Association of British Insurers

RESEARCH BRIEF July 2009

General insurance claims fraud

- **We estimate that undetected general insurance claims fraud totals £1.9 billion a year.**
- **This adds £44 to the annual costs individual policyholders face, on average, each year.**
- **The detection of general insurance fraud has improved significantly over the last five years. Over £730 million worth of fraudulent claims were detected and prevented in 2008. This represents a 30% increase in detection since 2007.**
- **The insurance industry is detecting more of the fraud that is being attempted. Improved data sharing through the Insurance Fraud Bureau and a more focussed approach to detecting fraud across insurers have contributed to this improvement.**
- **The indications are that the recession is having an impact on fraud, but it is too early to say for certain that this is happening.**

The general insurance market

Total net written premiums for general insurance were £33.5 billion in 2008, see Table 1.

Table 1 The size of the general insurance market (2008), net written premiums

£ billions	Motor	Property	Other	Total
Retail	8.1	5.7	7.4	21.2
Commercial	2.7	3.1	6.5	12.3
Total	10.8	8.8	13.9	33.5

Note: 2008 provisional figures.

Source: ABI Statistics.

Recent ABI research (2009a & 2009b)[1] shows that retail general insurance products are widely held. We estimate that home contents insurance is held by 75% of adults, motor insurance by 73% of adults, buildings insurance by 62%, and travel insurance by 35%. Overall, we estimate that 87% of adults hold at least one of these general insurance products.[2] If a broader range of products is considered, including payment protection insurance and mobile phone insurance for example, we estimate that over 90% of adults have at least one general insurance product.

ABI analysis of the ONS Expenditure and Food survey shows that average household expenditure on contents insurance was £165 and buildings insurance £202 in 2007. Average annual expenditure per household on motor insurance was £527 in 2007.

[1] Note that our analysis of the 2007 – the latest date for which the results are available - Expenditure and Food Survey (EFS) data produces very similar results (the proportion of households with motor is 74%, contents 76%, and buildings 64%). See 'Household expenditure on insurance 2007', ABI May 2009 (available to subscribers and ABI members).

[2] Similarly, the 2007 EFS shows that 87% of households hold one or more of the four products covered in that survey (structure, contents, mortgage, MPPI).

Thus, the impact of fraud is felt by many households, across the spectrum of social grades and income levels.

Estimating undetected general insurance claims fraud

Total undetected general insurance claims fraud is estimated at £1.9 billion per annum. This adds around 6% (or £44 a year), on average, to the insurance premiums paid by all policyholders.

The most common and costly form of general insurance claims fraud is opportunistic retail fraud. Opportunistic retail fraud is where individuals exaggerate or inflate genuine claims to increase the value of a payout. In a minority of cases opportunistic fraudsters will fabricate an entire claim, including, for example, deliberately causing damage so as to be able to claim.

Opportunistic fraud in commercial general insurance is similar to opportunistic retail fraud but the policyholders are firms, rather than individuals.

Organised fraud is where criminal gangs work to systematically defraud insurers. An example of organised fraud is where insurable events are staged (such as "cash for crash" traffic accidents) to claim against the insurance policy of an insured party.

In estimating retail and commercial opportunistic general insurance claims fraud, we used a variety of techniques:

- Interviews with:
  - ten insurers accounting for over half the retail and commercial general insurance markets.
  - other bodies (including IFB, CIFAS, and MIB) who have relevant knowledge in this area.
  - several of the major loss adjustors.
- A survey of customers – as part of the ABI's Savings and Protection quarterly survey - asking about attitudes and behaviours in respect of general insurance fraud.
- A review of the relevant literature, including that relating to the relationship between crime and the economy (and by implication the likely impact of the recession).

