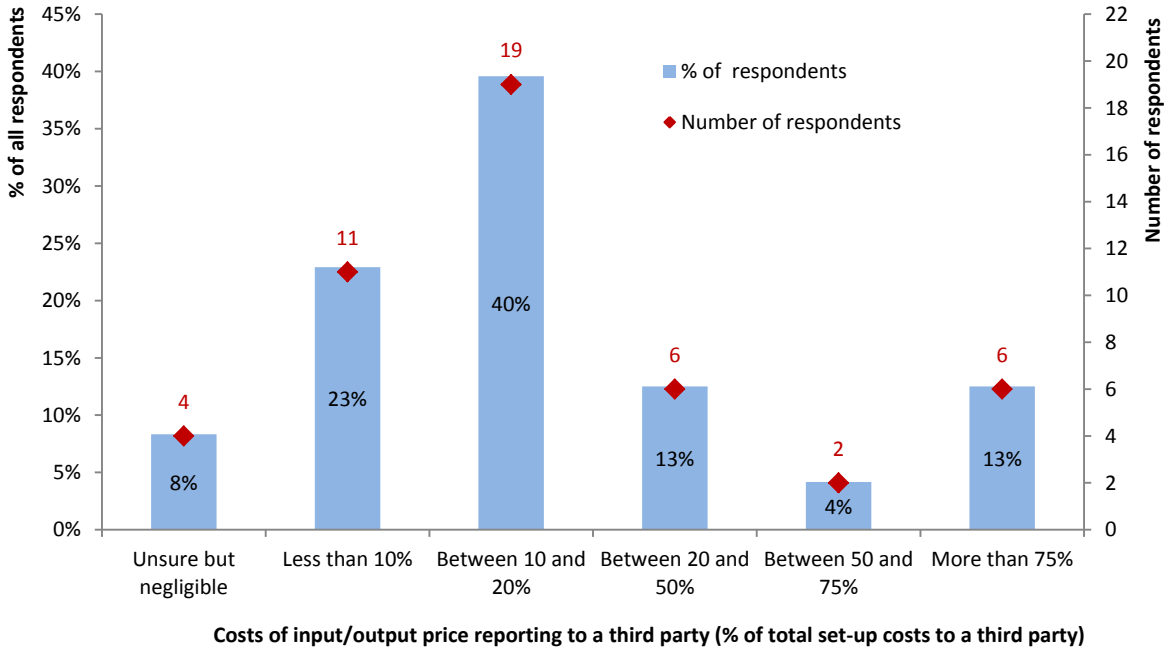


Table 1 provides econometrically estimated results by considering multiple explanatory variables influencing estimated costs for reporting to a third party. In other words, it analyses the correlation between estimated cost of reporting to a third party and several variables, notably size of operator,

segment in the value chain, existence of an internal reporting system, and level of automation in the reporting system. The advantage of this approach is that it provides information on whether the relationships are statistically significant.

The dependent variable in the regression is the ordinal variable that provides the respondent estimated (additional) costs (in EUR) for reporting relevant information to a third party – i.e. input/output prices, volumes (production, stocks, trade), transport costs and margins, by product type. The dependent variable is considered for both (i) estimated annual running costs, and (ii) estimated set-up costs for reporting to a third party ([9]). Table 2 in Annex 2 lists the explanatory variables used in the regressions ([10]).

The econometric results in Table 1 confirm the above analyses that respondent estimated annual running costs for reporting to a third party are positively correlated with operator size (number of employees) ([11]). The estimated coefficients are statistically significant and tend to increase with operator size (with operator size brackets measured in terms of number of employees) (Table 1).

The stage in the chain where the operator is active is not an important determinant of estimated running costs for reporting to a third party. All coefficients associated with stage in the chain variables are statistically insignificant. The only exceptions are organisations other than businesses (e.g. R&D institutes, Chamber of Commerce), who tend to have higher estimated running costs than operators at other stages in the chain (e.g. farmers, manufacturers, traders and distributors, and retailers). The same holds true for product sector variables. Variables capturing sector in which the operator is active are not statistically significantly different from zero (Table 1).

As expected, operators that have a reporting system in place for internal business purposes have lower estimated running costs than those that do not have such a system. Also, operators that have an automated reporting system in place have lower estimated running costs. The experience of external reporting to a third party under existing reporting practices seems not to affect the level of estimated annual running costs. Also, operators' concern about the disclosure of confidential information is not associated with higher estimated annual running costs. Interestingly, associations and other organisations tend to report lower estimated annual running costs than operators. This could be due to associations and other organisations having less experience of reporting (Table 1).

The results in Table 1 show that the variables considered in the regressions have less correlation with estimated set-up costs than with estimated annual running costs. The determinants with a statistically significant effect on estimated set-up costs are size of operator, automated reporting system, and whether operator is concerned with the disclosure of confidential information. The rest of the variables considered in the regression are not statistically significantly different from zero for estimated set-up costs.

([9]) The dependent variables for estimated annual running (set-up) costs are categorised respectively in 8 (9) ordered levels, moving from 'unsure but negligible' costs to 'more than EUR 100 000' ('more than EUR 250 000').

([10]) Note that the estimated coefficients for the ordinal logit regression cannot be directly interpreted; they only indicate the direction of change (sign).

([11]) Similar results are obtained when the size of operators is measured in terms of sales.

Table 1. Results of the regression analysis explaining respondent estimated annual running and set-up costs for reporting to a third party

	Estimated annual running costs		Estimated total set-up costs	
	OLS	Ordinal logit	OLS	Ordinal logit
NMS	-0.834	-1.284*	-0.164	-0.0683
Association and other organisation	-3.658***	-6.064***	-1.436	-1.413
Stage in the agri-food chain				
1. Farmer or farmer organisation (reference)				
2. Manufacturers	0.927	1.483	0.92	1.022
3. Intermediary traders	1.342	1.971	1.556	1.474
4. Retailers	-0.296	-0.045	-1.346	-1.838
5. Other	2.020*	3.285**	2.105	2.148
Operator size (number of employees)				
1. Self-employed or Less than 10 employees (micro enterprise) (reference)				
2. Between 10 and 49 employees (small enterprise)	2.604***	3.759***	1.688	2.335*
3. Between 50 and 250 employees (medium-sized enterprise)	1.559	2.081*	1.172	1.639
4. More than 250 employees (large enterprise)	3.219***	4.689***	3.139**	4.160***
5. Not a business (e.g. NGO, farmers' association, industry organisation, think-tank, etc.)	4.294***	6.810***	1.9	1.921
Sector				
1. Grains (reference)				
2. Fruits and vegetables (including potatoes)	0.852	1.592	0.684	0.75
3. Meat and dairy	-0.835	-1.111	-0.692	-0.836
4. Various processed food products	0.0478	0.349	0.455	1.083
5. Other	-0.118	0.247	-0.0758	-0.164
External reporting experience	0.185	0.546	-0.163	-0.304
Internal reporting	-1.779**	-2.747**	-0.522	-0.392
Automated reporting system	-1.441**	-2.275***	-1.117	-1.493*
Disclosure of confidential information	0.82	1.006	1.007	1.237*
Constant	4.584***		3.480***	
No. observations	58	58	52	52
R-squared	0.637		0.573	

Notes: *** statistically significant at 1 %; ** statistically significant at 5 %; * statistically significant at 10 %.

