

Exploring the Use of Third-Party Data to Price Insurance in Ireland

Poster Session

Anthony Dawson

Statistician, Prices Development Unit

Central Statistics Office, Ireland

Voorburg Group on Service Statistics

Paris, 30th Sept – 04th Oct

1. Introduction

The volatility of insurance prices in Ireland has been the topic of much media and political scrutiny and has resulted in the formation of the Cost of Insurance Working Group which has produced reports on both motor insurance and public and employer liability.

1.1 Motor Insurance

The Central Statistics Office produces an index for CPI on the price of motor insurance in Ireland. As there was such an interest in the movement of insurance prices in Ireland, the CSO thought it was only prudent to investigate improving the methodology surrounding the collection of data for motor insurance prices.

At the moment, 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 and occupation etc.). The representative profiles are derived following consultation with the motor insurance industry and informed by other data sources e.g. transport statistics. This is a common method used at an international level to measure the inflation affecting consumers of motor insurance. However, in order to keep burden on respondents low, only a small number of profiles are sent to each insurance companies.

Ideally, a large number of profiles would be priced to get the most representative price index. This means a different methodology would have to be investigated which would allow a large number of profiles to be priced without a large increase on respondent burden. The CSO engaged with the insurance industry to investigate the ways this could be achieved without large burden increases and has led to the CSO engaging with a Third-Party data analytics company which specialises in insurance.

1.2 Public and Employer Liability Insurance

The CIWG made a recommendation in January of 2018 that the CSO should investigate the feasibility of producing a business insurance price index focusing on the price of public and employer liability. It was felt that this was a data gap that was causing a lack of transparency in the insurance market in Ireland as the CSO doesn't produce a price index for business insurance lines.

In 2018, the CSO undertook a feasibility study on measuring price information for the cost of insurance to businesses and presented these reports to the working group. To develop the report, the CSO met with industry experts and contacted colleagues at other National Statistical Institutes to develop an understanding of the insurance market and the potential ways of compiling a price index. One of the starkest findings in the study was the lack of international precedent for a price index for business insurance which meant there were large methodological challenges to overcome.

In reviewing how data on business insurance premiums could be accessed and used to calculate an index, the CSO identified seven potential methods of collecting price information on liability insurance. These potential methods were assessed against four criteria:

- i. Statistical Quality;
- ii. Burden on Respondents;
- iii. Meeting User Needs;
- iv. Cost

After analysing each of the seven potential methods, the CSO found that four were unfeasible and three were considered to be feasible¹. The three feasible methods all involved the use of Third-Party data in one way or another. These were:

1. Receiving transactions data from insurance companies
2. Receiving transactions data from third-party service provider to brokers
3. Using third-party service to automatically price a high volume of representative profiles

2. Pricing Methodology

2.1 Motor Insurance

The CSO are working with a third-party analytics company who scrape a large number of quotes every month. The analytics company work as a mystery shopper to scrape quotes from all the major insurance companies and brokers. They provide a dataset of all the quotes to the CSO and from this the CSO have developed a methodology to produce a price index. It allows for a much wider survey than could be achieved by the CSO and draws on knowledge and expertise from outside the office.

The initial signs are that this is a very promising method of data collection for produce a CPI for motor insurance and the CSO will be looking to incorporate it into the CPI in the near future.

2.2 Business Insurance

1. **Receiving transactions data from insurance companies**

With this method of pricing, 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.

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https://www.cso.ie/en/media/csoie/releasespublications/documents/in/csobusinessinsurancereport/CSO_Report_Business_Insurance_Jan2019.pdf

Benefits:

- Receiving high volume data from insurance companies would allow the CSO to develop a hedonic model to estimate a constant quality price index.
- Data would be from actual transactions
- There would be minimal burden on the respondent after initial set up of data transfer.
- Would provide a greater coverage of the insurance market than the other feasible methods.