During our interviews with insurers, we discussed total fraud risk and obtained estimates of that risk. We combined these estimates with estimates obtained from interviews with other organisations, and with members' detected fraud data, to update our 2007 estimate of general insurance claims fraud.[3]

The methodology we used for estimating retail and commercial insurance claims fraud is detailed in Appendix 1B. In summary, we estimated distributions of both retail and commercial undetected opportunistic claims fraud by:

1. Constructing 'undetected fraud risk multipliers' to represent estimated undetected fraud rates as a multiple of detected fraud rates.

[3] See ABI (2007), *'General Insurance Claims Fraud'* which estimates undetected fraud as £1.6 billion.

2. Generating a population of undetected fraud risk multipliers and detected fraudulent claims using the mean and standard deviation of our sample of undetected fraud risk multipliers and detected fraudulent claims.

3. Randomly selecting and combining undetected fraud risk multipliers and detected fraudulent claims volumes to obtain an estimate of total undetected fraudulent claims.

4. Combining the estimated total undetected fraudulent claims with an average undetected fraudulent claim value to obtain an estimate of total undetected fraud.

The steps detailed in points two to four above were repeated 10,000 times to provide distributions of undetected opportunistic retail and commercial insurance claims fraud. This approach was selected to reflect the differences in insurers' ability to detect fraud and in claimant behaviour itself. The large number of repetitions also compensates to an extent for measurement error (in particular of undetected fraud which is, by definition, not measurable) during the estimation process.

Our estimates take into account the early impact of the recession insofar as they are based on data from 2008 (and therefore include the first two quarters of the recession which began in Q3 2008). However, we have not attempted to quantify the impact of the recession separately. Our research also suggests there will be a lag between the beginning of the recession and increases in fraud risk, so our estimates are likely to capture only some of the impact of the early phase of the recession. It is worth noting that we expect the recession to increase the overall level of fraud given the apparent link[4] between unemployment and non-violent crime.

Table 2 summarises our 2006 and our new (2008) estimate of undetected general insurance claims fraud.[5]

Table 2 The value of undetected general insurance claims fraud (£ billions)

Type of fraud	2006	2008	Change
Opportunistic retail fraud	1.0	1.2	+18%
Opportunistic commercial fraud	0.6	0.7	+35%
Total undetected fraud	1.6	1.9	+24%

Note: The £1.9 billion total is our central estimate for 2008. The estimate of opportunistic, retail fraud includes £0.2 billion of organised fraud in 2006 and 2008.

Source: ABI (2007) and ABI (2009) estimates: Opportunistic retail and commercial fraud estimates are based on the research set out in this Research Brief, including interviews with insurers. We have also used IFB (2007) and IFB (2009) estimates of organised fraud.

Table 3 puts 2008 undetected general insurance claims fraud into the context of the size of the general insurance market. We estimate that general insurance claims fraud costs

[4] See the section on the impact of the recession or the literature review in Appendix 1A.

[5] The 2006 estimates of opportunistic retail and commercial fraud are based upon a different methodology – see ABI (2007). However, we have applied the 2008 methodology to the 2006 data and find the resulting estimates to be relatively consistent with those already published (to within £40 million) and are therefore comfortable making comparisons between the two estimates.

the industry the equivalent of 6% (or around £44) of the total premiums (that is, across all general insurance product lines) paid by each policyholder, on average, each year.

Table 3 General insurance claims fraud in context

	Total undetected fraud (£ billion)	Net Written Premiums (£ billions)	Undetected Fraud as % of Net Written Premium
Retail	1.2	21.2	6%
Commercial	0.7	12.3	6%
Total	1.9	33.5	6%

Source: The NWP (2008 provisional figures) and detected fraud figures are from ABI Statistics. Other figures are ABI estimates.