5.2 Structured interviews

This section summarises the main findings from the structured interviews concerning interviewees' cost estimates, as well as suggested cost drivers and constraints, in complying with increased requirements for reporting/notification to a third party related to increased market transparency.

5.2.1 Cost estimates

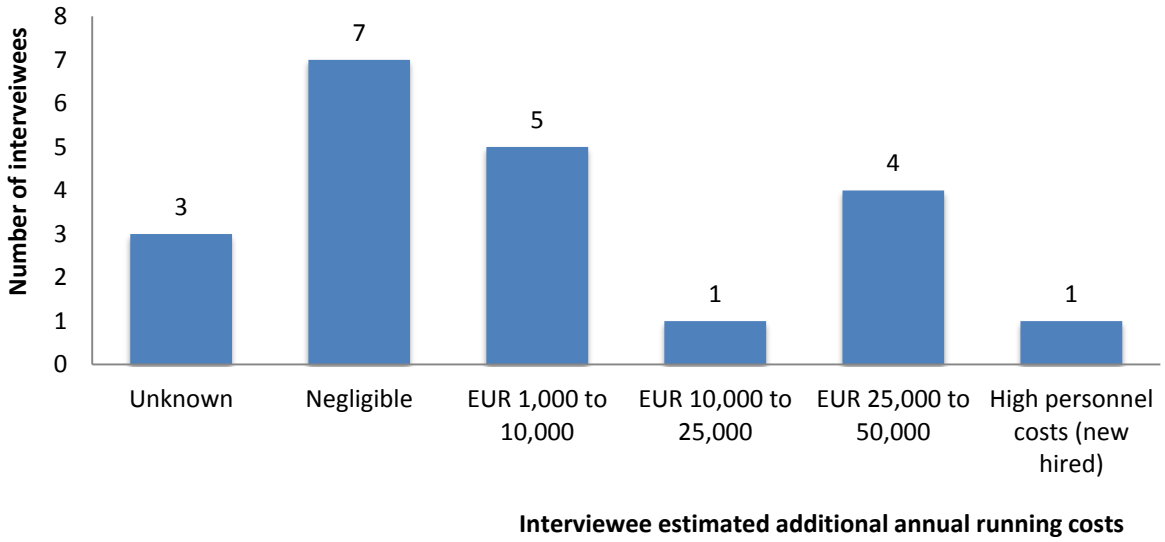
Out of 21 interviewees, 18 (86 %) were able to provide estimates of annual running costs for fulfilling an obligation to report information to a third party, and 16 (76 %) could also provide estimates of set-up costs.

Among these, 6 interviewees (29 %) considered that the additional (running and set-up) costs to fulfil an obligation to report data on output prices to a third party are mostly negligible, since in most

cases data are already available in the operators' systems and several (14) operators interviewed are already reporting this type of information to a third party, either to public authorities (e.g. government, national statistical offices, market observatories) or to private companies (e.g. market research companies).

Estimated additional running costs for reporting data to a third party vary from negligible (under EUR 1 000 a year) (7 interviewees) to EUR 1 000-10 000 or EUR 10 000-25 000 (6 for both categories combined). Some (4) interviewees provided the cost estimates in terms of employees, and report from less than a half Full-Time Equivalent (FTE) to a half FTE, conditional on the data already being collected by the operators for internal needs. One operator mentioned high costs for hiring the new employees required, and 3 interviewees could not provide an estimate of the cost (Figure 28).

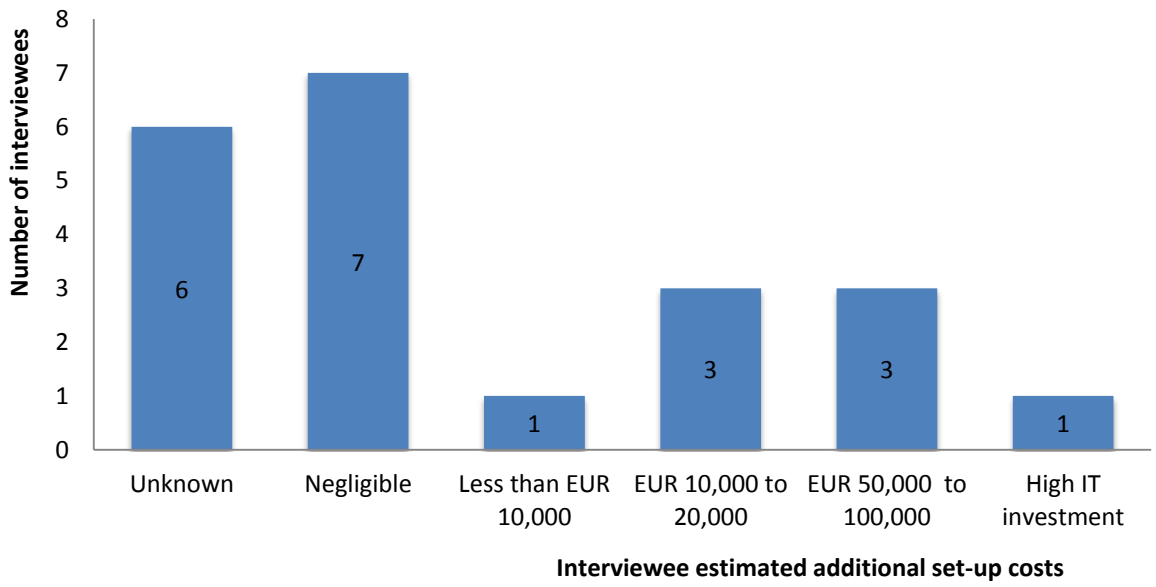
Figure 28 Interviewee estimated additional running costs for third party reporting ([12])



In terms of set-up costs for reporting to a third party, the interviewee answers provided (15) vary from negligible or up to EUR 10 000 (8) to EUR 10 000-20 000 or EUR 50 000-100 000 (6). One operator mentioned high IT investment costs due to their data collection and reporting being at a very basic level. Six interviewees could not provide an estimate of the set-up costs (Figure 29).

([12]) For the purposes of graphical representation, FTEs were converted into annual labour costs based on hourly labour costs in the country where the operator represented by the interviewee operates. The hourly labour costs were extracted from Eurostat (Labour cost levels by NACE Rev. 2 activity), using the cost by MS for 'Professional, scientific and technical activities' for the most recent year available (2017). Overall, it is difficult to interpret these figures for two reasons. Firstly, there are large differences in hourly labour costs between MS; costs in some MS are twice as high as in others. Secondly, 'negligible' costs reflect a perception by interviewees which is likely to depend on the size of operator.

Figure 29 Interviewee estimated additional set-up costs for third party reporting



The interviewees revealed that reporting data on volumes (e.g. production, trade, stocks) would be similar to prices, in that if these data are available in the internal company reporting system, additional reporting to a third party would not involve a major investment or considerably increased running costs.

However, if the data are not available in the internal and automated reporting systems with the disaggregation required (for example, transport costs or margins at product level), this could imply higher set-up costs to put the system in place (e.g. methodological development, IT), while additional running costs could be negligible if the system is automated. However, if the system is not automated, this could lead to higher running costs, driven by increased costs for personnel needed to fulfil the reporting obligations.

