

Institute and Faculty of Actuaries

Periodical Payment Orders Working Party Update

GIRO 2014 Survey Report – YE 2013 Data

by the Periodical Payment Orders Working Party

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Executive summary

This year has largely been one of consolidation. The small sample size of PPOs in the survey creates uncertainty as to whether the observations in the data are a trend or just volatility. The number of PPOs settling in 2013 was lower than in 2012, as was the number of large claims. For the lower value claims the proportion of large claims settling as a PPO has reduced. For claims above £2m, the proportion has been in line with previous years. There are enough external factors that are unstable and influence PPO propensity that it is impossible to know whether this is volatility or a trend. Factors such as the ongoing Ogden consultations and low ASHE 6115 inflation are likely to have had some impact on PPO propensity.

One key unfolding situation that will influence whether the experience is a trend is the ongoing discount rate consultation. This will define the future real discount rate for lump sum settlements and hence PPO propensity due to their relative economic values driving attractiveness. The most recent development is the appointment of the three experts as the panel of advisors to the government. They have a mandate to report back within six months.

The impact of Inflation on PPO propensity should not be ignored. The 80th percentile of ASHE 6115 was only slightly above zero, following two years' of negative inflation. This may impact on the attractiveness of PPOs for claimants and the subsequent propensity of PPOs.

Given that the environment is still developing and the different appetites of companies, it is unsurprising that there remains a difference between companies, as highlighted by interviews of senior actuaries in the qualitative survey results. Of note is investment strategy, which continues to be an area consisting of different approaches. Insurers are seemingly recognising the different nature of the risks by starting to amend their investment strategy. However insurers appear to recognise that it is extremely challenging to fully match PPO liabilities, as most are not intending to use the matching adjustment at this point in time.

Lastly and most importantly, thanks to all the working party members. Not just for volunteering their time but also contributing to the vibrant and energetic discussions. Without them we would not be able to produce what we do. So thanks to them, and to their companies for allowing them to provide such valuable input. Particular thanks must go to associates at Towers Watson who performed the analysis of the data, especially Patrick Tingay.

Members

Peter Saunders (Chair) Emma Potter (Deputy Chair) Fiona Annandale Mark Brunning Alice Boreman Keith Brown Frank Chacko Antony Claughton William Diffey Robert Harrison Gavin Hill Amit Lad Miriam Lo Xavier Lo Daniella Lobo Sarah MacDonnell Shauna McGrath Loan-Ahn Nguyen Tina Ruffle Kerry-Lee Reilander Amy Ryder Oliver Wallace Gerard Walls Anthony Wright

Industry Survey

1 Introduction

1.1 Release

The data for this survey was taken as at 31 December 2013. This release of the 2014 PPO Working Party survey analysis supersedes any prior publication.

Similar studies have been published by the PPO Working Party annually since 2010. Each year the mix of insurers has changed and every year the data provided for previous studies is ignored and the analysis uses a new full historic snapshot from each of the contributors. The data between surveys will not be directly comparable as a different mix of insurers will have contributed to each successive survey. Changes in claim classification by insurers can also lead to a difference in the re-based results.

1.2 Contributors

We have received data comprising 397 Motor Periodical Payment Orders (PPOs) and 46 Liability PPOs (443 PPOs in total). The insurers surveyed account for over 90% of the PRA regulated market (based on 2013 gross premium volumes) for motor, including personal and commercial insurance, comprehensive and non-comprehensive covers. In addition, there are further companies which contribute to the survey but do not appear in the 2013 PRA returns.

We are very grateful to all the contributors without whom the survey would simply not be possible.

The following contributing insurers would like to be acknowledged for their participation in the survey (though this list does not include all contributors):

- Ageas (AIL)
- AIG
- Allianz Insurance
- Aviva
- AXA
- Covea
- CFS
- Direct Line Group
- esure
- Liverpool Victoria
- NFU Mutual
- RSA
- Saga
- Tesco Underwriting
- Zurich Insurance

1.3 Executive Summary

The headline results from this year's survey are:

- The number of PPOs settling in 2013 has fallen.
 - The total number of PPO settlements in 2013 is 32% lower than in 2012. However, it is not possible determine if this is an indication of a trend or volatility.
- PPO propensity has reduced in 2013, albeit not to the same extent as the number of PPOs.
 - The reduced impact on propensity is due to a reduction in large claims settlements.
 - Motor PPO propensity for 2013 is 27% compared to 35% for the 2012.
 - Liability PPO propensity for 2013 is at 8% compared to 18% in 2012, but the small volume of data gives rise to significant volatility, so no solid conclusions can be made.
 - There are a number of potential explanations for the PPO propensity reduction, including volatility.
- Average delay to settlement of a PPO (from accident date) has reduced in 2013.
 - But it has also reduced for non-PPO large claims.
- Average PPO lump sums and periodic payment amounts have increased in 2013.
 - This may be a result of fewer smaller claims settling as a PPO.
 - Motor PPOs continue to cost more than Liability PPOs and are also paid for longer durations.
 - Private Motor PPOs have lower annual payments than Commercial Motor PPOs, but are paid for longer durations due to younger claimants.
 - Spinal injury PPOs have higher lump sum amounts and annual payments due to the higher care regime, but PPOs associated with Brain injuries have longer durations as they are more common for younger claimants.
- Approaches taken by insurers still differ greatly, but insurers appear to be more comfortable with dealing with PPO claims.
 - Only half of the insurers surveyed include an explicit PPO loading within their pricing.
 - The most commonly used real discount rate for valuing PPO reserves is 0%, with some insurers using as low as -1.5% or as high as 1%.
 - About a third of insurers polled have changed their investment strategy to consider their PPO liabilities.
 - Most insurers are not intending to use the Matching Adjustment for PPOs at this point in time.
 - More than a third of insurers surveyed are still using an annuity-certain approach to reserving settled PPOs, as opposed to a probabilistic approach.
 - Sophistication of allowing for PPOs within capital models has increased over the last year, and continues to improve.

1.4 Contact

If you have any questions regarding the survey, including requests for information or statistics from the data that are not published within this document, please contact Kimberley Hutton at the Institute and Faculty of Actuaries (<u>kimberley.hutton@actuaries.org.uk</u>) in the first instance, who will put you in contact with the PPO Working Party.

2 Number and Propensity of PPOs

2.1 Number of PPOs

Figure 2.1 below shows the total number of PPOs (Motor and Liability combined) settled in each quarter from 2005 to the end of 2013.



Number of PPOs by Settlement Quarter

Figure 2.1: Total number of PPOs by Settlement Quarter

If we look at these figures on an annualised basis in Figure 2.2 below, the number of PPOs settled each year has decreased in 2013 from a relatively stable level between 2010 and 2012. There are many potential reasons for this reduction, and because of this uncertainty, combined with the ongoing Ogden discount rate uncertainty and the continuing low interest rate environment; it is not possible to know whether this is a trend that will continue or not.



Number of PPOs by Settlement Year

Figure 2.2: Number of Motor and Liability PPOs by Settlement Year

The potential causes of a reduction in the number of PPOs are discussed in the PPO Propensity section, which considers the reduction relative to the trend in the number of large claims.

Figure 2.3 shows (for each settlement year) the proportion of the year's PPOs that settle in each quarter. The previously observed trend of settling more PPOs in the fourth quarter has not continued in 2012 and 2013.



Proportion of PPOs that settle in each Quarter

However, since the ASHE index is published during Q4, it is unsurprising that there continue to be more PPOs that commence payment in this quarter, as it ensures that the payments more accurately reflect inflation in ASHE. This is shown in Figure 2.4 below.



Proportion of PPOs that start in each Quarter

Figure 2.4: Proportion of total PPOs that are paid in each quarter, by first payment year

Figure 2.3: Proportion of total PPOs that settle in each Quarter, by Settlement Year

2.2 Motor PPO Propensity

We received some data for individual large claims settled since 2008, which has enabled us to investigate the propensity of PPOs as a proportion of large claims. The definition of a large claim is greater than £1 million in 2011 values, indexed at 7% per settlement year.

Figure 2.5 below shows Motor PPO propensity as a proportion of large claims. It only considers PPOs with a value above £1million (indexed in the same way as the large claims), and these are included in the exposure bars. For the whole of Section 2, PPOs have been valued using a real discount rate of 2.5% (unless stated otherwise) so that the figures are comparable to traditional lump sums that will have been valued using the current Ogden discount rate of 2.5%.

The values of the PPOs have been estimated using a consistent basis, so that the effect of different reserving basis for different insurers is removed. However, the valuation assumes the life expectancy provided by the insurer, the basis for which differs between insurers



Figure 2.5: Proportion of Motor large claims that settle as a PPO, by Settlement Year

The definition of large claims, as well as the definition of which large claims are settled, is unlikely to be consistent between all contributors. Further to this we noticed that the large claim count for some insurers is not consistent with that provided last year. This is due to a change in basis as well as expected changes caused by the reopening of claims. Consequently, the number of large claims and re-based PPO propensity differ from results from previous surveys.

The dip in the overall number of large claims settled in 2010 (and a correspondingly higher PPO propensity for that settlement year) may have been caused by the Ogden discount rate review announcement which may have led to deferment of settlement for some large claims whilst the outcome of the decision is awaited.

The Motor PPO Propensity for settlement years 2009, 2011 and 2012 is broadly stable, but there has been a reduction in 2013. The reduction in the number of PPOs has outweighed the reduction in the number of large claims settling during 2013, resulting in a reduced PPO propensity.

Reasons for reduced propensity

There are a number of potential causes for this Motor PPO Propensity reduction:

- Data collection issue
 - Whilst it's possible for it to be a data issue, Figure 2.3 suggests that there is not an issue with PPOs settling late in 2013 not being reported. In particular, the data collection was performed as at March 2014.
- Driven by particular insurer
 - There is a possibility that the overall reduction is caused by just one or two large contributors. However, looking at individual insurer propensity rates over time (as summarised in Figure 2.10) shows that this is not the case.
 - Not all insurers saw a reduction in propensity in 2013, and of those that did, some experienced a greater drop than others.
- Volatility (not a trend)
 - Figure 2.1 shows how PPO settlements are volatile by quarter. Furthermore, the number of PPOs and large claims divided by each settlement year creates relatively small samples.
- Impact of Ogden discount rate consultations
 - However, the peaks and troughs in PPO settlements as shown in Figure 2.1 may be driven by external factors, such as the impact of the Ogden discount rate consultation announcements.
 - There has been a general steady fall in PPO settlements since 2012 Q3, when the first Ogden discount rate consultation began in August 2012. A second discount rate consultation in February 2013, publication of personal injury research in September 2013, and general lack of a resolution may have contributed to a fall in PPO settlements whilst an outcome is awaited.
- Run-off of a backlog of claims with potential to settle as a PPO
 - It may be that a backlog of potential PPO claims that arose when the legislation was first introduced has now been cleared.
 - At the start, there would have been more claims outstanding in old prior years waiting for a PPO settlement to come through, and now we may be returning to the long run average and the new lower rate will persist.
 - The reducing delay to settlement shown in Figure 3.8, and the corresponding reduction for non-PPO large claims, supports this.

- Insurer claims management behaviour
 - It may be that insurers' claims management is improving so that insurers are able to settle potential PPO claims as traditional lump sum settlements.
 - Since PPOs can be imposed by the court, the claimants would likely also have to be in favour of this change.
 - Figure 10.1 shows that insurers' concern levels have generally remained the same.
 - This could be caused by them being able to avoid PPOs easier, but equally does not suggest a driver for trying to avoid them more.
- Claimant appetite for PPOs.
 - Most PPOs are driven by the needs of the claimant, and recent research published in September 2013 carried out by the Ipsos MORI Social Research Institute on behalf of the Ministry of Justice Analytical Services ("Personal Injury Discount Rate Research", <u>http://www.justice.gov.uk/publications/research-and-analysis/moj</u>, 2013) suggested that a lump sum can be in the best interest of the claimant in many circumstances.

