An Phríomh-Oifig Staidrimh
Central Statistics Office

CSO Report on the Feasibility of Collecting Price Information on the Cost of Insurance to Businesses

January 2019

Published by the Central Statistics Office, Ireland

Contents

Executive Summary

In January 2018, the CSO was tasked by the Cost of Insurance Working Group (CIWG) to consider the feasibility of collecting price information on the cost of insurance to businesses, specifically employers' liability and public liability. This recommendation was made after submissions to the CIWG highlighted very significant increases in business insurance costs and the finding by the CIWG that there is an absence of quality information, including official statistical data, to inform the policy formulation by government.

The Price Statistics Division in the CSO have experience publishing price indices such as the Consumer Price Index (CPI) and the Residential Property Price Index (RPPI) and are well placed to assess the conceptual and practical challenges of compiling a price index for business insurance. Many of the same issues that are inherent in the production of the CPI and RPPI also apply to a price index for business insurance.

During the feasibility study, the CSO liaised with colleagues in other National Statistical Institutes (NSIs). One of the starkest findings was the lack of international precedent for a price index for business insurance. The Bureau of Labour Statistics (BLS) in the US are the only organisation that produces price indices on business insurance. This is possible as insurance companies are required by US law to file rate changes to the relevant regulatory body. In Canada, the statistics office attempted to produce a price index for business insurance; however, they discontinued the survey due to concerns about data quality and the burden on respondents. These were the only two concrete examples CSO found. This lack of international precedent means there are large methodological challenges for the CSO to overcome.

Through its meetings with industry experts, the insurance companies and other NSIs, the CSO identified seven potential methods of collecting price information on liability insurance. These data collection options were assessed against four criteria: (i) statistical quality, (ii) burden on respondents, (iii) meeting user needs and (iv) cost. After analysing each of the options, the CSO have found that four options were unfeasible and two further options, while technically feasible, would be extremely difficult to implement in practice.

The method that the CSO will pursue is to use a commercially available technology solution to automatically price a high volume of representative profiles i.e. customer profile such as office-based company with 20 employees, good safety standards and no claims history etc. The price quotations for these profiles can then be tracked over time to estimate the overall change in premiums.

This is the most efficient method to collect premium information for the representative profiles. The CSO has carried out some research, in conjunction with a technology/analytics company, into using this method for motor insurance and the indications are positive to date. The CSO plan to continue this research for business insurance.

The method proposed by the CSO attempts to address the problems encountered in Canada. The key to this method is the large volume of quotations that can be collected with little or no involvement from the insurance companies. This has the dual benefit of capturing a wide enough sample to accurately measure a heterogenous market while also minimising the risk of sample attrition (which is a greater risk when the information is collected by a recurring survey). The main challenge that the CSO will encounter will be developing the technological solution. The CSO will engage external technology companies to examine the potential to solve this challenge.

An important consideration for each survey administered by the CSO is the burden placed on respondents. By using this method, the burden on insurance companies would be minimal, thereby

ensuring their costs are not impacted. This is a particularly important consideration in a market where the goal is to reduce insurance premiums for consumers.

An issue to consider with this method is that it is unlikely that retrospective price information could be collected. As a result, any price index developed using this data source would start from a current date and would not provide any information on how premiums for business insurance changed in recent years. In addition to this, the coverage of the price index would be restricted to that section of the market that can be automatically priced using the pricing portals from the insurance companies e.g. office and retail. Other sectors of commercial insurance often involve judgement of risks on a case-by-case basis, which is not fully automated. The CSO's proposed method will collect insurance quotations rather than actual transactions information.

The CSO will continue the research into this approach in the short-term and will provide the CIWG and the Department of Finance with a final determination on feasibility within 6 months. If a decision is made to implement the solution, then an additional resource would be required in the CSO to set up processes, compilation methods and dissemination channels. It would be expected that the first CSO publication from this new data source, if all relevant challenges can be overcome, would take place between 12 to 18 months after the initial data collection. For example, if data collection began in September 2019, the CSO would likely publish first results in late 2020 or early 2021.

1. Introduction and background

1.1 The Central Statistics Office

The Central Statistics Office (CSO) is an independent office and provides high quality information for both evidence-based decision-making and to support accountability. The CSO's mandate is built on the Statistics Act 1993 and EU Regulation 223/2009 and allows for the collection, compilation and dissemination of information for statistical purposes.

The CSO's values strive to ensure that independence, impartiality and integrity are at the forefront of all work undertaken. The CSO are also committed to reducing the burden on respondents with use of innovative processes while still providing excellent services to customers and data users. Information collected by the CSO is subject to statistical confidentiality requirements and may only be used for statistical purposes under the Statistics Act 1993 and EU Regulation 223/2009.

1.2 The Cost of Insurance Working Group (CIWG)

The cost of insurance in both personal and commercial lines has been affected by high volatility in recent years. The Department of Finance began an insurance policy review in 2016 because of this price volatility as well as other factors in the insurance sector. The Cost of Insurance Working Group (CIWG) was established and chaired by Minister for State at the Department and initially focussed on the cost of motor insurance which resulted in the *Report on the Cost of Motor Insurance* in January 2017 ("the Motor Report").