Figure 30. Respondent estimated <u>running costs</u> for reporting to a third party, by stage in food chain (number of interviewees)

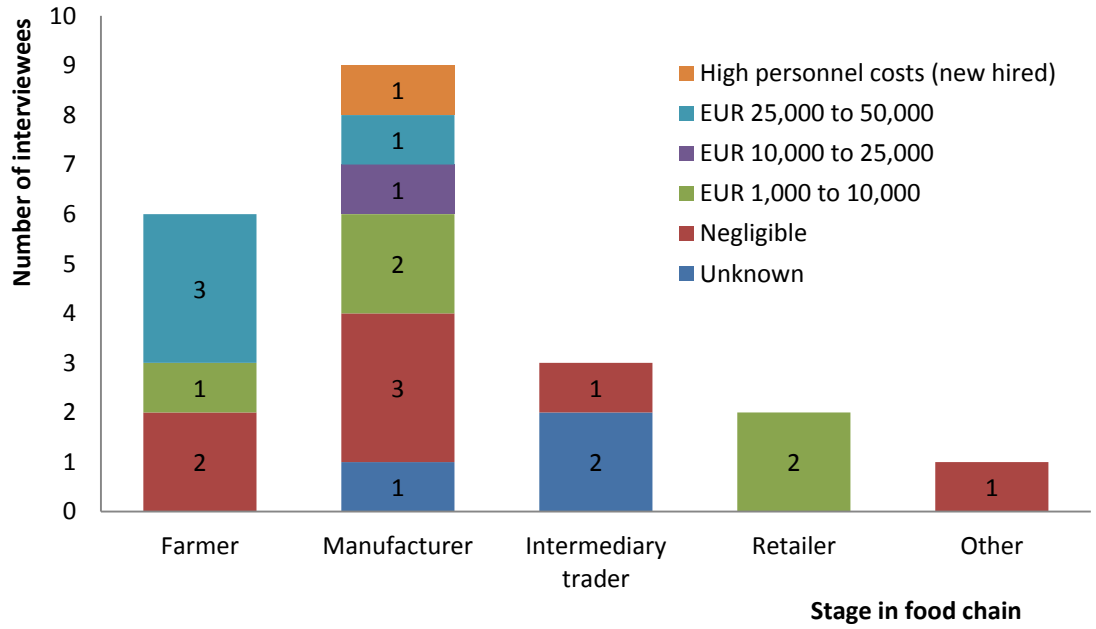
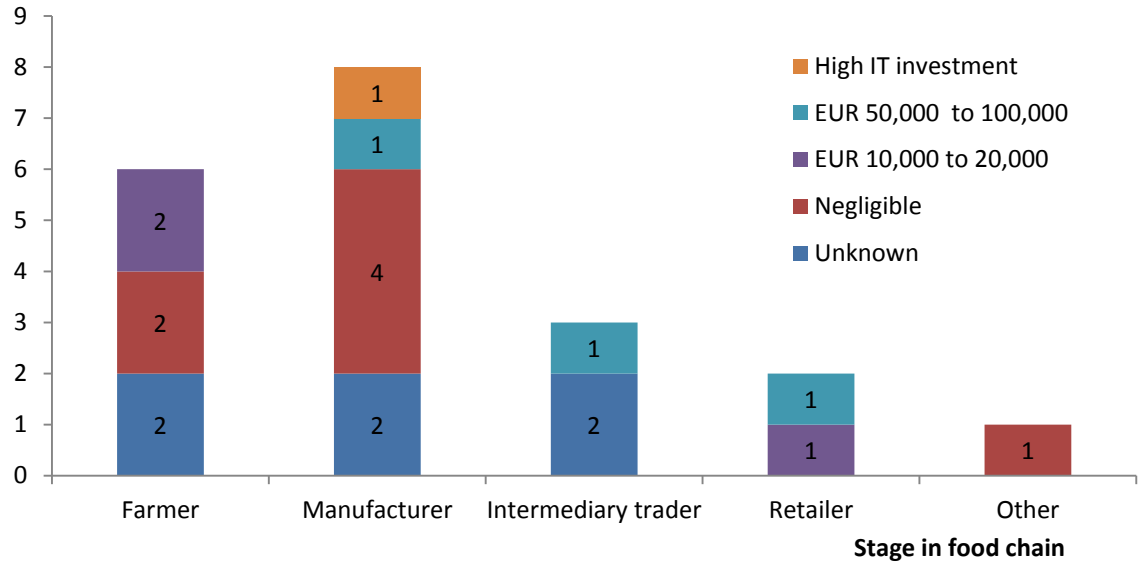


Figure 31. Respondent estimated set-up costs for reporting to a third party, by stage in food chain (number of interviewees)



5.2.2 Cost drivers and constraints

The main cost drivers for reporting 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 produced and number of processes through which products pass. Some interviewees commented that their accounting systems do not break down costs by product but by broader product categories, and that only direct costs are automatically generated within the internal reporting system. However, the majority of interviewees stressed that automation of data collection and aggregation could significantly reduce reporting costs for operators.

The majority of interviewees emphasised that the costs of market transparency do not just include the direct costs of reporting to a third party; there could be significant indirect costs, notably the following.

- It could result in vulnerability for operators in the segments of the chain with established market transparency, if other segments of the chain are not or are less transparent (particularly in the downstream sector). The indirect costs relate to the risks caused by asymmetry in availability/use of information, which may lead among other things to disadvantages in price negotiation and unfair domestic and international competition.
- In markets with a limited number of actors, breaches of data confidentiality may emerge.
- Although price transparency may provide important benchmark opportunities, it can also increase competition pressures, leading among other things to price decreases (e.g. for farmers).

An important constraint mentioned by some interviewees is product definition and methodology. Products come in different sizes, qualities, composition and varieties, which should be considered in the data collection methodology in order to provide information that makes sense (e.g. to allow comparison across food chain segments and over time).

Some interviewees stressed that it is often difficult or challenging to establish a link between the price (or margins) for the raw agricultural commodity and the price (or margins) for final processed products in downstream segments, since products often undergo a complex transformation and

distribution process. A suggested solution is to report (produce) indices for final processed products, with high (significant) content of the agricultural commodity.

In addition, a number of interviewees mentioned the need to establish a quality control process to guarantee that reported information is correct. If information is correct, all operators can benefit; otherwise some operators might lose out as a result of market transparency. In particular, several interviewees stressed that opportunistic/strategic behaviour by operators in reporting to a third party needs to be avoided. In this respect, the experience of some operators interviewed shows that quality control procedures for reporting to a third party can be time consuming and thus costly (particularly in terms of personnel costs).

For some interviewees, reporting of input prices is sensitive and considered to be against competition rules.

In addition, although a majority of respondents agree that reporting of selling prices to a third party is technically feasible and not costly, since data are very often already reported to governmental market statistics and/or private market research companies, some interviewees indicated that individual selling prices are also sensitive, since there can be a risk of collusion in certain sectors.