Table 4, which is based on our review of academic literature and publicly available data, puts our estimates of general insurance claims fraud into an international context. Our estimates fall within the upper range of estimates provided.[6]

Table 4 International estimates of general insurance claims fraud

Country	Product line	Estimate	Source
United Kingdom	*Retail*	*7% of claims (by value)*	*ABI (2007)*
Australia	General	10% of claims (by value)	ICA (1994)
United States (Arizona)	General	10% of claims (by volume)	ADI (2009)
United States	General	10% of claims (by volume)	Hoyt (1988)
United Kingdom	*General*	*10% of claims (by value)*	*ABI (2009)*
Canada	General	10–15% of premiums	IBoC (2006)
United States	Motor	11-15% of claims (by value)	IRC (2008)
Germany	Motor	11% of claims (by volume)	Clarke (1990)
United Kingdom	*Retail*	*11% of claims (by volume)*	*ABI (2007)*
United Kingdom	*General*	*13% of claims (by volume)*	*ABI (2009)*
United States	General	15% of claims (by value)	Hoyt (1988)
Spain	Motor	22% of claims (by volume)	Artis et al. (1999)

Note: These studies will cover different phases in the business cycle and use different approaches so provide indicative rather than direct comparisons.

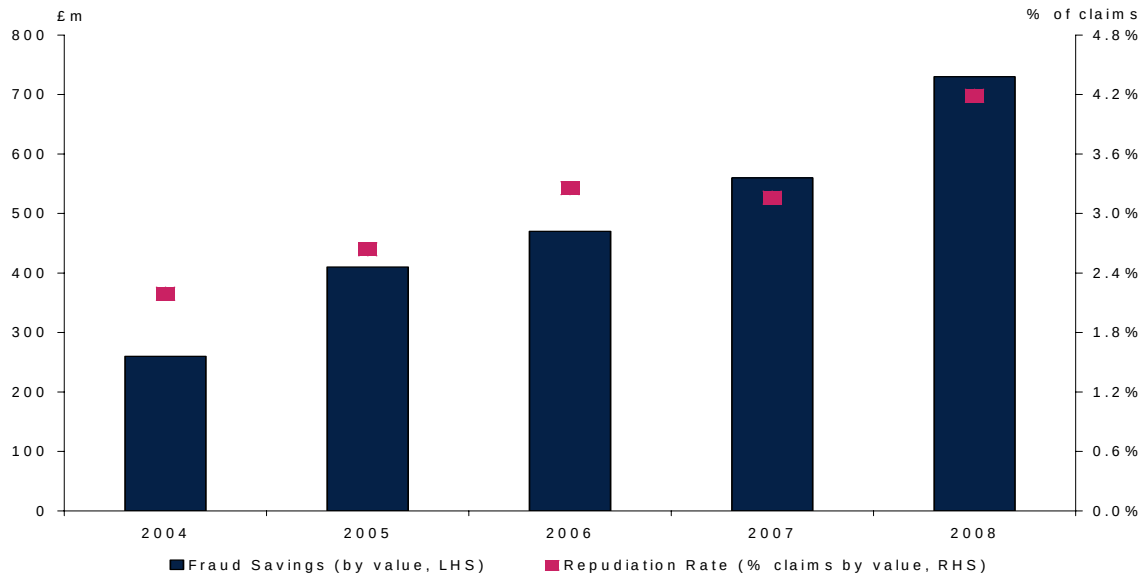
Sources: Various, please see the 'References' section for further details.

Detected general insurance claims fraud

The value of detected general insurance claims fraud (savings) reached £730m in 2008 – see Figure 1 – and has increased by 30% a year on average since 2004. Figure 2 demonstrates a similar movement in the volume of detected general insurance claims fraud (savings). Appendix 1C shows ABI (2009c) estimates of detected general insurance claims fraud (savings) repudiation rates by product line for the past five years.