Challenges:

- There is no experience in the CSO in dealing with high volume data transactions from 3rd party sources.
- This means there would be issues surrounding the transfer of personal data under GDPR regulation. Insurance companies would have to inform that their data was being used for statistical purposes.
- Would probably require a ministerial order to make data transfer compulsory.
- There are complex and significant challenges in developing a hedonic pricing model for insurance. There is limited international precedent surrounding this method of pricing insurance.

Based on these benefits and the challenges associated with creating a price index using this method, it was determined that developing a price index from transaction data from insurance companies was too difficult to put into practice at this time.

2. Receiving transactions data from third-party service provider to brokers

During our meetings with members of the insurance industry we learnt that some insurance companies work with a third-party service 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. The service provider then captures these quotes on the back end and whether a quote was chosen to proceed with. The CSO investigated receiving this transactions data from the 3rd party service provider as opposed to from the individual insurance companies to cut down the number of data sources that were being relied upon and remove any burden from insurance companies.

Benefits:

- Would also provide high volume data which would allow the CSO to develop a hedonic model to estimate a constant quality price index.
- Data would be from actual transactions
- Would place no burden at all on insurance companies. All burden would be between CSO and the service provider

Challenges:

- Limited scope; the coverage would only be those sectors which can be priced using broker portals. This would be the office and retail sectors predominantly as well as certain tradesmen.
- There are issues in relying on one data source for prices. The quality of the index could be dependent on the performance of the service provider. If brokers were to move away from using the service or to another service, the index could display price movements that were due to a diminishing survey size rather than true price movements.
- There are complex and significant challenges in developing a hedonic pricing model for insurance. There is limited international precedent surrounding this method of pricing insurance.
- Again, there could be issues with surrounding the transfer of personal data under GDPR.

Based on these benefits and the challenges associated with creating a price index using this method, it was determined that developing a price index from transaction data from a third-party service provider was too difficult to put into practice at this time.

3. Using third-party service to price a high volume of representative profiles

Developing on from the previous option of receiving transactions data from the service provider, the CSO investigated using the service to operate as a “dummy” broker. This would mean the CSO retrieves quotes for a large number of representative profiles using the portal and using web scraping technology to automate the process.

This is the method of data collection the CSO proceeded to investigate further and the initial pilot study has produced positive results. The CSO contacted insurance companies to get set up as a “dummy broker” with access to the insurance companies’ broker only portals. By using the broker portal and automated web browsing the CSO can track the price of a representative profile over a given time period to produce a price index.

Benefits:

- Allows for a high volume of prices to be priced
- CSO has control over data collection (e.g. frequency of collection, type of profiles collected, additions can be made easily)
- No burden on insurance companies once CSO is set up as a broker.
- No issues with personal data as all profiles are representative profiles created by the CSO

Challenges:

- Index has limited scope. Only those sectors that can be priced on online portals are included in the index.

- Time consuming to create the web-automation and profiles. Once those are created though there is minimal upkeep required.

3. Overall Experience Using Third Party Data to Price Insurance

The CSO has had a varied experience in working with data directly from third-party sources. In terms of using third-party data for the development of motor insurance price indices for the CPI it has proved extremely promising. The data allows for a much larger sample size allowing for the production of a more accurate index.

The use of third-party data to produce a price index for business insurance premiums was less promising. Some of the difficulties experienced are listed below:

- Receiving data from the insurance companies directly would have required a ministerial order to make data transfer compulsory which would have been time consuming.
- There were concerns that data collection from a service provider was dependent on the performance of the company. If the uptake of licenses by brokers was small there would only be a small number of quotations every month.
- Data protection issues with transferring actual transaction data from Third Party to CSO
- Very little experience within the CSO of dealing with the above issues.

4. Conclusions

Working directly with third-party data is a relatively new practice inside the CSO and as such there have been a number of issues to overcome. However, utilizing third party data effectively can allow a statistical agency to overcome resourcing restraints and knowledge gaps to develop good quality price indices.