Indeed, transparency beyond prices and volumes seems to be technically/methodologically more difficult to obtain or calculate, and thus more costly to report. This is particularly relevant for margins (at product level) and transport costs. Full transparency on margins was considered by several interviewees to be sharing sensitive (private) information from a competition point of view, and is often perceived as divulging trade secrets. This line of argument suggests that it is not only a problem of feasibility, but of the desirability of sharing such data.

In particular, in segments where reporting to a third party is relatively extensive (i.e. in stages of the food supply chain where markets are relatively transparent, usually for prices and volumes), some interviewees stressed that additional reporting requirements should not go beyond what it is already reported, because what is already available is sufficient to ensure market transparency, or because costs are too high for reporting additional information (e.g. margins, transport costs). Furthermore, some interviewees highlighted unbalanced reporting across different stages of the supply chain, which puts those segments with higher transparency in a disadvantageous competitive position vis-à-vis segments with lower transparency.

In summary, up to a certain limit, market transparency is considered beneficial for benchmarking and understanding of the markets, 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 operator's internal information system, but the indirect costs related to market risks (e.g. unbalanced or asymmetric information, competition pressures or disclosure of confidential information and trade secrets) are often perceived as very significant by interviewees. Furthermore, for data to be useful, there are concerns about guaranteeing quality and generating trust, and ensuring knowledge transfer and training in how to use the information available.

Automation of reporting is perceived as necessary by some interviewees, particularly when reporting frequency is high or increases. This is because reporting costs are positively correlated with 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 argued for mandatory reporting, regulated at EU level (e.g. by the European Commission) and not at Member State level, in order to increase the efficiency of market transparency.

6 Summary comments

This report provides analyses on cost estimates by operators in EU agri-food supply chains for providing information to a third party, in order to contribute to improved market transparency in the agri-food chain. The secondary objective of this report is to analyse potential benefits and risks of increased market transparency, as perceived by operators in the agri-food supply chain. This analysis is relevant in contributing to better understanding of the potential implications of the Commission policy initiative to increase price transparency in the agri-food supply chain (European Commission, 2019a; 2019b). The analyses in this report are based on an online survey and structured interviews conducted among operators in the agri-food supply chain between 23 October 2018 and 5 February 2019.

In general, the online survey and structured interviews provided consistent results in terms of benefits and risks from increased market transparency, as well as operators' costs for reporting to a third party. However, differences are also observed: there cannot be a straightforward comparison between the two data collection approaches, due to differences in sample size but also because each approach has its own advantages and they provide qualitatively different types of information.

There are similarities between the online survey and the structured interviews in terms of the types of benefits and risks from increased price transparency along the agri-food supply chain identified by respondents. For example, for benefits this includes improvement in market knowledge, increased opportunities for risk management (or better decision-making), and 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 in selling prices.

Besides price information, respondents expressed that availability of information on production volumes, consumption and trade volume could contribute to increased market transparency along the agri-food supply chain. Meanwhile, gross and net margins are the factors most often reported by respondents as generating risk from increased market transparency. These results corroborate the similarities in results between the online survey and the structured interviews.

However, some differences could also be observed between the online survey and structured interviews, in terms of the types of benefits and risks from increased market transparency. For example, respondents tended to stress some benefits from increased market transparency more in structured interviews than in the online survey, such as that it can generate dialogue, provide benchmark opportunities and enhance trust among operators at different stages in the chain. The structured interviews revealed additional benefits, such as bringing unfair trade practices to light. With respect to risks, respondents in the structured interviews highlighted the risks of reporting inaccurate data which could be due to strategic/opportunistic behaviour by some operators, and the lack of methodology and established product definitions to make it possible to compare across sectors and stages in the agri-food chain. Another important risk factor mentioned by some respondents in the structured interviews was asymmetric reporting and asymmetric data availability across different stages in the agri-food supply chain.

Furthermore, the online survey indicates more respondents expressed that they would benefit from increased price transparency than those that expressed that they would face risks. The online survey results also show that a greater share of farmers would benefit from increased price transparency, compared with operators from other stages in the chain. By contrast, manufacturers, traders and distributors, and retailers appear to be more concerned than farmers about risks from increased price transparency. Overall, the online survey reveals a greater share of respondents perceive a net benefit from increased market transparency than those that perceive the opposite (i.e. net loss). Again, the share of farmers that report net benefits is greater that the share of those that report net loss from increased market transparency, while more manufacturers, traders and distributors, and retailers report net loss than net benefits.

Many operators currently report various types of information to a third party, such as to a public authority, a private company or other agencies. Hence, there are existing practices in place among operators for reporting to a third party. The results from the online survey show that, for the majority of respondents (73 %), annual running costs for reporting to a third party under existing practices are less than 20 % of total annual running costs for the operator's reporting system. Translated into monetary values, annual running costs amount to less than EUR 10 000 for the majority of respondents (74 %); for a significant proportion of respondents (44 %), they represent less than EUR 2 000, while for 19 % they are less than EUR 100 (Figure 32). The online survey shows similar results for set-up costs for reporting to a third party under existing practices; these are one-time expenditures incurred in setting up the reporting system. That is, for most respondents (87 %), set-up costs for reporting to a third party are less than 20 % of total set-up costs for the operator's reporting system. In monetary values, set-up costs represent less than EUR 10 000 for the majority of respondents (81 %); for 63 % they are less than EUR 2 000, while for 31 % they are less than EUR 1 000 (Figure 33).

Operators' actual reporting experience, under existing practices for reporting to a third party, might imply that the cost values provided are more accurate. However, there is significant variation between respondents in the frequency and type of information reported to a third party under existing reporting practices, which complicates comparison between respondents. When respondents were asked in the online survey about estimated costs for reporting all relevant information (i.e. input/output prices, volumes, transport costs and margins), the costs reported tended to be greater than those reported for existing practices. That is, for 60 % of respondents estimated annual running costs for reporting to a third party are less than EUR 10 000, while for 35 % of respondents they are less than EUR 1 000. With respect to estimated set-up costs, for 59 % of respondents they are less than EUR 10 000, while for 35 % of respondents they are less than EUR 1 000.

The cost values obtained through the online survey for both annual running and set-up costs, and for both existing reporting practices and estimated costs, are positively correlated with operator size – meaning that larger operators have higher costs in absolute value than smaller ones.

Furthermore, the online survey results reveal that costs for reporting only input/output prices to a third party are considerably lower than the total cost of reporting all relevant information beyond prices. That is, 80 % (71 %) of respondents reported that estimated annual running (set-up) costs for reporting only input/output prices are less than 20 % of total estimated annual running (set-up) costs for reporting all relevant information to a third party.

Findings 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, (running and set-up) costs for reporting prices to a third party are usually considered negligible, since in most cases these data are already available in the operators' internal reporting systems and many operators are already reporting this type of information to a third party. This appears similar for reporting additional information to a third party such as production, trade and stocks. If these data are available in the internal company management system, reporting them to a third party would not imply significant additional set-up or running costs.

Similar to the online survey, findings from the structured interviews imply that reporting beyond prices and volumes (e.g. production, trade, stocks) appears more costly. This is particularly applicable to margins and transport costs.

Findings from structured interviews and the online survey reveal that automation of reporting is perceived necessary to reduce reporting costs, in particular where reporting frequency is high because reporting costs are positively correlated with frequency of reporting. By contrast, manual reporting with higher frequency would involve employing additional labour, causing a significant increase in reporting costs.