Motor PPO Propensity by claim size

Figures 2.6 to 2.9 show Motor PPO propensity under different large claims thresholds. As above, the thresholds are indexed back at 7% per settlement year. The graphs below are shown using two different sets of bandings ("a" and "b"). Note there are no large claims above £25 million in the survey.

Figures 2.6 and 2.7 only consider large claims and PPOs from the 2009 settlement year onwards since, as shown in Figure 2.5 above, propensity levels in 2008 were at a much lower level than subsequent settlement years following the landmark case of Thompstone vs Tameside.

Motor PPO Propensity by claim size - incremental thresholds

It can be seen in Figure 2.6(a) below, that the larger the claim, the more likely it is to have settled as a PPO, with (across all settlement years) 13% of claims in the £1million to £2million bracket settling as PPOs and 78% of claims greater than £7million settling as PPOs. There are some PPOs which have settled for a value less than £1 million, but since there are very few of these, the probability of a claim less than £1 million to settle as a PPO is deemed insignificant.



PPO Propensity at different Large Claim Thresholds - Incremental thresholds

Figure 2.6(a): Motor PPO propensity by large claim threshold bands (settled since 2009 only)



PPO Propensity at different Large Claim Thresholds - Incremental thresholds

Figure 2.6(b): Motor PPO propensity by large claim threshold bands (settled since 2009 only),

Motor PPO Propensity by claim size - cumulative thresholds

The following graphs in Figure 2.7(a) and (b) show the same information but on a cumulative basis. The propensity for large claims greater than £1million to settle as a PPO (across all settlement years) is 32%, however when considering only claims above £2million the propensity rises to 49%.



Figure 2.7(a): Motor PPO propensity by cumulative large claim threshold (settled since 2009 only)



PPO Propensity at different Large Claim Thresholds

Figure 2.7(b): Motor PPO propensity by cumulative large claim threshold (settled since 2009 only)

Motor PPO Propensity by claim size, by settlement year - incremental thresholds

Figures 2.8(a) and (b) below show the PPO propensity by threshold size for settled claims, split by settlement year. In 2008, the propensity was significantly lower than that experienced in later years. At larger thresholds there are significantly fewer claims which means there will be more variability in the propensity measure at these thresholds.



Figure 2.8(a): Motor PPO propensity by large claim thresholds split by settlement year incremental



PPO Propensity by Settlement Year

Figure 2.8(b): Motor PPO propensity by large claim thresholds split by settlement year incremental

Motor PPO Propensity by claim size, by settlement year – cumulative thresholds

Figures 2.8 (a) and (b) show that the PPO propensity for smaller large claims (£1m-£2m) was lower in 2013, but the propensity for the larger large claims (£5m+) was as high as in previous settlements years (and significantly higher than the 2012 settlement year).

Figures 2.9(a) and (b) below show the same information on a cumulative basis. The graph suggests that the 2012 PPO propensity figure for claims larger than £5m was an anomaly as the 2013 propensity is seen to follow a similar pattern to the older years.



PPO Propensity by Settlement Year - Cumulative thresholds

Figure 2.9(a): Motor PPO propensity by large claim thresholds split by settlement year – Cumulative



Figure 2.9(b): Motor PPO propensity by large claim thresholds split by settlement year -Cumulative

Motor PPO Propensity by individual insurer

There is significant variation in the PPO propensity experienced by different insurers. The following graph indicates the distribution of Motor PPO propensity across insurers in the survey. It excludes insurers which have settled fewer than 25 Motor large claims or PPOs in the last 5 years, and only includes PPOs and large claims settled since 2008.



Distribution of PPO propensity by Insurer - Motor

Figure 2.10: Distribution of Motor PPO propensity for insurers who have settled at least 25 large claims (including PPOs) since 2008

The variability in the propensity may be at least partially due to the definition of large claims used by each provider. However we are not surprised to see a variation in propensity between insurers, for example, as a result of differences in the policyholder (and hence claimant) profile arising from the mix of business, as well as due to different attitudes towards settling claims as PPOs by various insurers.

There has been very little movement in each insurer's PPO propensity since last year, with only one company moving between bands (once merger and acquisition activity has been accounted for). This suggests that the overall 2013 reduction in PPO propensity is not driven by the experience of just one company.

Triangles of Propensity Rates

We also have the data to enable us to look at triangles of propensity rates which take into account accident period as well as settlement period. These cumulative figures can be seen in Figures 2.11 to 2.13 below (and incremental figures are shown in Figures 2.14 to 2.16). We have only collected data on large claims settled since 2008, so the cumulative triangles the cells shaded in blue are incomplete and as such should be treated with caution. We have combined accident years prior to 2001; the oldest accident year to be included is 1997, for which the development is incomplete.

	Settlement Yea	ar												
Accident Year	0	1	2	3	4	5	6	7	8	9	10	11	12	13
2000 and Prior									41	74	92	105	119	120
2001								20	32	36	42	46	50	
2002							22	40	55	63	66	70		
2003						24	51	66	85	97	102			
2004					11	37	54	77	83	93				
2005				9	21	37	63	78	88					
2006			4	9	24	44	68	86						
2007		1	5	8	26	51	84							
2008	0	0	2	8	25	38								
2009	4	5	6	15	31									
2010	0	0	0	5										
2011	0	0	3											
2012	0	2												
2013	0													

Figure 2.11: Triangle showing cumulative development of non-PPO large claim numbers

	Settlement Year													
Accident Year	0	1	2	3	4	5	6	7	8	9	10	11	12	13
2000 and Prior	0	0	0	0	0	3	5	7	14	25	39	45	51	53
2001	0	0	0	0	0	1	2	5	9	10	11	12	12	
2002	0	0	0	0	2	2	5	13	16	18	22	23		
2003	0	0	0	1	1	4	13	18	22	27	29			
2004	0	0	0	0	3	18	30	35	43	44				
2005	0	0	1	3	9	23	37	43	45					
2006	0	0	1	6	21	29	40	47						
2007	0	0	0	3	18	23	29							
2008	0	0	3	9	23	30								
2009	0	0	3	9	22									
2010	0	0	2	6										
2011	0	0	1											
2012	0	0												
2013	0													

Figure 2.12: Triangle showing cumulative development of PPO claim numbers

	Settlement Ye	ar												
Accident Year	0	1	2	3	4	5	6	7	8	9	10	11	12	13
2000 and Prior									25%	25%	30%	30%	30%	31%
2001								20%	22%	22%	21%	21%	19%	
2002							19%	25%	23%	22%	25%	25%		
2003						14%	20%	21%	21%	22%	22%			
2004					21%	33%	36%	31%	34%	32%				
2005				25%	30%	38%	37%	36%	34%					
2006			20%	40%	47%	40%	37%	35%						
2007		0%	0%	27%	41%	31%	26%							
2008	0%	0%	60%	53%	48%	44%								
2009	0%	0%	33%	38%	42%									
2010	0%	0%	100%	55%										
2011	0%	0%	25%											
2012	0%	0%												
2013	0%													

Figure 2.13: Triangle showing cumulative development of propensity rates

	Settlemen	t Year												
Accident Year	0	1	2	3	4	5	6	7	8	9	10	11	12	13
2000 and Prior									41	33	18	13	14	1
2001								20	12	4	6	4	4	
2002							22	18	15	8	3	4		
2003						24	27	15	19	12	5			
2004					11	26	17	23	6	10				
2005				9	12	16	26	15	10					
2006			4	5	15	20	24	18						
2007			4	3	18	25	33							
2008	0	() 2	6	17	13								
2009	4		1	9	16									
2010	0	() 0	5										
2011	0	() 3											
2012	0	2	2											
2013	0													

Figure 2.14: Triangle showing incremental development of non-PPO large claims

	Settlement Year													
Accident Year	0	1	2	3	4	5	6	7	8	9	10	11	12	13
2000 and Prior	0	0	0	0	0	3	2	2	7	11	14	6	6	2
2001	0	0	0	0	0	1	1	3	4	1	1	1	0	
2002	0	0	0	0	2	0	3	8	3	2	4	1		
2003	0	0	0	1	0	3	9	5	4	5	2			
2004	0	0	0	0	3	15	12	5	8	1				
2005	0	0	1	2	6	14	14	6	2					
2006	0	0	1	5	15	8	11	7						
2007	0	0	0	3	15	5	6							
2008	0	0	3	6	14	7								
2009	0	0	3	6	13									
2010	0	0	2	4										
2011	0	0	1											
2012	0	0												
2013	0													

Figure 2.15: Triangle showing incremental development of PPO large claims

	Settlement	Year												
Accident Year	0	1	2	3	4	5	6	7	8	9	10	11	12	13
2000 and Prior									15%	25%	44%	32%	30%	67%
2001								13%	25%	20%	14%	20%	0%	
2002							12%	31%	17%	20%	57%	20%		
2003						11%	25%	25%	17%	29%	29%			
2004					21%	37%	41%	18%	57%	9%				
2005				18%	33%	47%	35%	29%	17%					
2006			20%	50%	50%	29%	31%	28%						
2007		0%	0%	50%	45%	17%	15%							
2008	0%	0%	60%	50%	45%	35%								
2009	0%	0%	75%	40%	45%									
2010	0%	0%	100%	44%										
2011	0%	0%	25%											
2012	0%	0%												
2013	0%													

Figure 2.16: Triangle showing propensity rates by accident year and settlement period

Motor PPO Propensity – as proportion of exposure

Figure 2.17 below uses a different method to measure PPO propensity. This method looks at the number of PPOs as a proportion of earned premium. We have taken the number of PPOs settled in a given year divided by an average earned premium based on the premium earned over a 6 year period starting 7 years earlier (i.e. the number of PPOs settled in 2012 is divided by the average annual amount of gross premium earned during the period 2006 to 2011). These PPO propensity figures include all PPOs and not just those over £1 million, and are in terms of the number of PPOs per £1,000 million of gross earned premium.



PPO Propensity per £1,000m of Gross Earned Premium

Figure 2.17: Propensity of PPOs measured as a proportion of gross earned premium

Figure 2.18 below shows the PPO propensity as a proportion of average earned vehicle years. The definition of average exposure is the same as that for earned premiums above. The graph shows the total number of PPOs (not just those over £1million) per million earned vehicle years.



PPO Propensity per million Earned Vehicle Years

Figure 2.18: Propensity of PPOs as a proportion of earned vehicle years

Motor PPO Propensity - Commercial vs Private Motor

Figure 2.19 below looks at the cumulative PPO propensity of Motor claims at different thresholds, split by private and commercial vehicles. It only considers settlement years from 2008 onwards. We can see that the commercial PPO propensity appears to be greater for all claim sizes.



Private/Commercial Propensity by Large Claim Threshold

Figure 2.19: PPO propensity for private and commercial Motor by large claims threshold

When looking at the propensity by settlement year in Figure 2.20, the PPO propensity for commercial Motor is much greater in settlement years 2009, 2010 and 2013 and has been steadily increasing since 2011.



Private/Commercial Propensity by Settlement Year

Figure 2.20: PPO propensity for private and commercial Motor by settlement year

2.3 Liability PPO Propensity

Figure 2.21 below shows Liability PPO propensity as a proportion of large claims (greater than £1 million in 2011 terms, indexed at 7% per annum). The exposure count shown in the graph includes PPOs with a value above £1million (indexed in the same way as the large claims).

The PPO propensity for Liability claims appears to still be significantly lower than that for Motor PPOs. The small number of Liability claims that have settled in each year is likely to have contributed to the volatility in experience. In particular, there was only one Liability PPO (above £1million indexed) that settled in 2008.