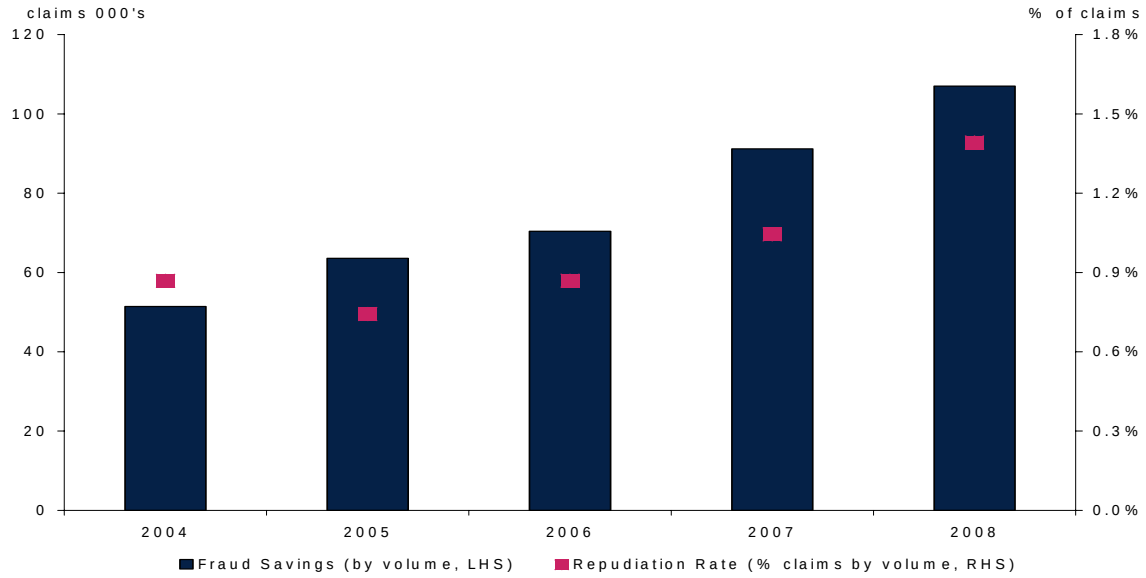
[6] This conclusion considers the Artis et al. (1999) estimate a relative 'outlier'.

Figure 1 – Detected general insurance claims fraud (by value, total savings and repudiation rate)



Source: ABI (2009c).

Figure 2 – Detected general insurance claims fraud (by volume, total savings and repudiation rate)



Source: ABI (2009c).

Interviews with ABI members indicate that the increase in the detection of fraud is due to several reasons, primarily:

- The introduction of dedicated fraud teams. Apart from the focus this gives to detecting fraud, and the boost to detection an increase in resources brings, a dedicated team can also avoid potential conflicts of interest that can arise where

staff charged with detecting fraud also have other objectives (such as meeting claim processing volumes).

- The introduction, and increases in sophistication, of IT-based automatic processes (e.g. rules-based scorecards and predictive analytics) for 'flagging' suspect claims. This was stressed as being significant as more effective processes for identifying potentially fraudulent claims had reduced false-positives, allowing fraud detection resources to be used more efficiently in investigating genuinely suspicious cases.[7]
- The introduction (or increased use) of Conversation Management and Cognitive Interviewing techniques. One example of Conversation Management was where it had been introduced for claims under £1,500 for a six month trial. During that period, 51% of claims (previously it had been 100%) were sent to supply chain management companies for payment. Of the remaining 49%, 27% were 'walk-aways', 13% were referred to fraud investigators and 9% were reduced significantly in terms of quantum before referral to supply chain management companies. Complaints rose from zero, but remained under 1%.
- Better awareness within firms, including in sales and claims teams, of the costs that fraud imposes on insurers and their customers. This had lead to greater vigilance throughout the customer interface.
- The increased use of commercially available databases and software solutions for fraud detection and analysis of policy applications.
- In some cases, the (increased) use of more sophisticated detection techniques such as voice stress analysis.
- A general improvement in the productivity of staff as they become more proficient in the application of various systems improvements.