The structured interviews show 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 operator's system. Indirect costs related to market risks (e.g. unbalanced or asymmetric information, competition pressures or disclosure of confidential information and trade secrets) are often perceived as more significant.

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List of abbreviations

AMTF	Agricultural Markets Task Force
DG AGRI	Directorate-General for Agriculture and Rural Development
EU	European Union
FTE	Full Time Equivalent
JRC	Joint Research Centre
MS	Member State
NGO	Non-governmental organisation
OLS	Ordinary Least Squares

Annex

Annex 1 - Questionnaire

Questionnaire to operators in the agri-food supply chain on data reporting related to market transparency

Fields marked with * are mandatory.

INTRODUCTION

The Joint Research Centre (JRC) of the European Commission is implementing a project about the monitoring of prices in EU agri-food supply chains. This project is a follow-up of the recommendations of the Agricultural Markets Task Force (AMTF) which had been established by the Commission in 2016. The AMTF suggested, amongst others, that the Commission should take steps to increase transparency in order to foster more competition along the agri-food supply chain. It recommended in particular introducing mandatory price reporting to cover information gaps in the agri-food supply chain, collecting the data in a timely and standardised manner, and disseminating it in a duly aggregated form. The AMTF suggested further that consumption data and producers' input prices could be integrated into existing information systems (market and prices, dashboards, observatories), and that the calculation of a "Food Euro" for all major food products (akin to the "Food Dollar") at EU and Member State level could be useful – without duplicating data collection efforts that are already ongoing.

The purpose of this questionnaire is to better understand the costs to operators for providing information (e.g. prices, volumes, transport costs) in order to contribute to improved transparency in EU agri-food supply chains. The present questionnaire targets in particular companies and businesses (including SMEs and farmers) that are active at the primary production, distribution, processing, wholesale or retail stages of the agri-food supply chain, as well as related organisations that represent or serve these companies and businesses. An analytical summary of the answers may be made publicly available by the Commission's services.

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The questionnaire should take about 15 minutes. The deadline for completing the questionnaire is 15 December 2018. Thank you for your participation.

Disclaimer: Personal data protection is of the utmost importance. Please note that all answers are provided on a voluntary basis and collected anonymously. No link will be made between these answers and any information permitting to identify their origin. Every answer will be allocated a random processing number. The Data Controller guarantees that anonymity will be respected. Statistical results will be published in an aggregated form which will not allow individuals or organisations to be identified.

I. About the business or organisation that you represent

*** Function (and role) of the respondent**

*** Location of the business or organisation (head office)**

- Austria
- Belgium
- Bulgaria
- Croatia
- Cyprus
- Czech Republic
- Denmark
- Estonia
- Finland
- France
- Germany
- Greece
- Hungary
- Ireland
- Italy
- Latvia
- Lithuania
- Luxembourg
- Malta
- Netherlands
- Poland
- Portugal
- Romania
- Slovak Republic
- Slovenia
- Spain
- Sweden
- United Kingdom

*If other, please specify

*Countries where the business or organisation operates (Select all that apply)

- [ ] Austria
- [ ] Belgium
- [ ] Bulgaria
- [ ] Croatia
- [ ] Cyprus
- [ ] Czech Republic
- [ ] Denmark
- [ ] Estonia
- [ ] Finland
- [ ] France
- [ ] Germany
- [ ] Greece
- [ ] Hungary
- [ ] Ireland
- [ ] Italy
- [ ] Latvia
- [ ] Lithuania
- [ ] Luxembourg
- [ ] Malta
- [ ] Netherlands
- [ ] Poland
- [ ] Portugal
- [ ] Romania
- [ ] Slovak Republic
- [ ] Slovenia
- [ ] Spain
- [ ] Sweden
- [ ] United Kingdom
- [ ] Non-EU countries, please specify

Please specify all non-EU countries

*Which type of business or organisation do you represent?

- ( ) Financial services providers (e.g. bank, insurance company, stock exchange)
- ( ) Importers (e.g. inputs or agricultural products)
- ( ) Input provider (e.g. fertiliser company, feed supplier)
- ( ) Farmer

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- Farmer organisations (e.g. agricultural cooperative, producer organisation)
- Manufacturers (processing agricultural or intermediate products into food products)
- Intermediary traders (e.g. distributors or wholesalers)
- Food services providers (e.g. hotel, restaurant or catering)
- Retailers (selling food products to consumers)
- Consumers
- Other

***If other, please specify**

***How many employees does the business that you represent have?**

- Not a business (e.g. NGO, farmers' association, industry organisation, think-tank, etc.)
- More than 250 employees (large enterprise)
- Between 50 and 250 employees (medium-sized enterprise)
- Between 10 and 49 employees (small enterprise)
- Less than 10 employees (micro enterprise)
- Self-employed (micro enterprise)

***What is the annual turnover (revenue) of the business that you represent?**

- Not a business (e.g. NGO, farmers' association, industry organisation, think-tank, etc.)
- Less than EUR 100,000
- EUR 100,000 to 500,000
- EUR 500,000 to 2 million
- EUR 2 to 10 million
- EUR 10 to 50 million
- EUR 50 million and more

***Which product group is the main focus of the enterprise or organisation that you represent?**

- Various agricultural input products (e.g. fertiliser, pesticides, etc.)
- Various primary agricultural products
- Various processed food products
- Various meat products
- Beef
- Pork
- Poultry
- Other meat
- Dairy products
- Fruit & vegetables
- Wine
- Olive oil
- Grains (cereals, oilseeds, protein crops)
- Sugar
- Potatoes
- Flowers

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Other

*If other, please specify

II. About current data reporting practices and systems in the business or organisation that you represent

Is the business or organisation that you represent involved in systematic internal or external reporting of the following data categories?

Notes: (1) For example, for management purposes; (2) For example, to a government agency, national statistical office, private market research companies collecting data or other organizations (e.g. associations, NGOs)

	Yes, internally (1)	Yes, internally (1) and externally (2)	No
*Output (selling) prices			
*Input (purchase) prices			
*Gross margins ((price minus variable costs) divided by price)			
*Operating (net) margins ((price minus total costs) divided by price)			
*Production volumes			
*Stocks			
*Trade values			
*Trade volumes			
*Consumption and utilization			
*Sustainability indicators (e.g. carbon footprint)			
*Transport costs			
*Other			

***If other, please specify**

***What type of external organization do you report data to?**

- Public agency (e.g. government agency, national statistical office)
- Private company (e.g. market research company)
- Other agencies (e.g. associations, NGOs)

Do the reporting tasks imply for the business or organisation that you represent a significant amount of staff time or are there IT systems in place that allow for automatic data retrieving?

	Mainly staff time	Mix of staff time and automated systems	Automated systems
* Output (selling) prices	○	○	○
* Input (purchase) prices	○	○	○
* Gross margins ((price minus variable costs) divided by price)	○	○	○
* Operating (net) margins ((price minus total costs) divided by price)	○	○	○
* Production volumes	○	○	○
* Stocks	○	○	○
* Trade values	○	○	○
* Trade volumes	○	○	○
* Consumption and utilization	○	○	○
* Sustainability indicators (e.g. carbon footprint)	○	○	○
* Transport costs	○	○	○
* Other (as specified above)	○	○	○

At which level of detail is information reported by the business or organisation that you represent?