PPO Propensity of Large Claims - Liability

Figure 2.21: Proportion of Liability large claims that settle as a PPO, by settlement year

Liability PPO Propensity by claim size – incremental thresholds

Figure 2.22 below shows the PPO propensity for Liability PPOs by large claim threshold. As in the Motor PPO propensity section, the threshold definitions are defined in monetary terms and indexed back at 7% per settlement year. The PPO values have been derived using a real discount rate of 2.5%. Figures 2.22 and 2.23 only represent claims settled since the beginning of 2009.

Figure 2.22 shows that PPO propensity increases with the large claims threshold band until claims reach £4-5 million. However, there are only five Liability PPOs greater than £5 million; so the results will be volatile.



PPO Propensity at different Large Claim Thresholds - Incremental thresholds

5 7 7 7 7 5 7 7 7

Liability PPO Propensity by claim size - cumulative thresholds

Figure 2.23 below shows the cumulative PPO propensity by large claim threshold. Unlike for Motor, after a threshold of £4 million, it appears as though propensity decreases as the threshold increases.



PPO Propensity at different Large Claim Thresholds - Cumulative thresholds

Figure 2.23: Liability PPO propensity by cumulative large claim threshold (settled since 2009 only)

Liability claims are more likely to come from policies that have a limit on the cover provided, as opposed to Motor claims falling under unlimited motor bodily injury cover. As a result, larger Liability claims may be less likely to settle as PPOs, which may explain the trend seen above in Figures 2.22 and 2.23 of a lower PPO propensity for the largest Liability claims. However, the small amount of data makes it difficult to support this conclusion.

Liability PPO Propensity – as proportion of exposure

Figure 2.24 below shows the propensity of Liability PPOs as a measure of gross earned premium. The definition of gross earned premium is the same as that for Motor PPOs. These PPO propensity figures include all PPOs and not just those over £1million, and are in terms of the number of PPOs per £1,000 million of gross earned premium.



PPO Propensity per £1,000m of Gross Earned Premium

Figure 2.24: Propensity of Liability PPOs by gross earned premium

3 Motor PPOs – General Characteristics

3.1 Cover Type

The pie chart on the left in Figure 3.1 shows the proportion of Motor PPOs split by cover type, and the one on the right shows the split of cover type based on premium data supplied by the contributors. They show that in total (over all insurers), the proportion of PPOs for private car cover corresponds to the proportion of premium that the cover makes up.



Figure 3.1: Commercial/ Private Split of Motor PPOs and Motor Premiums

Similarly, the two charts in Figure 3.2 compare the proportion of PPOs from comprehensive and noncomprehensive private Motor policies against the proportion of premium written. Noncomprehensive policies give rise to a disproportionate number of PPO claims.



Figure 3.2: Comprehensive/ Non-Comprehensive Split of Motor PPOs and Motor Premiums

3.2 Indexation Measures

The index used to inflate annual payments was originally automatically linked to the Retail Prices Index (RPI). However, in 2006, a court case was brought in the form of Thompstone vs Tameside and Glossop Acute Services NHS Trust which questioned this assumption and suggested that the payments for future cost of care would be better linked to wage inflation. The court agreed and the annual inflation increase was linked to the Annual Survey of Hours and Earnings (ASHE). The case was appealed and a number of other cases were put on hold pending the outcome. In January 2008, the Court of Appeal upheld the ruling that a different index other than RPI can be chosen if thought more appropriate ([2008] EWCA Civ 5). Since then the majority of PPOs have had inflation linked to ASHE as is shown in Figure 3.3 below.

There were further legal decisions in 2008 that contributed to the final definition of the model order. In July Justice McKay confirmed the model for the wording of the Periodic Payment Orders ([2008] EWHC

2423 (QB)). In December Justice Holland confirmed the approach of the previous judgements ([2008] EWHC 2948 (QB)). Exactly what was the trigger for an increase in the PPO numbers is a matter for debate and we are unlikely to ever know the answer. It is worth noting that the fourth quarter of 2008 is roughly in line with early 2009. An alternative argument is that in early 2009, there were a large number of prominent lawyers giving lectures on the subject, and the increased awareness as a result of this may have been the trigger for the increased PPO numbers.

PPOs can have different elements included within the regular stream of payments, for example they can include both a loss of earnings and a cost of care head of damage. These can be linked to different indices, so Figure 3.3 below just shows the index for the primary head of damage PPO payment, where the primary head of damage has been defined as the one for which the associated PPO amount is the largest.



Number of Motor PPOs by Settlement Quarter split by Indexation

Figure 3.3: Number of Motor PPOs settled in each quarter split by index used for initial PPO for each claim ASHE is produced by the Office of National Statistics (ONS) every November, based on data as at April. It covers a wide range of occupations, though the vast majority of PPOs so far have, in respect of care costs, been linked to sub-category 6115, relating to care assistants and home carers.

Within a particular job category, the ASHE earnings inflation measures are further split into percentiles. A PPO will have the annual inflation linked to a specific percentile, for example to those whose earnings are in the top 10% of earners in the category (i.e. the 90th percentile).

Implemented in the 2011 survey, ASHE code 6115 (Care assistants and home carers) has been split into two new codes; 6145 (Care workers and home carers) and 6146 (Senior care workers). Even though the ONS have stated that they will continue to publish 6115, albeit separately to the main tables, 'for the foreseeable future', there is an additional complication since the basis of the ASHE 6115 figures has changed, and so a slight adjustment is required to be made to the figures for 2011 onwards (details are available within the ONS download of ASHE Table 26 which corresponds to SOC 6145 and 6146). Within the survey, no PPOs have yet been settled that are recorded as being linked to one of the new ASHE codes.

Table 3.1 below shows the breakdown of all Motor PPO payments in the survey, by head of damage and indices. Note there are 433 Motor PPO payment streams (corresponding to 397 Motor PPOs, 32 of which have second heads of damage and 4 that have a third head of damage).

All Heads of Damage	ASHE 6115	ASHE Other	RPI	Not Indexed	Total
Care	357	1	0	17	375
Loss of Earnings	5	13	3	0	21
Case Management	0	0	1	0	1
Rent/Accomodation	0	0	1	0	1
Other	1	0	10	3	14
NA/Missing	17	0	2	2	21
Total	380	14	17	22	433

Table 3.1: Index linked to each head of damage for Motor PPOs

It can be seen in Figure 3.4 that there has been an increase in the use of the 80th percentile over time, which in the 2013 settlement year accounted for over 90% of Motor PPOs; up from just over 30% in 2008. This appears to be primarily at the expense of the 75th percentile which was the most popular in 2008.



Distribution of ASHE 6115 Percentiles by Settlement Year

Figure 3.4: Distribution of ASHE 6115 Percentiles used for Motor PPOs primary Head of Damage by Settlement Year

3.3 Claimant and Driver Details

Figure 3.5 shows the number of PPOs by age and gender of driver at the time of the accident.

The profile of driver age for males is similar to the claim frequency profile by driver age seen across the industry. This is less apparent for females, though this may just be due to the relatively small sample size for females. Please note, these figures are for private and commercial covers combined; the profile is different depending on which cover you are looking at (these differences are shown in Section 5).



Number of Motor PPOs by Age of Driver

Figure 3.5: Age of Driver at the time of Accident by Gender

Figure 3.5 above shows that most PPO claims involve younger drivers. Figure 3.6 below shows that the modal PPO claimant age for both males and females is between the ages of 15 and 19.



Age of Claimant at time of Accident

Figure 3.6: Age of Motor PPO Claimant at the time of Accident by Gender

Figure 3.7 below, shows that there is a strong relationship between young drivers and young claimants. In particular the 16-19 driver age bracket has over 80% of PPO claimants under 25. This may be due to a feature of young male drivers tending to drive around with a group of similarly aged friends in the car and being more likely to have a serious accident at speed.

However it is worth noting that claimants between the ages of 15 and 24, where the drivers are also between these ages, only represent 53 (or 13%) of Motor PPO claims in this survey.



Age of Driver against age of Claimant at Time of Accident

Figure 3.7: Age of Motor PPO Claimant at the time of Accident

Delay to Settlement

Figure 3.8 shows the delay in claim settlement from the date of accident. This is calculated as the time elapsed between accident and PPO settlement, rounded to the nearest whole year.

Claimants who are younger at the time of the accident tend to have longer settlement delays; this is likely to be due to the fact that minors are advised to wait until they are at least 18 before seeking to settle their claims, as only then then can a fair medical prognosis of their condition be made. This would explain the spike in settlements at durations of 13 to 14 years in the Figure 3.8 below.

Figure 3.8 below suggests that the distribution of PPOs by delay to settlement appears to be shifting towards shorter durations, with the average decreasing from 6.8 years for claims settled in 2009 to 5.8 years for claims settled in 2013. The shape of the distribution for the 2012 settlement year looks significantly different to previous settlement years, but the distribution for the 2013 settlement year seems to be more in line with previous years.



Figure 3.8: Distribution of Delay to Motor PPO Settlement by Settlement Year

The peak in the number of PPOs for claimants aged 20-24 at settlement date seen below in Figure 3.9 corresponds to the peak in number of PPOs for claimants aged 15-19 at age of accident as seen in Figure 3.6.



Age of Claimant at date of Settlement

Figure 3.9: Age of Motor PPO Claimant at the time of Settlement by Gender

The below scatter plot in Figure 3.10 shows that longer delays to settlement are more likely for claimants under 18; this is probably due to the effect of minors waiting until the age of maturity for settlement as discussed above.

This is emphasized in Figure 3.11 below which shows the average delay to settlement for each of the claimant age bands.



Figure 3.10: Scatter Graph showing age of Motor PPO claimant at the time of accident against delay to settlement

The coefficients given in these graphs represent the strength and direction of the correlation between the two variables. A larger absolute value represents a stronger relationship in the data.



Average delay to Settlement

Figure 3.11: Average Delay to Settlement by Age of Motor PPO Claimant at Accident date

3.4 Future Life Expectancy

The term 'life expectancy' in this document is defined as the future life expectancy at the time of settlement, as per the survey responses. There is likely to be a wide variation in the practise of determining the future life expectancy in the market, for example, claimant experts' views, defendant experts' views, a mid point in-between and internal views.

Figure 3.12 shows the distribution of life expectancy for the 394 Motor PPOs for which it was provided.



Distribution of Future Life Expectancy at the time of settlement

Figure 3.12: Distribution of future life expectancy from date of settlement (Motor PPOs only)

It is no surprise that future life expectancy reduces with age of claimant. This can be seen clearly in Figure 3.13 below.

Age of Claimant at Settlement Date against Future Life



expectancy from date of settlement (Motor PPOs only)

However there is no discernible correlation between age of claimant and reduction in future life expectancy compared to an unimpaired life. This is illustrated in Figure 3.14 below.

Percentage reduction in life expectancy is defined as:



Where the unimpaired life expectancy is taken from the version 7 of the Ogden tables, and all life expectancies are quoted as at date of settlement.



Age of claimant at time of settlement aganst % reduction in Life expectancy

Figure 3.14: Scatter Graph showing age of claimant at date of settlement against % reduction in life expectancy(Motor PPOs only)

Figure 3.14 above shows some cases of negative reductions in life expectancy; this is likely to come from differences between the unimpaired life expectancy taken from the Ogden 7 tables and that used by the insurer. The reasons for these differences are unclear, but one possible explanation is that the insurer assumes greater longevity improvements than those incorporated in the Ogden 7 tables.

3.5 Lump Sums and Initial Payments

Figure 3.15 below shows the distribution of the lump sum elements of Motor PPOs in the survey (where the lump sum element excludes the first regular PPO amount). Note that all the lump sum values are in nominal terms.



Distribution of Lump Sums

Figure 3.15: Distribution of size of Lump sums associated with a Motor PPO, by settlement year

Figure 3.16 below shows the distribution of the initial regular payment amount of Motor PPOs in the survey at the time of settlement. It should be noted that in cases where one claimant is awarded more than one series of payments (corresponding to different heads of damage) the PPO amount is the sum of the payments for all heads of damage. The un-inflated initial PPO payment has been used which is the size of the annual payments at settlement (before any stepped payments kick in).