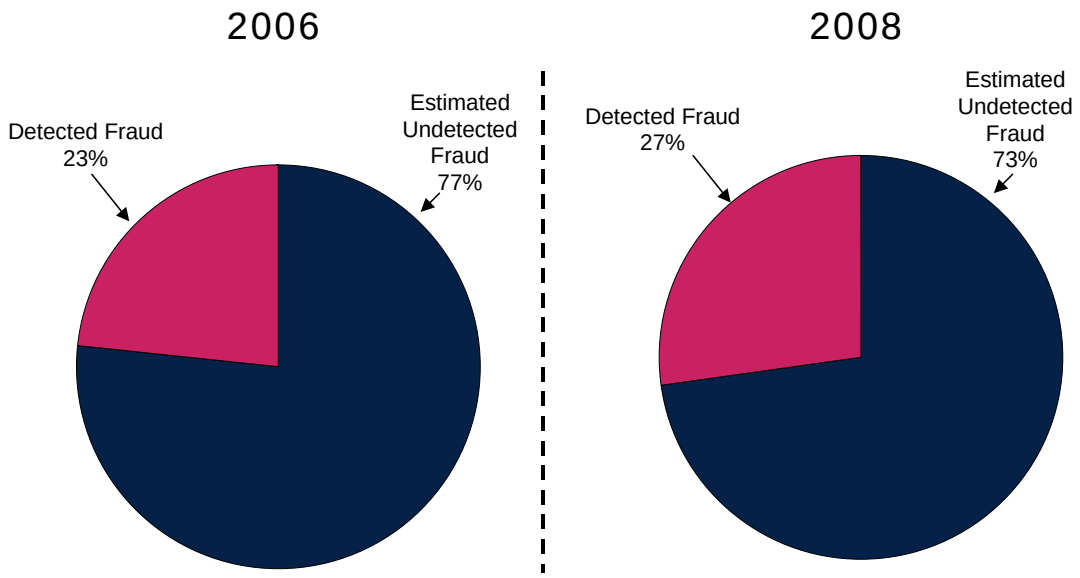
Improving the detection rate is in part a balancing act as false-positives can interfere with dealing efficiently with the claims of honest policy-holders. To prevent that, and all that could entail from giving customers a negative experience during what are often very stressful times, significant effort has been put into ensuring that more effective detection is not at the cost of a less efficient claims process. This has been reflected in the improvement in conversion rates (the proportion of cases that are investigated and a fraud is subsequently proven) that all the insurers we spoke to reported had happened over the last four years.

Related to this, we found that the return on investment in fraud detection had improved over the last four years suggesting that fraud detection was better targeted and more effective. The insurers we spoke to consistently quoted returns on investments in fraud detection as a multiple of high single to low double-digit figures.

This is supported by the findings of our research. We estimate that in 2006, £2.1 billion of fraud was committed and the insurance industry detected £0.5 billion (23%) of this (so £1.6 billion was undetected). In 2008, we estimate that £2.7 billion[8] of fraud was committed and the insurance industry detected £0.7 billion (27%) of this. So between 2006 and 2008, while total fraud increased, the proportion of total fraud that the insurance industry is detecting increased by 16% – see Figure 3.

[7] Another benefit of an improvement in identifying suspect claims was that honest claimants were processed more quickly.
[8] This figure is slightly higher than the aggregate of £1.9 billion in undetected fraud and £0.7 billion in detected fraud due to rounding.

Figure 3 Detected and undetected fraud as a proportion of total fraud



Source: ABI research.

Impact of the recession

Several studies provide evidence of a long-term relationship between non-violent crime and the business cycle. In particular, non-violent crimes tend to increase as unemployment increases.[9] This suggests the recession (and the consequent rise in unemployment) will increase the risk of fraud for insurers. Osborne (1995) finds some evidence of a statistical relationship between crime and economic indicators in the United Kingdom, while Scorcu & Cellini (1996) find evidence of a long run relationship between crime and economic indicators in Italy, notably between theft and unemployment. In addition, Tsushima (2002) finds strong correlations between unemployment and crime rates in Japan and Buonanno & Montolio (2008) also find that youth unemployment is a significant predictor of property crime in Spain.