	Aggregated at business /organisation level	All products disaggregated by product type	Only key products	Only key products and high growth products	Do not know
* Output (selling) prices	☐	☐	☐	☐	☐
* Input (purchase) prices	☐	☐	☐	☐	☐
* Gross margins ((price minus variable costs) divided by price)	☐	☐	☐	☐	☐
* Operating (net) margins ((price minus total costs) divided by price)	☐	☐	☐	☐	☐
* Production volumes	☐	☐	☐	☐	☐
* Stocks	☐	☐	☐	☐	☐

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* Trade values	☐	☐	☐	☐	☐
* Trade volumes	☐	☐	☐	☐	☐
* Transport costs	☐	☐	☐	☐	☐
* Other (as specified above)	☐	☐	☐	☐	☐

How often is information reported by product type by the business or organisation that you represent?

	Daily or more frequently	Weekly	Fortnightly	Monthly	Quarterly	Semi-annually	Annually	Do not know
* Output (selling) prices	☐	☐	☐	☐	☐	☐	☐	☐
* Input (purchase) prices	☐	☐	☐	☐	☐	☐	☐	☐
* Gross margins ((price minus variable costs) divided by price)	☐	☐	☐	☐	☐	☐	☐	☐
* Operating (net) margins ((price minus total costs) divided by price)	☐	☐	☐	☐	☐	☐	☐	☐

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* Production volumes	☐	☐	☐	☐	☐	☐	☐	☐
* Stocks	☐	☐	☐	☐	☐	☐	☐	☐
* Trade values	☐	☐	☐	☐	☐	☐	☐	☐
* Trade volumes	☐	☐	☐	☐	☐	☐	☐	☐
* Transport costs	☐	☐	☐	☐	☐	☐	☐	☐
* Other (as specified above)	☐	☐	☐	☐	☐	☐	☐	☐

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***In what format are the different types of information mainly reported?**

- ☐ Paper
- ☐ Downloadable files (e.g. Excel, csv, etc.)
- ☐ Software/application/intranet
- ☐ Internet
- ☐ Other

If other, please specify

III. Potential benefits and risks of increased market transparency along the agri-food supply chain related to increased reporting by all market operators

***Would the business or organisation that you represent benefit from increased price transparency a long the agri-food supply chain?**

Note: Increased price transparency in this context refers to the dissemination of information on input and output prices reported by all operators in the agri-food supply chain, assuming the information, disaggregated by product type but aggregated across all operators, is made available to all operators free of charge, where confidentiality and data protection are ensured.

- ○ Yes, to a large extent
- ○ Yes, to some extent
- ○ Yes, to a minor extent
- ○ Not at all
- ○ Do not know

***What are the main benefits for the business or organisation that you represent of increased price transparency?**

between 1 and 3 choices

- ☐ Reduce uncertainty
- ☐ Increase opportunities for risk management (futures markets, insurance options, access to credit, improved contracts, etc.)
- ☐ Improve knowledge on 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)
- ☐ Improve investment decisions in the long term
- ☐ Improve production decisions in the short term
- ☐ Level the playing field for all operators in the agri-food supply chain (access to market information, bargaining power, mutual trust)
- ☐ Help to identify opportunities (better offer of products a better market) within their country
- ☐ Help to identify opportunities (better offer of products or better market) across Member States' borders
- ☐ Increase the effectiveness of public policies (e.g. improve market development, increase competition, avoid unintended consequences)
- ☐ Improve the sustainability of the agri-food supply chain and reduce food waste
- ☐ Increase consumer awareness of the economic situation of food operators

- [ ] Improves cooperation with other operators in the agri-food supply chain
- [ ] Improves trust between operators in the agri-food supply chain
- [ ] Increase of selling prices
- [ ] Decrease of input prices
- [ ] None
- [ ] Do not know
- [ ] Other

*If other, please specify

***Would the business or organisation that you represent face additional risks from increased price transparency along the agri-food supply chain?**

Note: Increased price transparency in this context refers to the dissemination of information on input and output prices reported by all operators in the agri-food supply chain, assuming the information, disaggregated by product type but aggregated across all operators, is made available to all operators free of charge, where confidentiality and data protection are ensured.

- ( ) Yes, to a large extent
- ( ) Yes, to some extent
- ( ) Yes, to a minor extent
- ( ) Not at all
- ( ) Do not know

***What are the main additional risks of increased price transparency faced by the business or organisation that you represent?**

between 1 and 3 choices

- [ ] Higher competitive pressure
- [ ] Decrease of selling prices
- [ ] Increase of input prices
- [ ] Lack of confidentiality (divulgence of trade secrets)
- [ ] None
- [ ] Do not know
- [ ] Other

If other, please specify

Apart from price transparency, would other types of additional information contributing to increased market transparency along the agri-food supply chain benefit the business or organisation that you represent?

Note: Increased market transparency in this context refers to the dissemination of (additional) information beyond prices reported by all operators in the agri-food supply chain, assuming the information, disaggregated by product type but aggregated across all operators, is made available to all operators free of charge, where confidentiality and data protection are ensured.

	Benefit	No benefit	Do not know
*Gross margins ((price minus variable costs) divided by price)	( )	( )	( )

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* Operating (net) margins ((price minus total costs) divided by price)			
* Production volumes			
* Stocks			
* Trade value			
* Trade volume			
* Consumption and utilisation			
* Sustainability indicators (e.g. carbon footprint)			
* Transport costs			
* Other			

If other, please specify

Apart from price transparency, would other types of additional information contributing to increased market transparency along the agri-food supply chain generate risk for the business or organisation that you represent?

Note: Increased market transparency in this context refers to the dissemination of (additional) information beyond prices reported by all operators in the agri-food supply chain, assuming the information, disaggregated by product type but aggregated across all operators, is made available to all operators free of charge, where confidentiality and data protection are ensured.

	Risk	No risk	Do not know
* Gross margins ((price minus variable costs) divided by price)			
* Operating (net) margins ((price minus total costs) divided by price)			
* Production volumes			
* Stocks			
* Trade value			
* Trade volume			
* Consumption and utilisation			
* Sustainability indicators (e.g. carbon footprint)			
* Transport costs			
* Other			

If other, please specify

IV. Estimation of costs of reporting data in your business or organisation related to prices, volumes, transport costs and/or margins by product type

***If you already have an established reporting system for input/output prices, volumes (production, stocks, trade), transport costs and/or margins of your operations and transactions by product type, what are your approximate annual running costs for this activity? (Please convert labour time into approximate annual costs, please also include maintenance costs of IT systems etc.)**

- Unsure but negligible
- Unknown
- Known, but do not want to provide
- Less than EUR 500
- EUR 500 to 1,000
- EUR 1,000 to 10,000
- EUR 10,000 to 25,000
- EUR 25,000 to 50,000
- EUR 50,000 to 100,000
- More than EUR 100,000

***Out of the total annual running cost for the reporting system, what is the approximate share (%) dedicated to reporting input/output prices by product type?**