These figures have not been indexed and are in nominal terms for simplicity. However, as the inflation measured by the ASHE index has been negligible since 2009 they wouldn't look much different on an indexed basis.



Distribution of Initial PPO Amounts

Figure 3.16: Distribution of size of initial regular Motor PPO payment, split by settlement year IFoA PPO Working Party, GIRO 2014 Report

The distributions of PPO amounts and lump sum amounts appear to have followed reasonably consistent distributions over the last 5 years (considering the relatively small sample size). The initial PPO amounts for PPOs awarded in 2013 suggest fewer PPOs with smaller regular payments, and a few more with much larger payments.

Unsurprisingly, there is positive correlation between the size of lump sum and the size of the annual PPO amount as demonstrated in the Figure 3.17 (which compares the nominal amounts of both).



Size of Lump Sum against Annual PPO amount



It can also be seen that there is a partial trend where PPOs with larger reductions in life expectancy have higher annual PPO amounts; this would make sense as more serious injuries are likely to have higher care costs and will also lead to shorter life expectancy.



% Reduction in Life expectancy against Annual PPO amount

Figure 3.18: Scatter Graph of reductions in life expectancy and Motor PPO payment amountsIFoA PPO Working Party, GIRO 2014 ReportPage 35

3.6 Stepped PPOs and other statistics

A significant proportion (31%) of Motor PPOs have stepped payments. A stepped PPO is a PPO where there is a provision for step changes in the regular payment to be made. These stepped changes will apply at fixed points in time, to situations where a specific change in circumstance has already been foreseen at the time of settlement. For example, there could be a step payment of a one-off increase in payments to be made to account for a claimant whose parents are the primary carers. This would allow for the time when the parents cannot deliver the same standard of care and additional care costs will need to be incurred.

Note that this is different to a variation order, which is an allowance for a change in the payment amount usually triggered by a certain event such as the claimant developing more symptoms in the future as a result of the original accident. The variation order only specifies the conditions of the trigger event at the time of settlement and does not specify the amounts that the payments will change to. Indemnity and Reverse Indemnity guarantees are also not included as stepped payments (See Table 3.2 below).

The majority of step changes tend to be increases, but it should be noted that the step change can be both upward and downward.

The following graph in Figure 3.19 shows that claimants at younger ages are more likely to have stepped payments. Younger claimants are more likely to require changes to their care as they grow older which suggests why we see this trend. The ages shown are age at accident date.



Number and Proportion of PPOs with Steps by Claimant age at

Figure 3.19: The number and proportion of Motor PPOs that include a step payment agreement by age of claimant

The data suggests that claimants with a spinal injury are also more likely to have a stepped payment than those with a brain injury (44% against 27%). This might be a result of the care regime for spinal injuries being more variable over a claimant's lifetime than that for brain injuries. As claimants with spinal injuries get older, they require a much higher level of care.
Table 3.2 below shows some statistics regarding the proportion of Motor PPOs that have various features. Please note that these figures are the number of PPOs that are recorded as having the feature, divided by the total number of Motor PPOs for which a response to that particular question was received. The table also shows the number of responses received (note that there are 397 Motor PPOs in total in the survey).

Feature	Proportion of Motor PPOs	Number of Responses
Stepped Payments	31%	395
Variation Orders	10%	389
Contributory Negligence	19%	342
Indemnity Guarantees	5%	343
Reverse Indemnity Guarantees	23%	302

Table 3.2: Proportion of PPOs with different features

There are 37 Motor PPOs with variation orders in the market. Of these, the 27 with descriptions provided all allow for revision of the order if pre-specified conditions develop. Data was not sufficient to establish whether the severity of injury of the claim is correlated with variation orders, however, of these 37 PPOs, a disproportionately high number related to spinal injuries (70% as compared to the general Motor PPO population proportion of 23%). The most prominent prespecified condition that could lead to a revision of the PPO is deterioration due to Syringomycelia (cyst within the spinal cord). Other conditions include epilepsy.

81% of Motor PPOs are paid annually and 16% quarterly with the rest being paid monthly.

The vast majority of claims have a single PPO claimant, with just 5 accidents that have two PPO claimants.

Only 19% of claims, for which the relevant information was provided, had some sort of contributory negligence.

In the majority (83%) of cases for which information was provided as to who decided on (pushed for) the PPO, it was solely the claimant who decided on the PPO. In 10% of cases it was a mutual decision between claimant and defendant, and about 6% of the cases were decided on by court. There was one PPO where the decision was driven by the defendant.

An indemnity guarantee is a guarantee given by the insurer to pay additional costs in circumstances such as where services provided by the local council are reduced or withdrawn in the future. A reverse indemnity guarantee would cover the opposite situation; for example, where the insurer can reduce their payments if the claimant increases their reliance on public provision of care.

Indemnity guarantees appear to be quite rare, applying to only 17 PPOs. However reverse indemnity guarantees appear to be more frequent; occurring in 69 Motor PPO cases.

We had much more data supplied in the field "Name of Third Party Legal Firm" this year. The name of the solicitor's firm was supplied in 364 out of the 443 PPOs. About 150 different solicitors named. Irwin Mitchell and Stewarts together make up about a third of all Motor PPO cases, with Pannone LLP following shortly behind them with significantly more PPO cases than most other legal practices. There was insufficient data provided on the legal firms involved in (non-PPO) large claims to be able to assess the PPO propensity by legal firm.

Motor PPOs – Nature of Injury 4

The vast majority, about 70%, of the PPOs in the survey related to brain injuries and 23% to spinal injuries. Some claimants suffered multiple injuries, and Figure 4.1 represents only the primary injury.



Figure 4.1: Pie chart showing Motor PPOs by Injury

The proportion of Motor PPOs from brain injuries decreased slightly in 2013, but has been generally level since 2010. Whilst there is fluctuation in both brain and spinal injuries of the same nominal amount, in relative terms the proportion of spinal injuries moves more.



Proportion of Motor PPOs by Settlement Year and

Figure 4.2: Proportion of Motor PPOs relating to Brain and Spinal Injuries by settlement year

Figure 4.3 below shows the proportion of PPOs that were due to brain and spinal injuries for different age bands. The graph suggests that the younger the Motor claimant is at the accident date the higher the chance the injury is a brain related one.



Proportion of Injury Type by Claimant age at Accident

Figure 4.3: Proportion of Motor PPOs by injury type split by age of claimant at time of accident

The following graph shows the number of PPOs in each banding to give an indication of credibility.



Number of PPOs by Injury Type and Claimant age at Accident

Figure 4.4: Number of Motor PPOs by injury type split by age of claimant at time of accident

Note that we are now only going to consider brain and spinal injuries and will be ignoring the 7% of other injuries.

Figure 4.5 below suggests that PPOs with claimants suffering from spinal injuries are settled quicker than those involving claimants with brain injuries (4.5 years on average as compared to 6.8 years); in the graph below the peak is sooner and the tail is much less. This could be because spinal injuries are easier and clearer to diagnose more rapidly. However it could also be related to brain injury claimants generally being younger.



Delay To Settlement By Injury Type

Figure 4.5: Distribution of Delay to settlement in years from accident date, split by Injury type

The following graph shows the distributions of reduction in life expectancy compared to unimpaired life expectancy, by injury type. The data suggests that these distributions are significantly different, with claimants suffering from spinal injuries typically experiencing greater reductions. The average future life expectancy at settlement for brain injuries is 47 years and is 35 years for spinal injuries, with the average reduction from unimpaired life expectancy being 16% and 31% respectively. This will be partly due to the majority of young claimants suffering brain injuries, as seen in Figure 4.3, but may not explain the trend fully.



Distribution of Reduction in Life Expectancy by Injury

Figure 4.6: Distribution of Reduction in life expectancy (as percentage of unimpaired), by Injury type

Spinal injury PPOs have a higher average lump sum than brain injury PPOs, at £2.3 million for spinal injuries and £1.6 million for brain injuries (where both figures are in nominal terms and do not

consider inflation over settlement years), which can be seen in the distributions shown in Figure 4.7 below. Note that the graph below also uses the nominal value of the lump sums.



Lump Sum Value By Injury Type

Figure 4.7: Distribution of Lump Sum values, split by Injury type

As with lump sums, the annual PPO amounts for spinal injuries are also typically higher than those for brain injuries, as seen below in Figure 4.8 (with the average annualised PPO amount in nominal terms for spinal injuries at £120,900 compared to £79,100 for brain injuries). Note that in the above figures and the below graph the annualised PPO amounts include payments for all heads of damage, and are the amounts initially paid at settlement (ignoring stepped payments).



Figure 4.8: Distribution of Regular PPO payment amount, split by injury type

5 Motor PPOs – Comparison of Private and Commercial Covers

Private Motor PPO settlements increased in number until 2011. However, the data suggests that the number of private Motor PPOs settled each year levelled off in 2012 and decreased in 2013 (which contributes to the reduction in the total number of large claims settlements in 2013).



Number of PPOs by Settlement year

Figure 5.1: Number of Private and Commercial Motor PPOs by settlement year

The decreasing trend in the number of Private Motor PPOs drives the trend across the whole of the Motor book, as there are far fewer Commercial Motor PPOs. The PPO experience for Commercial vehicle cover is more volatile and unreliable, but also shows a reduction in the number of PPOs settling in 2013.

Driver details

The two graphs in Figures 5.2 and 5.3 below compare the difference between drivers causing accidents that lead to PPOs under private and commercial covers. The driver age profile of commercial PPOs is less skewed to the younger ages than private Motor and has a higher average driver age.

The graphs below only include the PPOs for which the age and gender of the driver was available. These fields were missing in around 35% of private Motor PPOs and around 34% of commercial Motor PPOs.



Private Motor PPOs by Age and Gender of Driver

There are very few female drivers under the commercial Motor PPOs, which may be because there are fewer females that drive commercial vehicles.



Commercial Motor PPOs by Age and Gender of Driver

Figure 5.3: Number of Commercial Motor PPOs split by Gender and Age of driver at accident date

Figure 5.2: Number of Private Motor PPOs split by Gender and Age of driver at accident date

Claimant details

A similar difference can also be seen with age of claimant between private and commercial covers. However this is likely to be due to the correlation between driver age and claimant age, whereby young drivers are more likely to cause accidents that result in PPOs involving younger claimants.



Private Motor PPOs by Age and Gender of Claimant

Figure 5.4: Number of Private Motor PPOs split by Gender and Age of claimant at accident date





Driver and claimant age correlation

The correlation between age of driver and age of claimant is still evident under both private and commercial covers, as shown in Figures 5.6 and 5.7. The relatively fewer number of younger claimants for commercial Motor PPOs needs to be borne in mind when interpreting these graphs.



Age of Driver vs age of Claimant at Accident Date - Private Motor

Figure 5.6: Correlation between age of driver and age of claimant at accident date for Private Motor



Commercial Motor

Age of Driver vs age of Claimant at Accident Date -

Figure 5.7: Correlation between age of driver and age of claimant at accident date for Commercial Motor

Future life expectancy

The difference in claimant age profile between private and commercial covers also means that future life expectancy is significantly shorter for most PPOs arising under commercial covers. Since commercial claimants are older, the average future life expectancy from settlement is approximately 41 years, compared with 44 years for PPOs arising under private cover. The distribution of these future life expectancies is illustrated below in Figure 5.8.



Figure 5.8: Distribution of Future Life Expectancy split by PPOs arising to Private/Commercial covers

6 Motor PPOs – Comp and Non-Comp Comparisons

We have compared the results for comprehensive and non-comprehensive PPOs arising out of private Motor covers. There were 181 PPOs recorded as being comprehensive cover and 59 PPOs as non-comprehensive cover, with the cover type missing for the remaining 58 private Motor PPOs. The number of non-comprehensive PPOs is comparatively small, so the results for non-comprehensive cover will be of reduced credibility.