Following on from this report it was decided that the second phase of the CIWG would be to review the cost of employer and public liability insurance. The reason for this was there was some evidence to suggest that these were segments of the insurance market where disproportionate increases in prices have occurred in recent years.

1.3 Data gaps

The *Report on the Cost of Employer and Public Liability* ("the Liability Report") was published in January 2018[1]. One of the key findings was that there was an absence of quality information, including official statistical data, to inform the policy formulation by government. Specifically, the report mentions there is an absence of price information to assess market conditions, price competitiveness and the rationale for price increases. In the report, the CIWG was conscious that while there is anecdotal evidence from stakeholders that premiums for employers' liability (EL) and public liability (PL) have increased in recent years, relying solely on anecdotal evidence may lead to a potentially distorted view of the EL and PL market.

1.4 Data availability in Ireland

Both the Motor Report and the Liability Report list the main sources of insurance data that are available in Ireland, much of which cover employer and public liability. This information is collected by the Central Bank of Ireland and Central Statistics Office (CSO) among others. However, these sources do not provide the information needed to determine underlying price trends in EL and PL markets. While the Central Statistics Office (CSO) does collect certain information on the operating cost of business broken down by categories and data from Profit and Loss and Balance Sheet information from insurance companies operating in Ireland, this data is collected for specific purposes and is not suitable for the creation of price indices in relation to the cost of insurance for businesses. This issue is outlined further in Appendix 9 of the Liability Report and in Appendix 1 of

[1] Report on the Cost of Employer and Public Liability Insurance: https://www.finance.gov.ie/wp-content/uploads/2018/01/180125-Report-on-the-Cost-of-Employer-and-Public-Liability-Insurance.pdf

this report. In this context, new data sources would need to be identified or developed to produce the statistical outputs required by the CIWG.

1.5 CIWG recommendation for increasing transparency

In the Liability Report, the CIWG recommended that the CSO consider the feasibility of collecting price information on the cost of insurance to businesses. A related task was to consider the methods for compiling this information into a price index which would be able to accurately measure the evolution of insurance premiums paid by businesses. If the CSO considered the collection and compilation of this information feasible, the CIWG recommended that the CSO make appropriate proposals.

Table 1: Recommendation and actions related to the CSO (page 11 of the Liability Report)

Recommendation	Action Point No.	Action Point	Deadline	Relevant Bodies	Lead/Owner
CSO to consider the feasibility of collecting price information on the cost of insurance to businesses	1	CSO to commence feasibility study on data related to the cost of insurance to Businesses	Q2 2018	Central Statistics Office (CSO)	Department of Finance
	2	CSO to Report to Department of Finance with outcome of review, and if it considers such an index feasible make appropriate proposals	Q4 2018		

1.6 Structure of report

This report documents the work undertaken in light of the recommendations of the Working Group to investigate the feasibility of the CSO creating an index for the cost of insurance to businesses. This report does not seek to replicate material already presented as part of the Liability Report. In that report, it clearly outlines the mechanics of liability insurance (Chapter 3), the specific market for liability insurance in Ireland (Chapter 4) and the current availability of data (Chapter 5).

The report details the research the CSO undertook to get a better understanding of the insurance industry, the development of insurance indices in other countries and the options available to the CSO. It delves into each of the data collection options identified by the CSO and determines the feasibility of each one based on a set of criteria.

1.7 Methodology used in the study

The CSO began working on the feasibility of a business insurance price index in May 2018. This commenced with researching the various methodological and practical challenges that would need to be overcome in order to produce such an index.

Due to the complex nature of the business insurance market, the CSO met with a number of insurance companies and other participants in the insurance market in order to get a clearer understanding of how the market functioned. These meetings allowed the CSO to determine the scope of the price index and what sectors of the market would be suitable for inclusion in the price index.

In addition to meeting with industry experts, the CSO also contacted other National Statistical Institutes (NSIs) to develop a better understanding of the methodology and resources required to produce such an index. These interactions with other NSIs focussed on the methodology around

pricing insurance premiums and the collection methods used. By conducting this research into international best practice, the CSO was able to determine and narrow down the possible methods of data collection.

1.8 EU Legislative Requirements

There is no current or planned EU requirement for statistics on business insurance price trends. The current requirement for Services Producer Price Indices (SPPIs) are set by the Short-Term Business Statistics (STS) Regulation, No. 1165/1998. The SPPIs are a set of individual price indices that measure changes in the average level of prices charged by producers for a range of services supplied to businesses and government.

Pursuant to the STS Regulation, the CSO currently publish SPPI price indices covering a relatively limited number of services e.g. transportation & storage, information & communication (computer programming and consultancy), professional, scientific & technical activities (legal, accounting, architecture, advertising) and administrative and support services activities (employment activities, security, industrial cleaning).