- Unsure but negligible
- Unknown
- Known, but do not want to provide
- Less than 10%
- Between 10 and 20%
- Between 20 and 50%
- Between 50 and 75%
- More than 75%

***Out of the total annual running cost for the reporting system, what is the approximate share (%) dedicated to the external reporting (as opposed to internal reporting) by product type?**

- Unsure but negligible
- Unknown
- Known, but do not want to provide
- Less than 10%
- Between 10 and 20%
- Between 20 and 50%
- Between 50 and 75%
- More than 75%
- No external reporting by product type

***If you already have an established reporting system for input/output prices, volumes (production, stocks, trade), transport costs and/or margins of your operations and transactions by product type, what were your initial setup costs for this activity? (Please convert labour time into approximate monetary costs, please also include costs of IT systems etc.)**

- Unsure but negligible
- Unknown
- Known, but do not want to provide
- Less than EUR 1,000
- EUR 1,000 to 2,500
- EUR 2,500 to 10,000
- EUR 10,000 to 20,000
- EUR 20,000 to 50,000
- EUR 50,000 to 100,000
- EUR 100,000 to 250,000
- More than EUR 250,000

***Out of the total initial setup costs for the reporting system, what was the approximate share (%) dedicated to reporting input/output prices?**

- Unsure but negligible
- Unknown
- Known, but do not want to provide
- Less than 10%
- Between 10 and 20%
- Between 20 and 50%
- Between 50 and 75%
- More than 75%

***Out of the total setup costs for the reporting system, what was the approximate share (%) dedicated to external reporting (as opposed to internal reporting) by product type?**

- Unsure but negligible
- Unknown
- Known, but do not want to provide
- Less than 10%
- Between 10 and 20%
- Between 20 and 50%
- Between 50 and 75%
- More than 75%
- No external reporting by product type

***If you were required to externally report ALL input/output prices, volumes (production, stocks, trade), transport costs and margins by product type to a third party, what would be your estimated a dditional annual running costs? (Please convert labour time into approximate annual costs, please also include maintenance costs of IT systems etc.)**

- Unsure but negligible
- Unknown
- Known, but do not want to provide

- Less than EUR 500
- EUR 500 to 1,000
- EUR 1,000 to 10,000
- EUR 10,000 to 25,000
- EUR 25,000 to 50,000
- EUR 50,000 to 100,000
- More than EUR 100,000

***Out of this total estimated additional annual running cost for the reporting system, what would be the approximate share (%) dedicated to reporting input/output prices by product type externally?**

- Unsure but negligible
- Unknown
- Known, but do not want to provide
- Less than 10%
- Between 10 and 20%
- Between 20 and 50%
- Between 50 and 75%
- More than 75%

***If you were required to externally report ALL input/output prices, volumes (production, stocks, trade), transport costs and margins by product type to a third party, what would be your estimated additional setup costs? (Please convert labour time into approximate monetary costs, please also include costs of IT systems etc.)**

- Unsure but negligible
- Unknown
- Known, but do not want to provide
- Less than EUR 1,000
- EUR 1,000 to 2,500
- EUR 2,500 to 10,000
- EUR 10,000 to 20,000
- EUR 20,000 to 50,000
- EUR 50,000 to 100,000
- EUR 100,000 to 250,000
- More than EUR 250,000

***Out of this estimated total initial setup costs, what would be the approximate share (%) dedicated to reporting input/output prices by product type externally?**

- Unsure but negligible
- Unknown
- Known, but do not want to provide
- Less than 10%
- Between 10 and 20%
- Between 20 and 50%
- Between 50 and 75%
- More than 75%

V. Final assessment

***In your business or organisation, what are the main constraints for implementing an external reporting system for input/output prices, volumes (production, stocks, trade), transport cost and margins by product type to a third party?**

between 1 and 3 choices

- ☐ IT constraints
- ☐ No labour with required skills
- ☐ Data processing is too time consuming
- ☐ Too costly
- ☐ Disclosure of confidential information
- ☐ Concerns with negative effects on competition in the market
- ☐ Other

***If other, please specify**

***In your opinion, how do the benefits of increased market transparency along the agri-food supply chain compare to the reporting costs and risks from market transparency for the business or organisation that you represent?**

Note: Increased market transparency in this context refers to the dissemination of input/output price as well as additional information beyond input/output prices reported by all operators in the agri-food supply chain, assuming the information, disaggregated by product type but aggregated across all operators, is made available to all operators free of charge, where confidentiality and data protection are ensured.

- ○ Benefits are very probably greater than costs and risks
- ○ Benefits are probably greater than costs and risks
- ○ Benefits are probably not greater or smaller than costs and risks
- ○ Costs and risks are probably greater than benefits
- ○ Costs and risks are very probably greater than benefits

VI. Additional information

Disclaimer: Personal data protection is of the utmost importance. Please note that all answers are provided on a voluntary basis and collected anonymously. No link will be made between these answers and any information permitting to identify their origin. Every answer will be allocated a random processing number. The Data Controller guarantees that anonymity will be respected. Statistical results will be published in an aggregated form which will not allow individuals or organisations to be identified.

***Would you be available for a follow-up contact to discuss the information you provided in more detail? (If so, please don't forget to leave your contact details in the following questions)**

- ○ Yes
- ○ No

Name of the respondent

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Your professional e-mail address

Name of the enterprise or organisation you represent

Postal address of the enterprise or organisation you represent (please provide at least the postal code)

Deadline 15th Dec 2018

THANK YOU FOR YOUR PARTICIPATION!

Annex 2 - Description of variables used in the econometric estimations

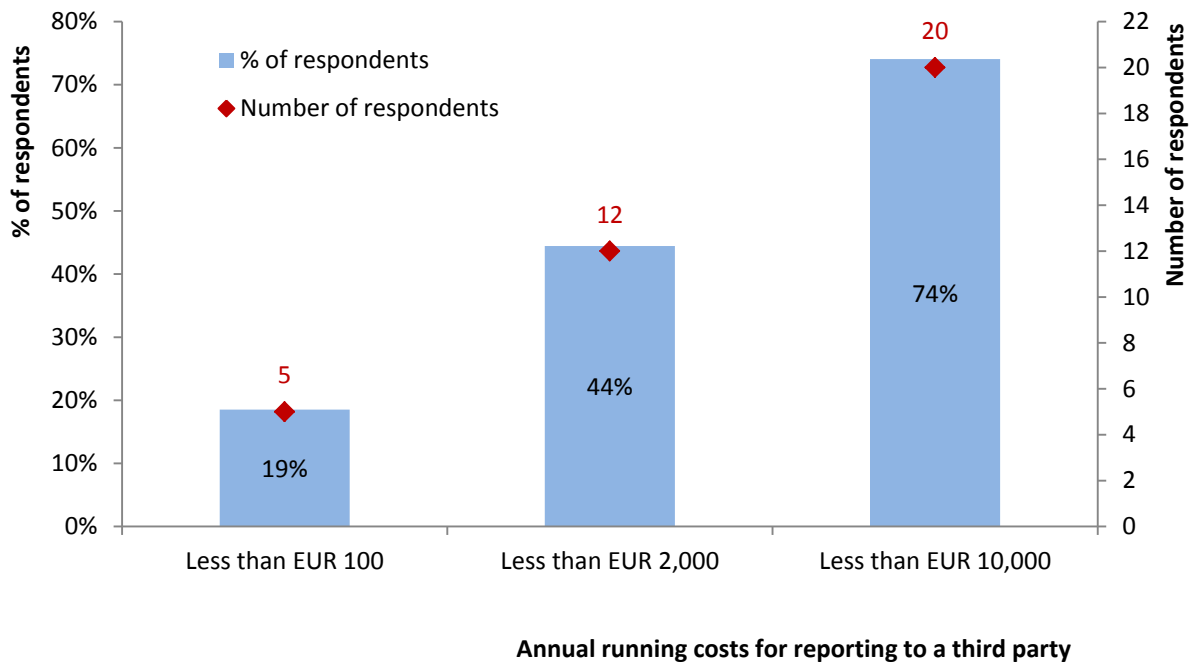
Table 2. Description of variables used in the econometric estimations