Number of Private Motor PPOs by Settlement year

Consistent with the movement in the total number of PPOs, the number arising from comprehensive and non-comprehensive covers has decreased in 2013.

Figure 6.2 below suggests that PPOs involving spinal injuries are proportionately less common under non-comprehensive covers than comprehensive covers (and brain injuries more common) however, as stated above, the results are likely to be of reduced credibility due to the small number of non-comprehensive PPOs.



Distribution of PPOs by Injury Type

Figure 6.2: Distribution of Private Motor PPOs by injury type split by cover type

Figure 6.1: Number of Private Motor PPOs split by Settlement year and cover type

From looking at Figure 6.3 below, there appear to be proportionally more PPOs relating to young drivers from non-comprehensive covers than from comprehensive covers, this is probably because younger drivers are more likely to have purchased non-comprehensive Motor insurance, potentially due to the price of available cover.



Distribution of PPOs by Driver Age at Accident

Figure 6.3: Distribution of Private Motor PPOs by Driver age at accident date split by cover type

A similar difference can also be seen with age of claimant at accident date, with a higher proportion of teenage claimants under non-comprehensive cover as shown in Figure 6.4 below. This is likely to be due to the correlation between driver age and claimant age, particularly driven by teenagers who tend to ride in cars together.



Distribution of PPOs by Claimant Age at Accident

Figure 6.4: Distribution of Private Motor PPOs by Claimant age at accident date split by cover type

The difference in claimant age profile also means that future life expectancy from settlement tends to be longer for PPOs arising under non-comprehensive cover rather than comprehensive cover. This is shown in Figure 6.5 below.



Distribution of PPOs by Life Expectancy at Settlement

Figure 6.5: Distribution of Private Motor PPOs by Future Life expectancy from settlement date split by cover type

The following two graphs in Figures 6.6 and 6.7, show the distribution of private Motor PPOs by age of claimant at date of accident by gender, for PPOs arising from comprehensive and non-comprehensive covers respectively.

The peak for age group 15-19 seen in both graphs shows more differentiation between males and females for PPOs arising from non-comprehensive cover (in Figure 6.7), but this may be due to the small sample size. It may also be driven by more males driving at older ages, due to generational gender inequalities, resulting in more third party female passenger claims where the driver is of advancing age.



Figure 6.6: Distribution of Private Motor Comprehensive Cover PPOs by claimant age at accident split by gender



Figure 6.7: Distribution of Private Motor Non-Comprehensive Cover PPOs by claimant age at accident split by gender

7 Liability PPOs

There were 46 Liability PPOs in the survey, from 9 insurers (as not all of the contributors offer Liability insurance).

It is possible that the existence of indemnity limits on Employers and public Liability covers is impacting PPOs settled under Liability covers, as discussed in the PPO propensity section (Section2). These limits are usually applied to nominal claim amounts in the UK, hence would be exhausted more quickly than a lump sum would be used up in many circumstances. Figure 7.1 below shows the number of Liability PPOs settled each year since 2005.



Number of Liability PPOs by Settlement Year

Figure 7.1: Number of Liability PPOs by settlement year

The pattern of settlement of Liability PPOs is broadly similar to that of the Motor PPOs, in that the number of PPOs settled each year since 2009 has been fairly level and reduced in 2013. The smaller sample size will almost certainly account for some additional random noise in the numbers.

All of the Liability PPOs in the survey fall into one of the two cover types in Figure 7.2, with Employers' Liability accounting for about two thirds of the total Liability PPOs.



Liability Cover Type

Figure 7.2: Split of Cover type between Employers' Liability and Public Liability

All but two of the Liability PPOs are indexed to ASHE 6115 (care workers) indexation. One is linked to RPI and the other is linked to Indemnity Cost of Care.

As seen below, in Figure 7.3, the 80th percentile has been the most popular for PPOs arising under Liability covers since 2009 and 100% of all PPOs settled in 2012 onwards are indexed to it. (Note that settlement year 2008 comprises only of 2 PPOs).

Figure 7.3 only considers the primary heads of damage for the Liability PPOs. However, only two Liability PPOs have a second head of damage, both of which are indexed to ASHE 6115 (one at the 80th percentile and the other at the 90th percentile.)



ASHE Percentiles for Liability PPOs by Settlement Year

Figure 7.3: Distribution of ASHE percentiles used for Liability PPOs

Spinal injuries appear to be significantly more common under Liability coverage, as shown in Figure 7.4. The nature and cause of accidents under Motor and Liability covers are likely to be very different, with those under Liability cover more likely to be accidents such as trips and falls, as opposed to high speed crashes that would be more common under Motor insurance.



Distribution by Injury Type

Figure 7.4: Distribution of Motor and Liability PPOs by Injury Type

Claimant details - Employers' Liability and Public Liability

As shown in Figures 7.5 and 7.6 below, nearly all claimants are male.

There appears to be no particular trend in the age of claimant, though virtually all claimants under Employers' Liability policies are of working age, as would be expected (we note that the data included one claimant in the 5-9 year old bracket).





Figure 7.5: Distribution of Employers' Liability PPOs by age of claimant at accident date



Age of Claimant at Accident Date - Public Liability

Figure 7.6: Distribution of Public Liability PPOs by age of claimant at accident date

Claimant details - Motor and Liability comparison

Figure 7.7 below shows that PPO claimants arising under Liability covers tend to be significantly older than claimants arising under Motor covers.



Figure 7.7: Distribution of Motor & Liability PPOs by age of claimant at accident date

Following on from the claimant age profile, the future life expectancy of claimants from Liability PPOs is significantly shorter than that of Motor PPOs, as shown in Figure 7.8 below. However, this is not unexpected, due to the nature of Employers' Liability insurance.



Figure 7.8: Distribution of Motor & Liability PPOs by future life expectancy from date of settlement

PPO details - Motor and Liability comparison

There is some evidence in Figure 7.9 that Liability PPOs may settle quicker than Motor PPOs, though due to the small sample size any attempt to use this statistic should be treated with extreme caution. There are fewer minors under Liability cover and we know that minors can have longer delays to settlement as decisions are often delayed until the claimant has reached the age of maturity. This would imply that we would expect to see fewer claims in the tail of the distribution for Liability covers. In addition, we saw in Section 4 that spinal injuries may settle quicker than brain injuries and there are proportionately more spinal injuries under Liability cover than Motor cover.



Distribution by Years to Settlement

from accident date

Figure 7.10 shows that Liability PPOs appear to have a lower lump sum associated with them than Motor PPOs do. This is likely to be due, at least in part, to the higher average age of claimants under Liability covers, thus meaning wage compensation, which is often awarded within the lump sum rather than the periodic payments, would be paid for fewer years. In addition, large claims under Employers' Liability covers tend to arise from manual and semi-skilled workers who may have lower than average wages. The previously mentioned lower PPO propensity at higher claim values will also be contributing to a lower average lump sum value, as there will be fewer large PPOs, which would be expected to have a higher lump sum amount. Note that the lump sums in Figure 7.10 are nominal amounts and have not been indexed by settlement year.



Figure 7.10: Distribution of Motor & Liability PPOs by lump sum value

Figure 7.11 below shows that the distribution of PPO amounts appears to be similar between Liability and Motor PPOs. The initial payments correspond to the sum across all heads of damage, and are the amounts paid initially following settlement (ignoring stepped payments).



Distribution by Initial Payment Amount

Figure 7.11: Distribution of Motor & Liability PPOs by regular PPO payment amount at settlement date

8 Longevity

While we include the results here, we wish to stress that caution should be placed on the numbers as they are from a very small sample, and materially less than a life insurer would look to use to assess mortality. Also, by construction, we will not see people living much longer than the expectations for a very long time. Hence there is an inherent bias, which is more likely to overstate mortality than understate mortality.

8.1 Number of Deaths in Survey

The survey shows that there have been 18 PPO claimant deaths; 12 male and 6 female, in the period from 2006 to 2013. Figures 8.1 and 8.2 below show the number of deaths by age group for both male and female claimants. The figures also show a graph of initial exposure, which is a measure of the total number of years of exposure for PPOs in the survey. The initial exposure has been taken from the settlement date of the PPO, as (by nature of the survey) we will only receive data for claimants who survive to settlement of the claim (and do not have information on claimants who die before a settlement). Table 8.1 shows the information in tabular format.







Figure 8.2: Number of female PPOs in the survey and number of female deaths in the survey

For a third of these PPO claimants, the life expectancy at time of settlement was not recorded. For the twelve cases where life expectancy was recorded, the life expectancies at the time of settlement cover a wide range of ages from 2 to 32.

There is not enough data to draw any conclusions as to whether there are any patterns as to the deaths that have occurred. However, for anyone interested Table 8.1 below shows how many years since settlement, how many years since the accident, and the settlement delay of claimant deaths in the survey.

Number of years	Years since settlement	Delay to settlement	Years since accident
0	4	0	0
1	2	0	0
2	5	1	0
3	6	5	4
4	1	4	2
5	0	3	1
>5	0	5	11
Total	18	18	18

Table 8.1: Analysis of Deaths in Survey

We undertook an analysis that involved calculating the adjustment to the standard Ogden tables, for individuals in the survey, which would be required to produce the number of deaths actually seen over the period. We have assumed that the ratio of actual to expected death rates fits to a Poisson distribution, parameterised based on the actual exposed to risk and the mortality rates from the Ogden tables. By using this method we were able to produce confidence levels around the median result.

The analysis was subject to a number of significant simplifications and assumptions, for example:

- It was assumed that the cohort was homogeneous in terms of life expectancy. We know that is very unlikely to be the case; some claimants are likely to have a very different prognosis to others as a result of their particular injuries (and lifestyles). For example, those with serious brain injury will be likely to have lower life expectancies, often significantly so, than those with moderate brain injury.
- It was assumed that it was appropriate to apply a single multiplier to the qxs (the probability of an individual aged exactly x years will die within the next year). In fact, we do not know the shape of the mortality curve for these impaired lives; indeed the shape may well be different for different injury types. One particular impact of this may be that it is not appropriate to apply the same multiplier as derived from observing the data at this relatively early stage of the experience to future mortality rates. The reason being that, for these kinds of injuries, mortality (relative to unimpaired mortality rates) is often higher in the early years after the accident.

In addition, the analysis was conducted on a very small sample of claims over a short time period (2006 to 2013), and as such cannot be considered to be particularly credible hence **there is considerable uncertainty surrounding the results** – one additional or one fewer fatality would have a large impact on these figures. Normally pension funds would have much greater sample sizes and as a consequence have significantly narrower confidence intervals.

Table 8.2 below shows the output of the analysis. The median result suggests that the mortality rate for male PPO claimants is 3.7 times that of the general population and 4.1 times for females. This compares to 3.3 times and 4.4 times for males and females respectively in last year's survey (which included MIB claims, unlike this year's). The model has output confidence intervals around these figures, although it should be noted that **we would expect the confidence intervals to be even broader than that shown below** due to elements of model error as described above. However the results do indicate that PPO claimants are likely to have a higher mortality rate than the general population as defined by Ogden table mortality rates.

Percentiles	Male	Female
5th	592%	799%
25th	447%	538%
50th	368%	408%
75th	303%	310%
90th	254%	242%
95th	229%	209%

Table 8.2: Median and percentile values for the required adjustments to the Ogden tables

Figure 8.3 below plots the actual number of deaths by age band against those that would have been expected for the survey sample using unimpaired mortality rates based on the Ogden 7 tables. In total there have been 18 actuals deaths, against an expected number of 4.7 deaths, representing a multiplier of 3.8 times (for males and females combined).