The STS Regulation will be replaced by a consolidated Regulation on business statistics i.e. the Framework Regulation on Integrating Business Statistics (FRIBS). FRIBS is currently being discussed by Parliament and Council. While FRIBS will add some new requirements to EU business statistics, these do not include price indices on business insurance. The wider lack of precedent worldwide for compiling price indices on business insurance indicate that this would be a very difficult area to include in EU statistical legislation.

2. Research and development

2.1 Introduction

This section details the experience in the CSO of producing price indices for insurance services, the challenges which would be associated with creating such an index for business insurance in particular and the current international best practices. This process involved meeting with industry experts and insurance companies and having discussions with other National Statistical institutes that are producing or have investigated producing a business insurance index.

2.2 Pricing of motor insurance for the CPI

The CSO currently collects prices for motor insurance as part of the Consumer Price Index (CPI) using a representative profile method. The motor insurance companies are requested to supply quotations for defined representative profiles for both new and existing customers (including car model and age, person's age, sex, occupation etc.). The representative profiles are derived following consultation with the motor insurance industry and informed by other data sources e.g. transport statistics. Each insurance company provides quotations to the CSO and the same profiles with the same specifications are subsequently surveyed each month and the prices compared over time. This allows the CSO to compile an index that reflects pure price change and is unaffected by changes in the risk profile of the customer. It is important in this method to resample the profiles over time to ensure that they continue to be representative of the market.

This is a common method used at an international level to measure the inflation affecting consumers of motor insurance. The reason that this method works well is because there is a large and mature market for motor insurance and the generation of insurance quotes (i.e. the premium or the price of the policy) has been automated to a large extent. There is good information available to insurance companies on the various risks associated with providing insurance in the market. This allows the companies to build accurate pricing models based on known risks and future claims in the market. In this scenario, the burden on insurance companies to provide price information to CSO is low and there is consistency in the pricing of the representative profiles.

2.3 Constant quality price index

One of the more difficult aspects of producing a price index is ensuring that the calculated price changes do not include any changes in the characteristics of the good or service being surveyed. The same goods (description, brand, quantity etc.) should be priced each month. For some grocery-type items this is relatively simple. However, there is a significant challenge with more complex products , such as electronic goods (e.g. laptops), as these goods are continually undergoing quality improvements. In the case of laptops, the aim of the price index is to capture the average price change in laptops without including any price changes that may have occurred due to improvements in the specifications e.g. increased RAM, memory etc. A price index excluding changes in price due to quality is known as a “constant quality” price index. There are various methods available in price statistics to ensure that constant quality is maintained.

The principle of constant quality also applies to insurance. The method used to maintain constant quality for motor insurance in the CPI has already been outlined above i.e. representative profile method. In analysing the feasibility of producing a price index for liability insurance, the CSO considered the representative profile method and another method that involves regression analysis known as the hedonic method. The hedonic method is used by the CSO for the calculation of the Residential Property Price Index (RPPI). In this method, transactions over two or more successive periods are pooled and the characteristics which influence price (dwelling type, dwelling size, geographical location and neighbourhood quality) are analysed and their relative contributions to the overall price are estimated. By excluding the price change determined by differences in

characteristics independently, we are left with a pure price change for a consistent set of characteristics from one period to another. In the context of liability insurance, the challenge will be to analyse the potential use of this method for estimating pure change while holding the price-determining characteristics inherent in the insurance policies constant over time.

2.4 Data requirements

It should be noted that while the information requirements to implement the representative profile approach or the hedonic method are similar, there are important differences in how the data would be collected and the volume of data needed. Both methods require micro level data which include the premium paid by the business (or premium quoted by the insurance company) and the relevant price-determining characteristics e.g. sector, turnover, no. of employees, claims history etc.

To collect data for the representative profile method, the price-determining characteristics are pre-specified on a survey form and the insurance company (or an intermediary able to act on behalf of the insurance company) provides an updated price each month or quarter. The information collected comprise quotations from insurance companies for a set of representative profiles.

To collect data for the hedonic approach, much greater volumes of data are required to accurately estimate price change. The information comprises detailed premium information (paid or quoted) along with the related characteristics of the insurance policies. There is more flexibility on where this information is sourced from. The information could potentially be collected from the businesses themselves on an existing or new survey form. Another option would be to gain access to high-volume transactions data on insurance policies held by insurance companies, brokers or other companies/agencies serving the insurance market. These companies would have databases of information that the CSO may be able to access. These issues will be addressed in more detail below.

2.5 Consultation with other National Statistical Institutes (NSIs)

While the CSO produce a measure of motor insurance price movements for the Consumer Price Index, the CSO have not previously attempted to produce a price index for business insurance. To get a better understanding of international best practices around the production of such an index, the CSO contacted National Statistical Institutes (NSIs) in other countries with experience producing these price indices.

The main learning from CSO discussions with other NSIs is how few countries have attempted to produce a price index for business insurance. The only precedent the CSO encountered was in Canada and the United States.