Name	Description
Estimated annual running costs (third party reporting)	1 = Unsure but negligible 2 = Less than EUR 500 3 = EUR 500 to 1 000 4 = EUR 1 000 to 10 000 5 = EUR 10 000 to 25 000 6 = EUR 25 000 to 50 000 7 = EUR 50 000 to 100 000 8= More than EUR 100 000
Estimated set-up costs (third party reporting)	1 = Unsure but negligible 2 = Less than EUR 1 000 3 = EUR 1 000 to 2 500 4 = EUR 2 500 to 10 000 5 = EUR 10 000 to 20 000 6 = EUR 20 000 to 50 000 7 = EUR 50 000 to 100 000 8 = EUR 100 000 to 250 000 9 = More than EUR 250 000
NMS	Dummy variable: equals 1 if the location of head office is a New MS; 0 otherwise
Association and other organisation	Dummy variable: equals 1 if the respondent is association or other organisation; 0 if the respondent is operator
Stage of the agri-food chain	Stage of agri-food chain defined as follows 1 = Farmer or farmer organisation (reference) 2 = Manufacturers 3 = Intermediary traders 4 = Retailers 5 = Other
Operator size (number of employees)	Operator size by number of employees, defined as follows 1 = Self-employed or Less than 10 employees (micro enterprise) (reference) 2 = Between 10 and 49 employees (small enterprise) 3 = Between 50 and 250 employees (medium-sized enterprise) 4 = More than 250 employees (large enterprise) 5 = Not a business (e.g. NGO, farmers' association, industry organisation, think-tank, etc.)
Operator size (sales)	Operator size by company sales, as follows 1 = Less than EUR 100 000 (reference) 2 = EUR 100 000 to 500 000 3 = EUR 500 000 to 2 million 4 = EUR 2 million to 10 million 5 = EUR 10 million to 50 million 6 = EUR 50 million and more

Name	Description
Sector	The main focus of the organisation, defined as follows: 1 = Grains (reference) 2 = Fruits and vegetables (including potatoes) 3 = Meat and dairy 4 = Various processed food products 5 = Other (various agricultural products, inputs, sugar, others)
External reporting experience	Dummy variable: equals 1 if the business or organisation reports to a third party; 0 otherwise
Internal reporting	Dummy variable: equals 1 if the business or organisation has internal reporting system in place; 0 otherwise
Automated reporting system	Dummy variable: equals 1 if the business or organisation has reporting system in place which uses a mix of staff time and automation or is fully automated; equals 0 if the reporting system in place requires mainly staff time or has no reporting at all
Disclosure of confidential information	Dummy variable: equals 1 if the respondent is concerned with the disclosure of confidential information when reporting to a third party; 0 otherwise

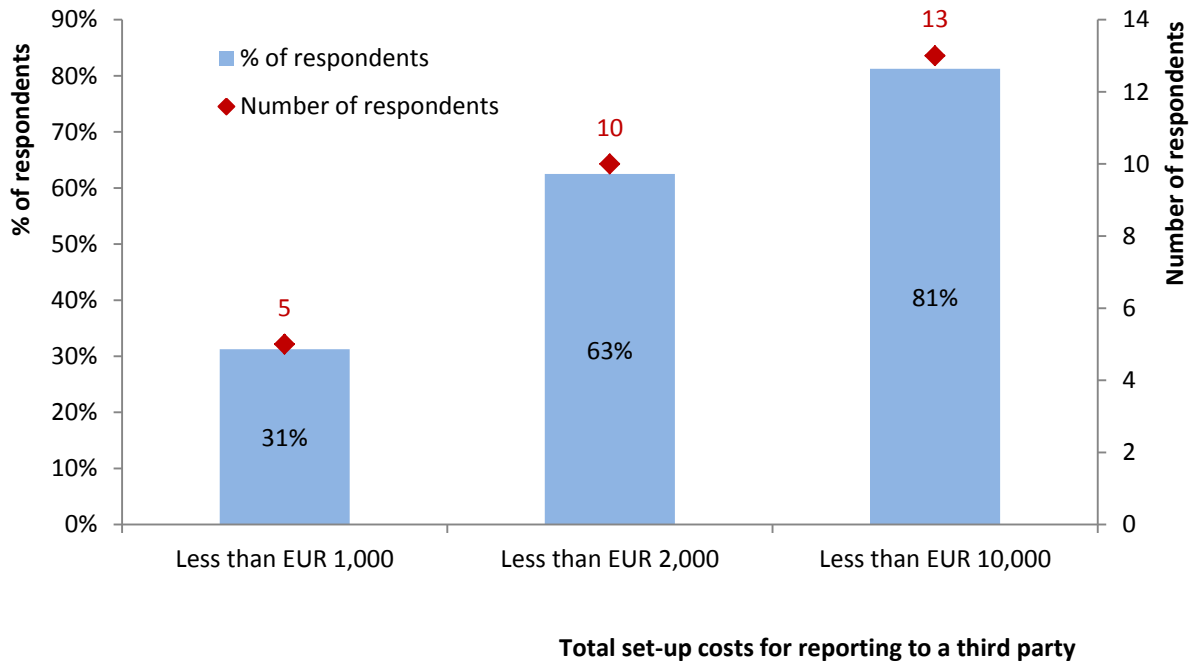
Annex 3 – Additional figures

Figure 32. The value of annual running costs for reporting to a third party, for existing reporting practices (% of respondents who report to a third party and provided cost estimates by excluding those with 'unknown or not provided' total running costs)



Notes: The monetary value of costs presented in this figure are calculated based on the data reported in Figure 18b, excluding respondents who did not know or did not provide annual running costs for the operator's reporting system (i.e. excluding those with 'unknown or not provided' total running costs).

Figure 33. The value of set-up costs for reporting to a third party, for existing reporting practices (% of respondents who report to a third party and provided cost estimates by excluding those with 'unknown or not provided' total set-up costs costs)



Notes: The monetary value of costs presented in this figure are calculated based on the data reported in Figure 19b, excluding respondents who did not know or did not provide total set-up costs for the operator's reporting system (i.e. excluding those with 'unknown or not provided' total set-up costs).

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KJ-NA-29794-EN-N

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Publications Office of the European Union

doi:10.2760/210466

ISBN 978-92-76-08790-8