Actual number of deaths against expected (unimpaired lives)

Figure 8.3: Actual number of deaths against expected (unimpaired lives)

We would encourage readers to place a limited degree of reliance on these estimates and to reference other indicators and data sources to support any assumptions they are using for their own purposes. To reiterate; we would advise readers to treat these results with caution due to:

- The small sample size
- The simplifying assumptions which have been made in the model (homogeneity of underlying mortality in the cohort and the appropriateness of a single multiplier)

The mortality experience only being considered for those individuals who survive beyond the period it takes for their PPO claim to settle

8.2 Comparison to Mortality Rates Assumed by Insurers in the Survey

By assuming the results of the mortality curve for impaired lives are the same as that in the Ogden tables, we have converted the impaired life expectancies provided by insurers in the survey to be expressed as a mortality multiplier. A value of 100% is representative of life expectancy equal to an unimpaired life (according to the Ogden tables).

Table 8.3 below shows the mortality multipliers for both male and female claimants. The median assumption in the market for males is that the impaired mortality rate is 3.3 times the unimpaired rate, for females it is 2.8 times.

Percentiles	Male	Female
5th	2137%	2510%
25th	520%	546%
50th	334%	284%
75th	173%	134%
90th	120%	100%
95th	110%	95%

Table 8.3: Median and percentile values for the impaired life expectancies as a multiplier of unimpaired life expectancies

Figure 8.4 below shows the distribution of these multipliers, it is interesting to note how skewed this distribution is in terms of how long the tail is; for example over 5% of female PPO claimants have assumed mortality rates of more than 22 times the unimpaired rate. This serves to further illustrate the point that PPO claimants are not a homogeneous group in terms of mortality.



Figure 8.4: Distribution of mortality multipliers split by gender.

Table 8.4 below demonstrates how the mortality multipliers would translate to the percentage reduction in life expectancy measure for sample male and female lives aged 20, 40, and 60 in 2010.

		Male			Female	
	Age		Age			
Multiplier	20	40	60	20	40	60
200%	13%	17%	25%	11%	15%	22%
300%	20%	27%	39%	17%	24%	34%
400%	26%	34%	48%	22%	30%	42%
500%	30%	40%	54%	25%	35%	48%
750%	38%	49%	65%	32%	43%	59%
1000%	43%	55%	71%	37%	49%	66%
1500%	51%	63%	79%	44%	57%	74%
2000%	56%	69%	83%	48%	63%	79%

Table 8.4: Reduction in life expectancy to lives aged 20, 40 and 60 implied by the mortality multiplier

The results from the mortality analysis can also be expressed in terms of future life expectancy (in years). The purple dots on the graph below show the Ogden 7 unimpaired life expectancy for a 34 year old male and female (52.0 years for a male and 55.6 years for a female). We then show the 5th to 25th, 25th to 50th, 50th to 75th, and 75th to 95th percentiles of (a) the experience analysis (ie based on analysis of the number of deaths in the survey) which applies the mortality multipliers in Table 8.2 to a 34 year-old, and is shown below in navy blue, and (b) insurer assumptions of life expectancy which applies the mortality multipliers given in Table 8.3 to a 34 year-old, and is shown below in aqua.



Figure 8.5: Comparison of results from Mortality analysis based on (a) mortality experience and (b) insurer assumptions of future life expectancy

This graph shows the much larger ranges of values around the insurer assumptions of life expectancy in the market compared to the analysis. This is to be expected due to the lack of homogeneity in the underlying mortality of PPO claimants and also the inconsistent approaches taken to estimating the mortality on a case by case basis. It is also worth reiterating that our analysis assumes it is appropriate to apply a single multiplier to the qxs. However it is not unreasonable to presume that for brain and spinal injuries, mortality will be higher in the early years after the injury has occurred. Consequently, as the analysis in most cases only covers an early stage of development since the accidents occurred, these results may be overstated. However, there is an average delay before settlement for these claims of six years, which would mitigate this effect.

An additional consideration is the extent to which medical enhancements may cause step changes in the longevity of claimants. Stem cell research is just one technique where progress is being made towards restoring spinal function. Widespread success of these treatments would cause a significant increase in reserves and ultimate payments, and all cedants would be correlated.

There are also general increases in life expectancy, such as better treatments for cancer etc. These have traditionally been underestimated, and while mortality tables exist in the UK which include mortality improvements, the level of improvement included should be considered with historical increases to judge possible appropriateness. What is uncertain is how much court experts will consider future longevity trends in their assessments.

8.3 Difference in Assumed Life Expectancy by Insurer

It appears that estimation of life expectancy may not be consistent from insurer to insurer. Figure 8.6 below shows the range in the different cumulative distribution of the percentage reduction in life expectancy plotted for each insurer (the smallest insurers have been excluded). It can be seen that there are significant differences in the life expectancy distributions from insurer to insurer. At least some of this may be explained by different mixes of PPO claim types, but it appears that different approaches to the estimation of life expectancy may be taken by different insurers.

The percentage reduction in life expectancy is defined as the reduction in the claimant's life expectancy as at the time of settlement (in years, compared to an unimpaired life expectancy according to the Ogden tables) as a proportion of unimpaired life expectancy as at the time of settlement (according to the Ogden tables).

Some of the observed difference could be explained by differences in the nature of the claimants to each insurer. As described above, individual claimants exhibit large differences in their impairment. Due to the relatively small sample size of PPO claims, idiosyncratic impacts could cause significant differences to be observed across insurers.

In particular, brain and spinal injuries have very different survival prospects, with Section 11 showing that claimants with a brain injury are expected to live longer on average than a claimant with a spinal injury.



Figure 8.6: Range of difference in cumulative distribution of % reduction in life expectancy by insurer

9 Reserves

This section considers the gross value of the reserves in respect of the outstanding periodical payment liabilities on settled PPO claims.

In order to consider the size of reserves on a consistent basis, we have estimated total PPO costs and reserve values for each of the Motor PPOs in the survey on a cashflow basis, using the same methodology and assumptions for all claims (including stochastic mortality). However, the parameters used (such as life expectancy from settlement) were taken from individual company estimates. We have calculated these estimates using different discount rate assumptions, but always discounted back to a valuation date of 31 December 2013.

These estimates will not be perfect in that some elements affecting claims size, such as variation orders and indemnity guarantees, will not have been captured. However, details of stepped payments have been incorporated.

9.1 Measure of PPOs as a proportion of UK Motor reserves

We took our estimates of PPO reserves as at 31 December 2013 and compared them to the reserves held as indicated by the 2013 FSA returns. We calculated the following two measures which are shown in Figure 9.1:



To estimate the PPO IBNR component in measure 'b', we used the assumption that the ultimate number of PPOs (i.e. the number including IBNR PPOs) is around between 2 and 4 times the number of PPOs actually currently settled. This benchmark was presented at the reserving seminar by the Third Party Working Party (TPWP) and PPO Working Party (PPOWP) in November 2011, based on relatively crude analysis of private Car comprehensive claims frequencies for claims above £1 million (in 2011 terms) from TPWP research, and PPO propensity rates from the PPOWP survey. However it should be noted that this benchmark will reduce over time, as the number of settled PPOs increases. In particular, this benchmarked could be considered to now be out of date and over-estimating the proportion of IBNR PPOs.

These ratios only used results for the companies that both supplied data to the PPO survey and were in the FSA returns.

Given the approximations and assumptions inherent in the analysis, the following results are intended to only give a broad indication of the current position, and should be treated with caution.

The dashed line in Figure 9.1 below shows the settled PPO reserves as a proportion of the outstanding reserves from the FSA returns (measure 'a'). The bars indicate the range of results for the measure including IBNR reserves (measure 'b'); the bottom of the range corresponds to 2 times the number of PPOs actually currently settled as per above and the top of the range corresponds to 4 times the above. The results are repeated by valuing the PPO reserves for different real discount rates, which are shown on the x-axis.



Figure 9.1: PPO reserves as a Proportion of Outstanding reserves from the FSA Returns

The results suggest that PPOs already in payment may currently make up somewhere between 7% and 19% of UK Motor case estimates, depending on the choice of real discount rate. When IBNR PPOs are taken into account (i.e. claims that have already occurred that will become PPOs in the future) this figure could rise to somewhere between a range of 11% to 29% (assuming a lower IBNR propensity) and a range of 23% to 58% (assuming a higher IBNR propensity) of UK Motor reserves as at the end of 2013, depending on the real discount rate assumed. However, it is important to note the sensitivity of these projections to the assumption of the number of IBNR PPOs.

9.2 Distribution of Reserve Size

The following graph shows the distribution of our estimate of individual PPO claim reserve size for different real discount rate assumptions.



Distribution of PPO reserves

What is not immediately obvious from this graph is the size of the impact that changing the real discount rate assumption has on the estimate of the PPO reserves.

Table 9.1 below shows the effect of varying the real discount rate in comparison to using a real discount rate of 2.5% (which is consistent with the current real discount rate used in determining Ogden lump sums, but a different valuation methodology has been used to calculating the Ogden equivalent) for all the settled PPOs within the survey. The results are presented in the form of a "Reserve Multiplier", which is the ratio of the total PPO reserves valued at the specified real discount rate relative to the same figure using a 2.5% real discount rate.

Choosing a real discount rate of 0% increases the PPO reserve estimate by 66% compared to using a real discount rate of 2.5%. Table 9.1 below shows the difference in the total reserves (for all PPOs in the survey) calculated at each real discount rate.

Real Discount Rate	Reserve Multiplier compared to 2.5% real
	discount rate
-2.0%	2.80
-1.0%	2.12
0.0%	1.66
1.0%	1.34
2.0%	1.11
2.5%	1.00

 Table 9.1: Effect of real discount rates on PPO reserves compared to the same estimate using a

 2.5% real discount rate for all PPOs

Figure 9.2: Distribution of PPO Reserve Amounts for different real discount rate assumptions

Figure 9.3 below shows this information in the form of a graph.



Size of PPO Reserves at different Real Discount Rates

Figure 9.3: PPO reserves for settled PPOs in the survey using different real discount rates

The effect of the discount rate on the reserve will depend on how long the PPO has been in payment. The average effect of a change in the real discount rate on the total from ground up (FGU) cost of a PPO claim is shown in Table 9.2 below.

Choosing a real discount rate of 0% increases the PPO Total FGU Cost estimate by 38% compared to using a real discount rate of 2.5%.

Peal Discount	PPO Total Cost
Rate	Multiplier compared
	to 2.5% real discount
-2.0%	2.02
-1.0%	1.64
0.0%	1.38
1.0%	1.19
2.0%	1.06
2.5%	1.00

Table 9.2: Effect of real discount rates on PPO total cost (from ground up) compared to the sameestimate using a 2.5% real discount rate

9.3 Comparison of PPO total costs to Ogden equivalent estimates

Figures 9.4 and 9.5 below show a comparison of the FGU PPO costs (estimated at real discount rates of 0% and 2% respectively) against the estimated FGU costs calculated as if they were to settle as an Ogden lump sum (under a 2.5% Ogden real discount rate). The Ogden costs were provided by contributors. The distribution of points demonstrates the variety in the valuation of PPO costs and/or the equivalent Ogden values.



Figure 9.4: Comparison of PPO FGU cost estimate using a real discount rate of 0% against Ogden Value



Figure 9.5: Comparison of PPO FGU cost estimate using a real discount rate of 2% against Ogden Value

9.4 Comparison to reserves held by the insurer

Figures 9.6 and 9.7 below show a comparison of the reserves (estimated at real discount rates of 0% and 2%) against the reserves held by the insurer, as stated in the information provided by all contributors to the survey. They show a clear positive correlation between the reserves held and our estimates of the reserves.



Reserve held by insurer compared to common methodology valuation using a real discount rate of 0%

Figure 9.6: Comparison of Reserve estimate using a real discount rate of 0% against reserve held by insurer



Reserve held by insurer compared to common methodology valuation using a real discount rate of 2%

Figure 9.7: Comparison of Reserve estimate using a real discount rate of 2% against reserve held by insurer

9.5 Distribution of lump sum as a proportion of total PPO discounted claims costs

Figures 9.8 and 9.9 below show the distribution of the size of the lump sum as a proportion of the total PPO claims cost (estimated at real discount rates of 0% and 2%). At a 0% real discount rate, the lump sum tends to make up 30-40% of the total PPO cost.