2.5.1 Canada

Statistics Canada published a report at the 2011 Voorburg Group[2] meeting on Direct Insurance Carriers Services in Canada[3]. This report detailed Statistics Canada's experience in trying to price property and casualty insurance prices in Canada. From 2007 to 2011, Statistics Canada ran a pilot survey called Property and Casualty Insurance Services Price Index (PCISPI), and used a

[2] The Voorburg Group on Service Statistics (VG) was created in 1986, in response to a request from the United Nations Statistical Commission (UNSC), for assistance in developing service statistics. The first meeting, hosted by the Netherlands Statistical Office (CBS) was held in January of 1987 in Voorburg, from which the Group derives its name. Since its inception, the Group has consisted primarily of experts from national statistical offices (NSOs) with periodic participation from international bodies like the Organization for Economic Cooperation and Development, Eurostat, and the United Nations Statistical Division (UNSD).

[3] Direct Insurance Carriers Services in Canada: http://voorburggroup.org/Documents/2011%20Newport/Papers/2011%20-%2032.pdf

representative profiling method of data collection similar to the one used in Ireland for motor insurance.

The survey was discontinued in 2011 due to issues with sample attrition related to response burden as well as excessive burden on Statistics Canada themselves. In the report, Statistics Canada noted that the burden imposed by the PCIP Report Survey on insurers requiring them to price a set of model policies was a likely cause of the high degree of respondent attrition. As more and more respondents ceased to respond, the calculated price indices began to exhibit fluctuations related to the shrinking sample size rather than actual price dynamics. In addition to this, the requirement to maintain constant quality throughout the survey required the representative profiles to be frequently updated to reflect the current market as well as ensuring that the prices received from the survey reflected reality proved to place a large resourcing strain on Statistics Canada.

2.5.2 The United States

The Bureau of Labour Statistics (BLS) in the US compiles Services Producer Price Indices (SPPIs) for non-life insurance, including general liability insurance services. To track movements in prices, insurance companies provide the BLS estimated premiums for frozen policies (similar to the representative profile method). This is an actual policy selected by probability where the price-determining characteristics are held constant, while the policy is priced on an annual basis. The insurance company estimates the current premium for this frozen policy by using current charges applied to the policy characteristics.

This is possible because in the US, insurance companies are required by law to file rate changes to the relevant regulatory body in that State. This requirement to file any rate changes to the State Department of Insurance meant that it was easy for the BLS to confirm that the price changes they were seeing reflected reality, something Statistics Canada reported great difficulty in doing. This information ensures that constant quality among the policies being tracked is maintained and that the change in premium is purely due to price changes.

These rate filings are not required in the Irish insurance market and as a result, this method of collecting premium information from insurance companies would be extremely resource intensive for both the CSO and the insurance companies and could lead to similar issues that were experienced by Statistics Canada. In addition to the ability to check against rate filings, the BLS has significant resources to invest in producing price indices for liability insurance.

2.5.3 Other countries

The CSO also undertook a survey of other participants of the Voorburg Group. All those who responded to the survey indicated that they didn't produce indices on business insurance prices and had no plans to develop such indices in the future. The reasons cited were due to the highly complex nature of such an index and the lack of desire for such indices both at a National and European level. The Czech Statistics Office (CZSO) did present a report at the 2011 Voorburg Group into a Services Producer Price Index (SPPI) for Non-Life Insurance Services in the Czech Republic. However, this report showed that general public liability and professional liability insurance were not included in the Czech SPPI.[4]

2.5.4 Consultation with other NSIs - conclusions

The US were the only country found to be producing price indices on employer and public liability insurance. No other countries are producing price indices on these lines of insurance and while Canada undertook an investigation into improving its price indices for non-life insurance, they are yet to produce indices for employer and public liability. In addition to not producing price indices on

[4] SPPI for Non-Life Insurance Services in the Czech Republic: http://voorburggroup.org/Documents/2011%20Newport/Papers/2011%20-%2037.pdf

these lines, the respondents to our survey confirmed that the main reason for not doing so was due to the great difficulty associated with producing such an index. This lack of international precedent means there are large methodological challenges for the CSO to overcome.

One of the main difficulties encountered in Canada was the problem with maintaining the statistical quality of the price index. This brings into question the applicability of the representative profile method in the business insurance market. As Statistics Canada has shown, the quality of the index was significantly affected by sample attrition which was caused by the burden that the survey placed on the insurance companies.

2.6 Meeting with insurance companies and industry experts

In addition to contacting other NSIs, the CSO met with insurance companies and industry experts to get a better understanding of the insurance industry and the mechanics of how EL and PL insurance is priced in the market. The CSO used these meetings to identify possible data sources and any additional issues that may not have been foreseen from interactions with NSIs. The discussions with the industry allowed the CSO to identify the main difficulties that would be experienced in producing a price index for business insurance and potential solutions for data availability issues.

2.6.1 How pricing of EL and PL works

As highlighted in the Liability Report, the provision of business insurance is a much more complex process than that for personal lines, such as motor insurance. Business insurance can be purchased through two methods, directly from the insurer or via an insurance broker. It was noted in the Liability Report that most insurers rely on brokers to source customers[5], a trend that was also found in our conversations with industry experts.