To date (July 2009), our research finds that there are clear indications that the recession, which began in the third quarter of 2008, is leading to an increase in general insurance fraud. While these indications are clear, they are not conclusive. They include:

- An increase in 'walk-aways' where the claimant drops the claim in response to enquiries from the insurer.
- Significant increases in the proportion of 'suspect' claims and in applications for insurance where underwriting fraud to reduce the level of premiums is suspected.
- An increase in the proportion of claims referred for investigation that are proven to be fraudulent. This is in part due to improved processes for 'flagging' suspect claims. It is also thought this reflects an increase in the level of fraud. Estimates of the increase in fraud – in particular opportunistic fraud – are not available from all the insurers we interviewed but have been put in the range of a 15-25% increase in Q1 2009 compared to Q1 2008.

[9] See Appendix 1A for further details.

- An increase in very amateur attempts at claims fraud indicating that otherwise honest customers are attempting to make fraudulent claims for the first time.
- Interviews with loss adjustors indicating that detected fraud, while on an upward trend anyway, dramatically increased in 2008 suggesting an increase in the underlying level of total fraud. One loss adjustor had detected 41% more fraud in 2008 compared to 2007, another estimates a fraud increase of between 15% and 21%, varying by line of business. However, these estimates are likely to also pick-up on improved flagging of suspect claims for passing to loss adjustors by insurers which would increase the success-rate of loss-adjustors.
- Research by RSA showing that the number of people in Britain who think insurance fraud is acceptable increased dramatically (from 3.6 to 4.6 million people) between March 2008 and January 2009.[10]
- An increase in calls to the IFB's 'Cheatline'. Since August 2006 the monthly volume of calls to the Cheatline has increased five-fold.[11] Over the course of 2008 alone, the volume of calls more than doubled. This increase is in part due to higher public awareness of the Cheatline and the new facility allowing online reporting. It also appears that the public attitude towards fraudsters has hardened: many callers cite the fact that they are motivated to call as they have to pay increased premiums as a result of the activity of fraudsters. Subject to these caveats, the large increase in calls to Cheatline may be indicative of an increase in opportunistic claims fraud.
- CIFAS[12] estimate that there has been a 44% increase in false insurance claims in Q1 2009 compared to Q1 2008.

There are other indicators of behavioural change, not necessarily related to fraud, including an apparent increased likelihood of making small claims. It was felt this could be recession-related as claims that people would not have made in the past were now being made as customers were experiencing – or anticipating – harder times. An alternative explanation suggested was that customers may have a heightened sense of 'entitlement' during a difficult economic period. It was also felt that some of this increase in small claims could be fraud, with fraudsters trying to get in 'under the radar'.

Similarly, both insurers and loss adjustors reported significant increases in accidental damage and loss claims, particularly relating to specified high-value items. Claims on LCD TVs, high-end watches and laptops had increased by as much as 35% between 2007 and 2008. Again, there are possible benign explanations for this.

The consensus from our interviews was that it was too early to tell with certainty whether the recession was yet leading to a change in behaviour as the impacts of the recession were subject to a lag. This lag would be affected by:

- The unemployment rate, which did not start increasing rapidly until the first quarter of 2009. Unemployment is also expected to continue increasing well into 2010 – see, for example, the IMF (2009), OECD (2009) or the Economist (2009).
- The time it takes before households really feel the impact of the recession (through being refused credit, being made redundant, etc).

[10] RSA press release, 2/2/09, 'Britons see insurance fraud as more acceptable during recession'.
[11] The IFB's Cheatline allows anonymous tip-offs to be made to IFB Cheatline staff by telephone or online.
[12] CIFAS press release 27/4/09: 'Fraud trends and recession go hand-in-hand'.

- Even then a further lag was likely to occur while households ran down savings, or redundancy payments.

It was also noted that statistics and other management information that might show a link were themselves also subject to a lag.

Nevertheless, there was enough indication to strongly believe that the recession was having an impact on fraud. 'Desperation fraud' (where insurance fraud is committed by those needing to make ends meet) was one area where the recession was likely to have an impact. 'Lifestyle fraud' (where fraud is committed to maintain aspects of lifestyle – upgrading to the latest laptop or smart phone, for example) was also expected to be affected by the recession. In terms of the latter, there had been significant increases – up to 30% year-on-year according to some insurers (and this is consistent with the estimates of loss adjusters quoted above) – in the number of claims for high-end watches and laptops.