Distribution of Lump Sum as a Proportion of Total PPO cost at 0% real discount rate

Figure 9.8: Distribution of lump sum as a proportion of Total PPO discounted claim costs, estimated using a real discount rate of 0%



Distribution of Lump Sum as a Proportion of Total PPO cost at 2% real discount rate

Figure 9.9: Distribution of lump sum as a proportion of Total PPO discounted claim costs, estimated using a real discount rate of 2%

9.6 Analysis of total PPO cost against features of the PPO

The calculation of individual estimates of PPO reserves has enabled us to analyse the size of PPOs by various factors, such as PPO amount and life expectancy. The results of these analyses are shown below.

Figure 9.10 below shows the distribution of reserves estimated at a discount rate of 1% split by injury type. The distribution appears to be fairly consistent across injury types, noting that there are only 105 spinal injuries compared with 301 brain injuries. It is worth noting that the average spinal annual payment is larger than annual payments in respect of brain injuries, and this would drive more very large claims (> £9m)



Distribution of Reserve Held by Injury Type

Figure 9.10: Distribution of reserves estimates by injury type using 1% real discount rate

Figure 9.11 below shows the distribution of reserves estimated for Motor PPOs at a discount rate of 1% split by cover type, i.e. private or commercial Motor. Under each cover type the distributions have a similar shape, however it should be noted there are only 99 commercial PPOs compared to 298 private PPOs.



Figure 9.11: Distribution of reserves estimates by cover type using 1% real discount rate IFoA PPO Working Party, GIRO 2014 Report Pag

Scatter Plots of reserve estimate against various key factors 9.7

This section analyses the relationship between the reserve amounts estimated at a real discount rate of 0% with various factors including life expectancy and annual PPO amount. The following figures suggest trends, however analysing each factor individually does not tell the full story as it is a combination of all the factors together that influence the reserve amount. For example, two PPOs may have similar reserves estimated at a 0% real discount rate, although one may be for a young claimant who has been awarded a PPO with relatively small annual payments, whereas the other may be a PPO for an older claimant with a larger annual PPO payment.

Figure 9.12 below shows the relationship between the reserves estimated at a real discount rate of 0% and the life expectancy at settlement date.



Figure 9.12: Estimate of Reserves using a real discount rate of 0% against future life expectancy at settlement date

Figure 9.13 below shows the relationship between the reserves estimated at a real discount rate of 0% against the age of claimants as at the settlement date.



Figure 9.13: Estimate of Reserves using a real discount rate of 0% against age of claimant at settlement date
Figure 9.14 below shows the reserves estimated at a real discount rate of 0% against the initial annual PPO amount.



Figure 9.14: Estimate of Reserves using a real discount rate of 0% against annual PPO

payment amount

Figure 9.15 below shows the relationship between the reserves estimated at a real discount rate of 0% and the lump sum value.



Estimate of Reserves against Lump Sum Amount

Figure 9.15: Estimate of Reserves using a real discount rate of 0% against lump sum value

Figure 9.16 below shows the reserves estimated at a real discount rate of 0% against the initial annual PPO payment amount, split by whether the PPO involves stepped payments or not. There are 137 PPOs recorded as having a stepped payment and 304 which don't.

As expected the estimate of reserves appears to be larger for PPOs with stepped payments compared to PPOs with a similar initial annual payment amount that do not involve stepped payments. There seem to be few stepped payments with very high annual initial periodic payments, but the PPO with the largest annual payment has steps.



Figure 9.16: Estimate of Reserves using a real discount rate of 0% against annual PPO payment amount, split by stepped/non-stepped PPOs

Figure 9.17 below shows the relationship between the reserves estimated at a real discount rate of 0% against the delay to settlement. Note that a nil delay to settlement here indicates that the date of accident was not completed or was unknown.



Estimate of Reserves against Delay to Settlement

Figure 9.17: Estimate of Reserves using a real discount rate of 0% against delay to settlement

In addition to the points shown in Figure 9.17, there was one Liability PPO claimant where the delay to settlement was recorded as being 49 years.

Correlations observed will change depending on the real discount rate assumed in the estimation of the PPO reserve. To demonstrate, this is shown in Figures 9.18 to 9.20 below by comparing the trend lines on the scatter plots of PPO amount against individual reserve estimates on a -2%, 0% and 2% real discount rate basis respectively.



Figure 9.18: Estimate of Reserves vs Annual PPO Payment - using a real discount rate of -2%







Figure 9.20: Estimate of Reserves vs Annual PPO Payment - using a real discount rate of 2%

10 Qualitative Survey

During the summer of 2014, we conducted one-hour telephone interviews with senior actuaries from 15 insurers and 3 reinsurers to ask them a number of questions regarding their exposure and approach to PPOs. Very occasionally respondents did not answer some questions, either through choice or more commonly as the interviewee did not know the answer.

Different views and approaches are still apparent among insurers and reinsurers, suggesting that diversity remains a key theme from last year's survey.

10.1 Survey use

Only two insurers surveyed did not explicitly use the results of the survey. Almost every insurer that did use the survey considered the PPO propensity and many looked at the average profile of a PPO. Other uses given were for identifying best practice methodology and seeing how their company's experience compared to the rest of the market.

In terms of further content that insurers would like to see in the survey paper, many highlighted that impaired mortality experience was an area they were keen to explore as much as possible.

The majority of survey respondents were keen to implement the PPO Working Party's recommended Bodily Injury and Care Regime classifications, with a significant number having agreed to implement it for PPOs. Companies were keen to implement it also for both large claims and historical claims, but expressed doubts over the resource constraints. However, some stated that if the Working Party could produce market statistics based on this classification it would increase the business case to invest the appropriate time and resource in doing so. Obviously in order to facilitate the production of these statistics in the short term, a significant number of companies would be required to get the ball rolling and use the classification for historical PPOs and ideally large claims also (to derive corresponding propensity figures).

10.2 Level of concern

We asked how concerned the organisations are about PPOs on a scale of 1 to 5 with 5 being the most concerned. They were then asked to say how they would have answered if they had been asked the same question a year ago. Figure 5.1 shows the responses, with the size of the bubble representing the number of insurers that gave that response.



Figure 10.1: Insurers: How concerned are you about PPOs, a) this year, b) last year: Scale of 1 to 5, 5 most concerned

The majority of insurers' concern levels had not changed, often citing that not much had changed within the year. A few had reduced their concerns as a result of becoming more comfortable with PPOs, despite in some cases an increasing number settling because they now have appropriate approaches in place to deal with them. The couple of cases in which concerns had increased were related to the reinsurance coverage they had or were expecting to have in the future in terms of capitalisation clauses.

A significant reduction in concerns could have been a result of falling PPO propensity, or alternatively a trend of increasing concerns could have suggested a cause for the reduced PPO propensity, but neither of these are apparent.

10.3 Impact of Solvency II

When asked how much Solvency II impacts the company's approach to PPOs, most responded that it didn't, with only four suggesting ways in which it had had any influence.

When asked whether companies were considering the use of the matching adjustment for PPOs there was a mixed response. Some people hadn't heard of it at the time, whereas at least one company had submitted something to the PRA. A large number were adopting a "wait and see" approach, however the majority said that they had considered the matching adjustment, but were not intending to use it at this point. Some were considering using it further down the line when PPO liabilities and the impact of discounting with a risk-free rate was more material, but others were expressing that it would be unlikely for them to implement at any point due to restrictions on investment freedom, or the effort required to demonstrate qualification of the matching adjustment. Some companies thought that the mismatch risk would be too large for it to be even possible to meet the requirements.

10.4 Investment Strategy

Figure 10.2 below shows that only a third of insurers are considering the longer term nature of these liabilities within their investment strategy. Only five insurers said that they had specifically changed their investment strategy as a result of PPOs, and two others said they were looking into it.

Of the five insurers who had adapted their investment strategy, three had done so in regard to investing in longer term assets to better match duration, and two had purchased assets to specifically back the PPO liabilities and were held separately. Two insurers had made changes in the past year.



Figure 10.2: Insurers: Has your investment strategy changed as a result of PPOs?

Among the investment issues listed by insurers were finding assets with matching durations to PPOs, the ASHE mismatch and getting large enough returns on investments to keep up with inflation.

10.5 Risk transfer

Eight respondents stated that they would consider some form of risk transfer of PPO liabilities, with a further four which had considered it in the past and were less actively considering opportunities currently. Of those that were not interested, appetite was low due to the materiality of the issue (particularly at a higher group level).

All but two of the insurers surveyed said that a key hurdle in constructing a transaction was a prohibitively high price of such risk transfer solutions. There were also a number of comments regarding the true economic cost of such a transfer. Another common response was that there was not yet an established market - either because there were not enough PPOs to cause the demand or that the market did not provide a solution that matched to ASHE.

During the interview a number of alternative options were proposed. These were:

- Standard reinsurance/retrocession
- Loss Portfolio Transfers/Adverse Development Covers
- Hedging products (some overlap with Investment question)
- Impaired life annuities (or any other means of transferring longevity risk to another market)
- Pooling arrangement
- Government-sponsored market body or statutory funding.

Whilst most companies said they would be interested in considering a number of options, the most popular was a government-sponsored market body or statutory funding, with over half of respondents giving a positive response to this alternative.

10.6 Reinsurance

We asked insurers what the starting retention limit on their excess of loss reinsurance program was. As expected there was a diverse range of responses, though all agreed that they had not changed their retention limit over recent years specifically as a result of PPOs.



What is your starting retention of your reinsurance programme?

Figure 10.3: Insurers: Reinsurance retention limits

Capitalisation clauses

A capitalisation clause allows (or even compels) the reinsurer to settle an individual PPO liability as a lump sum with the insurer, on a pre-agreed bases, once such an award has been made/agreed.

Four out of the 15 insurers surveyed (27%) said that they had a capitalisation clause on their reinsurance contract. All of these only had a capitalisation clause on a proportion of their portfolio, and in some instances its presence varied by layer.

Of those that didn't have a capitalisation clause, the clear majority stated that they were keen to avoid them. There were numerous comments that suggested it was possible to avoid a capitalisation clause, as whilst part of the reinsurance market was pressuring insurers to have them, the traditional non-capitalisation market was still present with sufficient capacity.

Cost of capital

We also asked insurers whether they took the impact of the cost of capital into account when buying reinsurance. 12 insurers said they did, but only half of these did so explicitly for PPOs. Only a couple of companies mentioned considering the capital impact of reinsurance treaties with and without capitalisation clauses.

10.7 Pricing methodology

Half of insurers surveyed stated that they had an explicit loading for PPOs in their pricing. Of those that didn't, some included it implicitly within their large loss loading.

There were comments from some insurers that acknowledged the possibility of adopting a more sophisticated method of applying a loading for PPOs across risks in a non-uniform manner.

10.8 Capital modelling methodology

Capital modelling appeared to be an area which a number of insurers were currently investing in upgrading in order to increase the sophistication of how PPOs were dealt with.

Figure 10.4 below shows the responses to how insurers' capital models allowed for PPOs.



Figure 10.4: Insurers: How do allow for PPOs in your capital models?

Sophistication of capital modelling seemed to have increased since the previous year. The element of the models that was most often modelled stochastically was the mortality (or life expectancy). Whilst it could be questionable to have no model, or not include PPOs explicitly within capital models, the materiality of the capital required can be a consideration.

10.9 Reserving methodology

Settled PPOs

Of the insurers surveyed, none used any stochastic modelling for the purpose of reserving settled PPO claims. Eight of them used a probabilistic method, and five used an annuity certain method.