Each insurance company have specialist portals which brokers can access to price less complex risks e.g. for small to medium companies in the retail sector. These portals allow the automatic generation of premiums by inputting the required business characteristics and claims history. More complex risks require manual input by underwriters. They use the initial quote based on the characteristics provided and adjust it based on additional information. These adjustments are made based on guidelines which vary depending on the insurance company. It was noted by a number of industry experts that the majority of risks priced for EL and PL continue to require the manual input of underwriters.

2.6.2 Some challenges with business insurance

The main challenge for the creation of a price index for business insurance that arose during the meetings was the heterogeneity of the market. This contrasts with motor insurance where the difference in risk between, for example, insuring a large SUV and small hatchback is generally quantifiable. This is influenced by the high volume and relative homogeneity of the motor insurance market; there are large numbers of customers in well-defined sub-categories of the motor insurance market. This means that it is possible to create the automatic quoting tools available on the main insurers websites.

However, for the business insurance market, the variation in businesses is so great that automation of quoting, similar to how car insurance is priced, is very difficult. In addition to this wide range of possible business types, there can also be a large range of different risks when comparing two similar businesses. For example, two pubs in the same town could have a vastly different set of risks (e.g. footfall, existence of stairs, safety procedures in place, past claims etc.) and therefore have greatly different insurance costs.

[5] The Chambers Ireland Survey showed that 88% of their sampled members used an intermediary to purchase EL and PL.

The sourcing of insurance elsewhere in the European Union was also a predominant issue that arose during our discussions with industry experts. The Liability Report noted that insurers felt that policyholders who had switched providers had moved to insurers in the UK and other EU member states. From the CSO's meetings with insurance companies, it appears that this trend has gotten stronger since 2015. This trend is due to the lack of appetite among the insurers in Ireland to take on large or bespoke risks whereas the more mature market for business insurance based in the UK and other EU countries can absorb these risks.

3. Examination of data collection options

3.1 Legal mandate to collect data

The CSO collects data under Sections 24, 26 and 30 of the Statistics Act, 1993:

- Section 24 relates to voluntary surveys or censuses.
- Section 26 relates to compulsory surveys or censuses (i.e. where a Ministerial Order made under Section 25 specifies that the statistics must be provided to the CSO).
- Section 30 enables the CSO to have access to the records of public authorities for statistical purposes.

Of most relevance to the feasibility of collecting data on the cost of business insurance are Sections 24 and 26 of the Statistics Act. When a Ministerial Order is made to make the provision of data compulsory, this strengthens the ability of the CSO to ensure that the data is delivered in a timely and accurate format.

Under the Statistics Act, the CSO's mandate and the restrictions on the use of information (Sections 10(1) and 32 of the Act) make it clear that the information collected by the CSO is used solely for statistical purposes. It may not be used for any other purpose. Under Section 13 of the Act, the Director General of the CSO has sole responsibility for and is independent in relation to the statistical methodology and professional statistical standards applied by the CSO, and the contents of statistical releases and publications.

3.2 Data collection options considered by the CSO

There were six data collection options considered by the CSO during the feasibility study. These were as follows:

1. Detailed survey of businesses (hedonic method).
2. Sending representative profiles to insurance companies for frequent repricing.
3. Repricing representative profiles in CSO using pricing portals from the insurance companies.
4. Using technology to automatically price a high volume of representative profiles.
5. Receiving high-volume transactions data directly from insurance companies (hedonic method).
6. Receiving transactions data from third-party service provider to brokers (hedonic method).
7. Collecting information from publicly available price comparison websites.

Detailed survey of businesses (hedonic method): This involves using an existing CSO business survey or a new business survey to collect information on premiums paid and relevant price-determining characteristics.

Sending representative profiles to insurance companies for regular repricing: This is the direct surveying of insurance companies using a similar method to how motor insurance is priced for the Consumer Price Index (CPI). The same approach would be taken in the business insurance survey whereby representative profiles would be sent to insurance companies for repricing on a regular basis.

Repricing representative profiles in CSO using pricing portals from the insurance companies: This would involve the CSO getting direct access to the portals that the brokers use to retrieve prices from the insurance companies. This data collection method might allow the CSO to price representative profiles on a regular basis with minimal involvement from the insurance companies. The insurance companies would, however, be required to provide input into the development of the representative profiles.

Using technology to automatically price a high volume of representative profiles: This method is similar to the previous method with the exception that computer code is used to automatically price a large number of representative profiles. This would be a very efficient method of data collection; however, it would be dependent on getting access to the relevant pricing portals from the insurance companies. This is a method that the CSO are currently researching, in conjunction with a technology/analytics company, as a potential data collection method for motor insurance in the CPI.

Receiving transactions data from insurance companies (hedonic method): Another method of data collection is to receive transactions data directly from insurance companies in the form of an electronic data transfer. The insurance companies would transfer data on a quarterly or annual basis on all policies sold for business insurance. This method would supply the CSO with actual transaction data from insurance companies detailing premiums and price-determining characteristics on businesses. The CSO would use this information to develop a hedonic regression model to estimate pure price change over time.