General insurance underwriting fraud

General insurance underwriting fraud is perpetrated by both retail and commercial customers and includes:

- Material deliberate non-disclosure or misrepresentation of relevant facts during the process of obtaining insurance cover.
- Obtaining insurance cover without payment. This can be where the insured relies on the lag between arranging cover and, for example, the credit card payment being voided. (A sub-set of this type of underwriting fraud is where the cover is taken out solely or partly to generate a cash-back or commission with no intention of paying for the product.)
- Broker fraud, where there is a failure on behalf of the intermediary to pass on premiums or initiate the insurance contract.

General insurance underwriting fraud has not received – to date – the same degree of attention as general insurance claims fraud.[13] This is partly because general insurance underwriting fraud is often picked up at the claims stage and is then recorded as claims fraud.

In terms of the costs of underwriting fraud, where a claim is not made, non-disclosure and misrepresentation underwriting fraud typically represents a loss of *potential* premium income. These types of fraud also lead to an increase in risk exposure where more risk is taken on the insurers' books than is reflected in the premiums charged and the resulting claims ratio may be higher than was anticipated.

Obtaining cover without payment and broker fraud represent more direct and – possibly – quantifiable losses. There are also administrative costs associated with obtaining cover without payment. One insurer estimated that each 'cover without payment' case costs around £30 in printing and posting policy documents and follow-up letters.

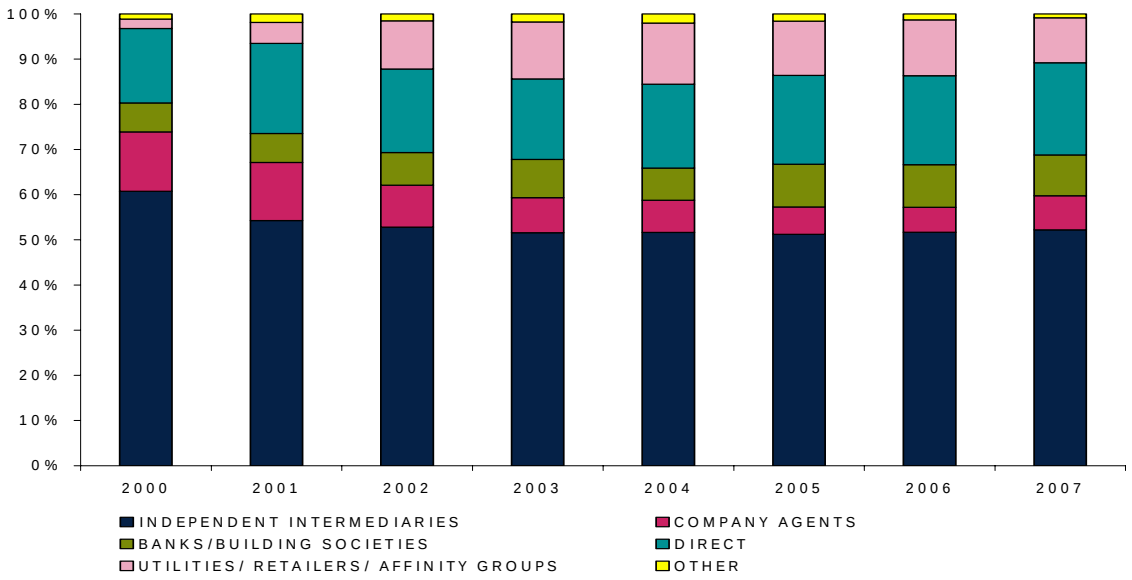
Our interviews with insurers suggest that various improvements in application screening (through the incorporation of claims history or other information sharing services) have

[13] ABI interviews with general insurance members.

reduced the scope for general insurance underwriting fraud. However, this effect has been offset to an extent by trends in distribution. Insurers also told us that while distance-selling channels are typically more cost-effective, an applicant is also more likely to commit underwriting fraud via these channels.