In terms of the life expectancy assumption, the majority used the medical expert opinions, but there were mixed views on whether this allowed for any longevity improvements over the claimant's lifetime.

Of the eight insurers who took a probabilistic reserving approach, all used either the Ogden 7 tables or a more recently updated publication of the ONS table series which underlies Ogden 7. In order to scale these standard life table to correspond to the claimants' impaired life expectancy, six used an aging adjustment (where they considered the claimant had the mortality experience of someone "y"-years older than them) and two used a multiplicative adjustment (where they assumed that the claimant had a mortality experience "z" times more than the life tables suggest).

Most of the insurers surveyed did not consider the impact of variation orders of indemnity guarantees coming into force within their reserves, and instead the value was based on the current payment schedule. Whereas, a couple of insurers considered the impact of known indemnity guarantees. No insurers took into consideration the likelihood of claims being returned to the court in the instance of a variation order or the likely change to the payment schedule. Given that very few variation orders have been triggered to date, this is unsurprising given the uncertainty of the outcome.

IBNR PPOs - identification

All 15 insurers said that they monitored open large claims and assessed the possibility of them settling as a PPO rather than a traditional large claim settlement. In the majority of cases this was done by the claims team. In one case, the insurer considered the likely number of IBNR PPOs in aggregate (by considering propensity by size band benchmarks) alongside view on individual large claims.

Most but not all insurers monitored the accuracy of past predictions. There were mixed experiences in terms of whether predictions had been too light or too prudent, but there was a common theme of instances in which claims highlighted as being almost certain to settle as a PPO hadn't, and some that hadn't been thought likely to settle as a PPO had.

There were differing approaches to identifying potential PPOs. Some (40%) simply identified claims which they believed had the potential to result in a PPO settlement, whereas the remaining 60% assigned probabilities to the likelihood of this happening.

Four insurers used a formal scoring matrix or mechanism to systematically determine the probability of a claim settling as a PPO based on a number of its features, whereas others used subjective views based on the claim characteristics. Frequent indicators used included injury type (particularly mental capacity), age, annual care cost and the share of contributory negligence, as well as information on how the settlement process was progressing.

IBNR PPOs- reserving

Insurers used a variety of approaches in order to determine the reserves for IBNR (future) PPOs. Some separately considered the pure IBNR in order to appropriately account for claims that are not yet reported as large, but will settle as a PPO eventually. Figure 10.5 shows the approaches taken in regards to claims already identified as large claims.



How do you allow for future (IBNR) PPOs in your reserves?

Figure 10.5 Insurers: How do you allow for future (IBNR) PPOs in your reserves?

Seven insurers used a probability weighting of the claims identified as having potential to settle as a PPO. All except one of these used a method that probability weighted the potential PPO costs derived from a cashflow projection of each identified large claim. The other applied a 30% uplift to general damages to determine the likely cost of the potential PPO.

Two companies made an assumption about which potentials would settle as a PPO and valued these as if they had 100% probability of settling as a PPO. One company assumed all identified potentials would settle as a PPO, with the prudent margin accounting for the pure IBNR element of the PPO reserves.

Two insurers used a frequency severity method, in which the numbers of PPOs were projected by size band. One insurer much more simply included a judgemental loading, and one company said that the allowance for IBNR PPOs was included with the large claims IBNR allowance.

Of the two other methods used, one firm used a stochastic method which sampled from its large claims to determine possible PPOs and calculate the additional cost of these settlements. Another used a variety of methods which include some listed above as well as consideration of PPO propensity by premium.

Some insurers considered pure IBNR PPOs within the methods outlined above. Of the remaining insurers, not all made an allowance for pure IBNR, but those who did tended to use a frequency severity method. Others added a proportional loading to the PPO reserves.

Discounting

We asked insurers whether they discounted their PPO cashflows in determining the reserves, and all of them confirmed that they did. However, the real discount rate (considering both the inflation of payments and discounting in respect of investment returns) varied significantly by insurer, as it has done in the past.

Figure 10.6 below shows the real discount rates used by insurers rounded to the nearest 0.5%. The most commonly used real discount rate was 0%, with six insurers using a slightly positive real discount rate, and three insurers using a slightly negative real discount rate. The range varied from -1.5% to 1%.



Real discount rate used by insurers

Figure 10.6 Insurers: What real discount rate do you use to discount your PPO reserves?

It is not expected that all insurers should be using the same real discount rate, as there will be a need to have different rates in different circumstances, such as in accordance with the firms' investment strategies and returns and the proportion of PPOs linked to different indices.

Most insurers stated that they set their investment discount rate assumption and ASHE inflation assumption explicitly, but then check that the implied net position of the real discount rate is appropriate.

Figure 10.7 below shows the spread of investment return assumptions that contributed towards the real discount rates used by insurers ranging from 3% to 5%.



What investment rate assumption do you

Figure 10.7 Insurers: What investment rate assumption do you use when discounting your PPO reserves?

Insurers referenced use of a rate in line with the yield of their actual assets, expected long term returns, group policies, a risk-free rate, and gilts. Many insurers relied on the assumption that they expected investment returns to be equal to inflation in the long term.

Figure 10.8 below shows the ASHE inflation rate assumptions adopted by insurers varying from 3% to 4.5%. Additionally there was at least one insurer who set their ASHE assumption equal to RPI+1%. Most insurers relied on published research and past ASHE data in order to set this assumption.



What ASHE inflation rate assumption do you

Figure 10.8 Insurers: What ASHE inflation rate assumption do you use when discounting your PPO reserves?

Some insurers applied varying discount and inflation rates to the cashflow payments over the lifetime of the claimants.

There was also discrepancy among insurers as to the date at which reserves in regards to future PPOs should be discounted back to. Half of respondents said that they discounted their IBNR PPOs back to assumed settlement date of the PPO, with the other half discounting back to valuation date.

Uncertainty

Of the 15 insurers surveyed, 12 of these explicitly considered the uncertainty associated with PPOs, and all calculated and communicated this by employing scenario testing.

All considered the impact of flexing the real discount rate in some way and to some degree, and almost all investigated the difference in cost arising from alternative mortality experience (or life expectancy assumptions).

In regards to IBNR PPO allowance, some companies said that they investigated scenarios with different PPO propensities, and a few considered different PPO uplift sizes and alternative settlement dates.

Bad debt

Insurers were asked whether they included a bad debt provision in respect to PPOs. Only two insurers said that they explicitly did, whereas two did partially.

Given the long-term nature of PPOs, which sufficiently increases the credit risk of receiving recoveries from reinsurers in the future, the response was surprisingly low. Whilst, for those with capitalisation clauses on their reinsurance treaties the risk would be reduced, considering that capitalisation clauses only partially covered the surveyed insurers' portfolios, we might have expected more insurers to be considering this significant risk.

Reinsuring within the group and having high reinsurance retentions were reasons given for not considering a PPO bad debt allowance.

11 Summary Statistics

The tables below provide summary statistics taken from all PPOs in the survey, cumulative across all years, for the following characteristics:

- Age of claimant at settlement
- Delay from accident date until settlement date
- Future life expectancy at settlement date
- Initial annual PPO Payment (summed across all heads of damage)
- Lump sum payment

These figures have not been adjusted for inflation and so may under-estimate the size profile of future PPOs. The average settlement date of a PPO contained within the survey is January 2011.

11.1 Motor PPOs

	Mean	Median	Standard Deviation	Skewness	Sample Size
Age at settlement	35.3	29.0	17.5	1.0	393
Delay Until Settlement	6.3	5.6	3.3	1.5	386
Future life expectancy at settlement	43.6	46.2	18.3	-0.4	387
Life Expectancy Reduction	7.3	7.3	14.4	-1.7	382
Annual PPO Payment (£)	86,753	60,000	75,209	1.6	398
Lump Sum (£)	1,740,144	1,600,000	1,083,321	1.6	393

Table 11.1: Summary statistics for Motor PPOs

	Mean	Median	Standard Deviation	Skewness	Sample Size
Age at settlement	34.5	26.2	17.6	1.1	294
Delay Until Settlement	6.2	5.5	3.2	1.7	289
Future life expectancy at settlement	44.3	46.9	17.8	-0.5	290
Life Expectancy Reduction	7.0	7.4	15.4	-2.0	285
Annual PPO Payment (£)	84,289	60,000	76,610	1.8	299
Lump Sum (£)	1.734.640	1.590.000	1.089.541	1.6	296

Table 11.2: Summary statistics for Private Motor PPOs

	Mean	Median	Standard Deviation	Skewness	Sample Size
Age at settlement	37.7	35.1	16.8	0.6	99
Delay Until Settlement	6.7	5.7	3.5	1.1	97
Future life expectancy at settlement	41.4	43.1	19.5	-0.2	97
Life Expectancy Reduction	8.5	7.1	11.0	0.8	97
Annual PPO Payment (£)	94,194	75,000	70,288	0.9	99
Lump Sum (£)	1,756,940	1,600,000	1,063,939	1.7	97

Table 11.3: Summary statistics for Commercial Motor PPOs

	Mean	Median	Standard Deviation	Skewness	Sample Size
Age at settlement	35.2	28.7	18.0	0.9	184
Delay Until Settlement	5.8	5.1	2.9	1.7	184
Future life expectancy at settlement	43.0	44.0	18.2	-0.3	177
Life Expectancy Reduction	7.0	7.3	16.8	-1.4	177
Annual PPO Payment (£)	85,941	55,000	80,118	1.7	184
Lump Sum (£)	1,693,748	1,500,000	1,028,273	0.7	183

Table 11.4: Summary statistics for Private Comprehensive Motor PPOs

	Mean	Median	Standard Deviation	Skewness	Sample Size
Age at settlement	30.4	24.6	15.1	1.7	60
Delay Until Settlement	7.2	6.1	3.4	1.7	60
Future life expectancy at settlement	49.6	54.0	15.8	-1.1	59
Life Expectancy Reduction	5.6	7.9	15.8	-3.6	59
Annual PPO Payment (£)	74,956	66,947	53,451	1.8	60
Lump Sum (£)	1,653,689	1,546,875	789,864	0.5	60

 Table 11.5: Summary statistics for Private Non-Comprehensive Motor PPOs

11.2 Liability PPOs

	Mean	Median	Standard Deviation	Skewness	Sample Size
Age at settlement	46.3	50.5	16.0	-0.4	45
Delay Until Settlement	5.9	4.4	7.0	5.4	44
Future life expectancy at settlement	29.0	26.0	14.6	0.9	45
Life Expectancy Reduction	11.2	8.0	13.0	2.5	45
Annual PPO Payment (£)	75,601	50,000	66,731	1.4	45
Lump Sum (£)	1,281,213	1,167,500	778,667	0.5	44

Table 11.6: Summary statistics for Liability PPOs

11.3 PPOs by injury

	Mean	Median	Standard Deviation	Skewness	Sample Size
Age at settlement	35.0	28.2	17.3	1.0	300
Delay Until Settlement	6.8	5.8	3.4	1.4	298
Future life expectancy at settlement	45.5	48.8	18.4	-0.5	294
Life Expectancy Reduction	6.0	4.7	14.6	-1.5	292
Annual PPO Payment (£)	78,447	55,100	65,298	1.6	302
Lump Sum (£)	1,544,476	1,357,000	1,022,260	1.9	299

Table 11.7: Summary statistics for Brain injury PPOs

	Mean	Median	Standard Deviation	Skewness	Sample Size
Age at settlement	40.0	37.3	17.8	0.3	102
Delay Until Settlement	4.5	4.3	2.0	2.2	102
Future life expectancy at settlement	33.4	34.9	14.8	0.0	102
Life Expectancy Reduction	12.8	11.6	12.9	-1.6	100
Annual PPO Payment (£)	115,550	95,000	90,198	1.1	104
Lump Sum (£)	2,219,546	2,025,000	1,085,408	1.4	101

Table 11.8: Summary statistics for Spinal injury PPOs