Receiving transactions data from third-party service provider to brokers (hedonic method): Some insurance companies work with a third-party servicer provider offering technical solutions to insurance brokers. The service provider is offering an interface to make the pricing of business insurance much easier for brokers. It provides a solution to quickly retrieve quotes from multiple insurance companies. It may be possible for the CSO to access this information if agreement can be reached with the third-party service provider.

Collecting information from publicly available price comparison websites (hedonic method): In the UK, price comparison websites such as Compare the Market and Money Supermarket offer instant price quotations for business insurance. Although these websites are not available to Irish businesses, as the market matures it may be the case that this service is offered in the future.

3.3 Assessment criteria

The CSO used the following criteria when assesses the suitability and feasibility of each data collection option:

- Quality
- Burden on respondents
- Meeting user needs
- Cost

Statistical quality: When assessing the data collection options, the CSO put a central focus on the expected quality of the index. This includes the ability of the resulting index to track the evolution of pure price changes over time (constant quality price index) and also the expected stability of the index e.g. continued relevance of the sample of representative profiles or robustness of the hedonic regression model.

Burden on respondent: The CSO puts a large emphasis on the expected burden that new surveys place on respondents. New surveys imply a cost for businesses which the CSO wants to minimise or, if possible, eliminate. For this reason, the CSO always consider alternate data sources (e.g. administrative or private data sources) firstly before deciding to issue a new survey.

Coverage: The benefits of producing a business insurance price index stems from its ability to bring transparency to the market and provide policymakers with evidence to make good decisions. In the case of business insurance, we looked specifically at the potential coverage of a business insurance price index when using the different data collection methods.

Resource requirements for CSO: The CSO also considered the potential resources required to develop and maintain the data collection and compilation for the business insurance price index. These would mainly relate to staff costs, however, technology costs were also considered.

3.4 Assessment of data collection options

The CSO examined each of the options based on the criteria listed above to determine the feasibility of each data option.

1. Detailed survey of businesses (hedonic method):

Overall assessment	Unfeasible
Statistical quality	Technically it would be very difficult to produce a constant quality price index through a survey of businesses. The insurance companies (or other insurance intermediaries) hold more information/knowledge in terms of the relevant price-determining variables (e.g. claims history, safety procedures in place, footfall). These variables can also vary over time, across insurance companies and across insured sectors. Therefore, it would be very difficult to design a single survey form for businesses to capture all this variability. Another problem is the issue of response rates from businesses – these have been falling in recent years and can impact on the representativity of the resulting statistics.
Burden on respondents	High burden on businesses as a large volume of survey forms would need to be issued and many questions would need to be asked to capture the relevant price-determining variables. The complexity of the questions also impacts on the response rate.
Coverage	The coverage of the price index would likely need to be restricted to the sectors that are priced in a more automated way to reduce the complexity of the survey form e.g. office and retail.
Resource requirements	High resource requirement (e.g. statistician) to develop the mechanisms for data collection/compilation with less resources required to maintain the survey.

2. Sending representative profiles to insurance companies for regular repricing

Overall assessment	Unfeasible
Statistical quality	Although this method is widely used for motor insurance, there is little international precedent in other statistical offices for implementing this method for business insurance. One of the main difficulties encountered in Canada was the problem with maintaining the statistical quality of the price index. As Statistics Canada has shown, the quality of the index was significantly affected by sample attrition which was caused by the burden that the survey placed on the insurance companies. This method would be dependent on significant input from the insurance companies to develop the profiles and to regularly resample the profiles to ensure their ongoing representativity. During the feasibility study, the CSO worked with one insurance company to test this approach. The complexity and number of profiles required to create a representative index was found to be extensive. It was also found that this process would need to be completed with each insurance company separately as each company has a different profile of customers and use different attributes to price risk. A Ministerial Order under Section 25 of Statistical Act would be necessary to make the survey compulsory.

Burden on respondents	High burden on insurance companies to regularly sample the representative profiles. Once the profiles are setup, there would be less burden on the companies to price the profiles on a regular basis (e.g. quarterly). However, if underwriter input was required for repricing, the burden on the insurance companies would significantly increase.
Coverage	The coverage of the price index would need to be restricted to the sectors that are priced in a more automated way (i.e. office and retail).
Resource requirements	High resource requirement (e.g. statistician) to develop the mechanisms for data collection/compilation with less resources required to maintain the survey. The lack of international precedent would increase the resource requirement.

3. Repricing representative profiles in CSO using pricing portals from the insurance companies

Overall assessment	Unfeasible
Statistical quality	This option is essentially the same as the previous option. The only difference is that the CSO would manually price the representative profiles using the pricing portals instead of the insurance companies directly sending the information to CSO. This would reduce the burden on the insurance companies which may help with sample attrition. However, they would still need to have a significant input into the development of the representative profiles which is the most onerous aspect of the method in any case. All the same qualifications from the previous option also apply to this option.
Burden on respondents	High burden on insurance companies to regularly sample the representative profiles.
Coverage	The coverage of the price index would need to be restricted to the sectors that are priced in a more automated way (i.e. office and retail).
Resource requirements	High resource requirement (e.g. statistician) to develop the mechanisms for data collection/compilation with less resources required to maintain the survey. The lack of international precedent would increase the resource requirement.

4. Using technology to automatically price a high volume of representative profiles

Overall assessment	The CSO will pursue this option further
Statistical quality	This is the most efficient method of data collection in terms of the representative profiles (if a technological solution can be found). The CSO have carried out some research, in conjunction with a technology/analytics company, using this method for motor insurance and the indications are positive to date. The CSO plan to continue this research for business insurance. The key to this method is the large volume of profiles that can be collected without any input required from the insurance companies. This method addresses the problem encountered in Canada where sample attrition led to the discontinuation of the survey. As a large volume of profiles are collected, there will be less complexity to ensuring the profiles are representative of the market. The main challenge for this method will be developing the technological solution to access the pricing portals and automatically price the profiles.

Burden on respondents	Little burden on the insurance companies as the repricing would be carried out automatically using computer code. The insurance companies would be required to provide support in relation to choosing the representative profiles. However, the burden would be less than other methods.
Coverage	The coverage of the price index would need to be restricted to the sectors that are priced in a more automated way (i.e. office and retail).
Resource requirements	The CSO will be able to continue its research into this method within existing resources. External IT resources will be required to assist in developing the technological solution. Medium resource requirement (e.g. half statistician) will be required to develop processes and compilation methods if a decision is made to implement the solution. Less resources would be required to maintain the survey thereafter.

5. Receiving transactions data from insurance companies (hedonic method)

Overall assessment	Technically feasible but very difficult in practice
Statistical quality	There is no experience in the CSO or international precedent in other NSIs for implementing this method. This implies that the outputs would be experimental until quality could be explicitly demonstrated. If high-volume transactions data was sent to the CSO with the required level of detail, it may be possible to develop a hedonic model to estimate a constant quality price index. However, as the pricing of liability insurance is particularly complex (e.g. more complex than for residential property), there would be significant challenges in devising the model. This would be the main difficulty with this method. Again, a Ministerial Order under Section 25 of Statistical Act would be required to make the data transfer compulsory. An additional benefit of this method is that retrospective information might be available from the insurance companies. Therefore, it may be possible to develop a price index that covers previous periods.
Burden on respondent	There is less burden on the insurance companies to implement this method than the representative profile method outlined in the previous two options. Once the insurance companies have setup the mechanism to send the electronic transactions data to CSO, then this process can be used on an ongoing basis thereafter.
Coverage	It may be possible to extend the coverage beyond the retail and office sectors due to the availability of full transactions information i.e. census-type information. However, initially it would be sensible to develop a hedonic model for the sectors where pricing is less complex.
Resource requirements	High resource requirement (e.g. statistician) to develop the mechanisms for data collection/compilation with less resources required to maintain the survey. The lack of international precedent would increase the resource requirement.

6. Receiving transactions data from a third-party service provider to brokers (hedonic method)

Overall assessment	Technically feasible for very difficult in practice

Statistical quality	The largest challenge with this option relates to the quality of the resulting price index. There is no experience in the CSO or international precedent in other NSIs for implementing this method. This implies that the outputs would be experimental until quality could be explicitly demonstrated. This method is based on collecting quotations rather than actual policies sold in the market similar to options 2, 3 and 4 above where quotations are received for representative profiles. If high-volume data was sent to the CSO with the required level of detail, it may be possible to develop a hedonic model to estimate a constant quality price index. However, as the pricing of liability insurance is particularly complex (e.g. more complex than for residential property), there would be significant challenges in devising the model. This would be the main difficulty with this method. The additional quality concerns with this method relate to the inherent risk to CSO in having a single data provider. The CSO would not be able to legally compel a third-party service provider to send CSO the information required. As the data source is relatively new, there is no historical data available. As a result, any price index developed using this data source would not provide any information on how insurance prices changed in recent years.
Burden on respondent	Zero burden on the insurance companies.
Coverage	The coverage of the price index would be restricted to the sectors that are priced automatically by brokers using broker portals such as retail and office sectors.
Resource requirements	High resource requirements (e.g. statistician) in CSO to develop the data source and the hedonic model with less resources required to maintain the process thereafter. The lack of international precedent would increase the resource requirement.

7. <u>Collecting information from publicly available price comparison websites (hedonic method)</u>

This option unfeasible as the UK websites such as Compare the Market and Money Supermarket are not available in Ireland. The reason that this option is listed here is because these websites may become available in the future.

4. Conclusions:

Summary - Assessment of feasibility of options 1 – 7

Option No.	Description	Assessment of feasibility
1	Detailed survey of businesses (hedonic method)	Unfeasible.
2	Sending representative profiles to insurance companies for frequent repricing	Unfeasible.
3	Repricing representative profiles in CSO using pricing portals from the insurance companies	Unfeasible.
4	Using technology to automatically price a high volume of representative profiles	The CSO will pursue this method further
5	Receiving transactions data from insurance companies (hedonic method)	Technically feasible but very difficult in practice
6	Receiving transactions data from third-party service provider to brokers (hedonic method)	Technically feasible but very difficult in practice
7	Collecting information from publicly available price comparison websites (hedonic method)	Unfeasible.

As can be seen from the above summary table, of the seven methods considered by the CSO, four methods were deemed unfeasible and two further methods were deemed technically feasible but very difficult to implement in practice. The method that the CSO will pursue is option 4; using technology to automatically price a high volume of representative profiles.

This is the most efficient method to collect premium information for the representative profiles. The CSO has carried out some research, in conjunction with a technology/analytics company, into using this method for motor insurance and the indications are positive to date. The CSO plan to continue this research for business insurance.

The method proposed by the CSO attempts to address the problems encountered in Canada. The key to this method is the large volume of quotations that can be collected with little or no involvement from the insurance companies. This has the dual benefit of capturing a wide enough sample to accurately measure a heterogenous market while also minimising the risk of sample attrition (which is a greater risk when the information is collected by a recurring survey). The main challenge that the CSO will encounter will be developing the technological solution. The CSO will engage external technology companies to examine the potential to solve this challenge.

An important consideration for each survey administered by the CSO is the burden placed on respondents. By using this method, the burden on insurance companies would be minimal, thereby ensuring their costs are not impacted. This is a particularly important consideration in a market where the goal is to reduce insurance premiums for consumers.

An issue to consider with this method is that it is unlikely that retrospective price information could be collected. As a result, any price index developed using this data source would start from a current date and would not provide any information on how premiums for business insurance changed in

recent years. In addition to this, the coverage of the price index would be restricted to that section of the market that can be automatically priced using the pricing portals from the insurance companies e.g. office and retail. Other sectors of commercial insurance often involve judgement of risks on a case-by-case basis, which is not fully automated. The CSO's proposed method will collect insurance quotations rather than actual transactions information.

The CSO will continue the research into this approach in the short-term and will provide the CIWG and the Department of Finance with a final determination on feasibility within 6 months. If a decision is made to implement the solution, then an additional resource would be required in the CSO to set up processes, compilation methods and dissemination channels. It would be expected that the first CSO publication from this new data source, if all relevant challenges can be overcome, would take place between 12 to 18 months after the initial data collection. For example, if data collection began in September 2019, the CSO would likely publish first results in late 2020 or early 2021.

Appendix 1 – CSO Data Collection in the Insurance Sector

Services Producer Price Index (SPPI)

The SPPI is a business cycle indicator which provides information on the development of prices for numerous service industries. This information is used for the analysis of inflation and its sources, but also for the deflation of value measures in the service sector. It includes service producer prices for all users i.e. services consumed by private consumers, by business consumers and others. However, the bulk of the service industries covered by the indicator are those which are mainly demanded by businesses, they include for example freight transport, legal and accounting services, advertising and market research.

The collection and compilation of SPPI data is governed by the scope of the European Parliament and Council Regulation (EC) No 1165/1998, and currently insurance is not covered by the legislation. The CSO is involved in the negotiation of a new legislative proposal in the European Council over the last number of years. The aim of this proposal is to expand the coverage of the SPPI (along with many other surveys related to business statistics), however it is not planned to expand the scope to include non-life insurance. The European Commission, in correspondence with the CSO, set out that it did not collect financial sector related data as the ECB already collect data for the financial sector and they did not want to replicate work and create unnecessary costs and burden. It should be noted, however, that the ECB are more concerned with financial supervision and balance sheets rather than producing business cycle statistics such as price indices.

CSO Structural Business Statistics

The Annual Service Inquiry (ASI) collects information on the operating costs of businesses broken down into various categories - one of which is insurance. This information is not published. Furthermore, the insurance field is not broken down into employer liability and public liability therefore includes all insurance types, including motor and premises.

CSO Balance of Payments Survey

The CSO Balance of Payments (BOP) Survey collects Profit & Loss and Balance Sheet information from non-life and life insurance companies operating in Ireland. The purpose of this survey is to compile statistics on transactions between Irish residents and the rest of the world.

Since 2016, information on the premiums by type of insurance written (life, house, health, transport and travel, other insurance) and category of customer (households, firms, NPISH, government) is collected from insurance companies who sell over €10 million worth of premiums to Irish customers annually. The purpose of the data collection is to provide summary data by insurance type previously provided in the Central Bank's Insurance Statistics publication (Blue Book) which is used in the compilation of personal consumption figures in the national accounts.

This additional data is not published and the CSO does not plan to publish it in the future. The CSO believes that while this data may be used as an indicator of the value of insurance premiums earned by Irish Insurance companies from Irish firms, it would be impossible to use as an indicator of premium inflation as no information is collected on the characteristics of the businesses that form the basis of the insurance policies. Another possible limitation would be that the Survey does not include information on insurance premiums that Irish Firms are paying to non-Irish resident Insurance companies.