The simplification of application processes in response to competitive pressures (in terms of both cost and providing an appealing service to customers) and a rise in the popularity of standardised 'off-the-shelf' products – for pet and travel insurance in particular – also has implications for underwriting fraud risks. Figure 4 shows the changing role of banks and building societies, and utilities, retailers and affinity groups in the distribution of retail general insurance products.[14] Note also that there is a growing trend of customers using comparison websites when purchasing general insurance.[15]

Figure 4 – Retail General Insurance Business by Distribution Channel



Source: ABI (2008).

Customer attitudes towards fraud

Recent ABI (2009b) research found that roughly one in five general insurance policyholders say they would consider making an exaggerated or completely made-up insurance claim in the future. The ABI results show that a potential fraudster is more likely to:

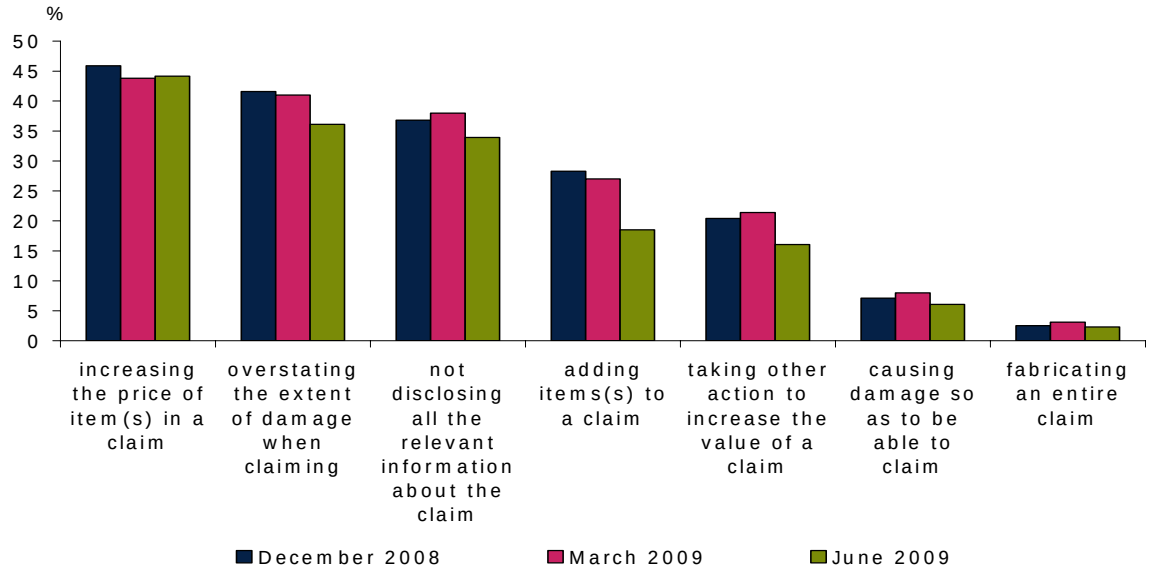
- Be male.
- Be in full-time employment.[16]
- Be between 18 and 34 years old.
- Have a gross household income over £30,000.
- Have non-pension savings and investments worth less than £5,000.

[14] ABI (2008).
[15] See ABI (2008) Data Bulletin: Sources of premium income for general insurance 2007.
[16] This finding appears at first glance to contradict other conclusions about the link between recession and fraud, and rising unemployment and non-violent crime. However, this result is mainly driven by the fact that people in employment are more likely to have (more) insurance contracts than those unemployed. In a recession / period of rising unemployment, previously employed people (who have insurance contracts) become unemployed.

- Have non-mortgage debt of more than £5,000.
- Be living in the North-East or London.

Those who admitted to having made a fraudulent insurance claim in the past had a similar profile. The same ABI research also asked past and current policyholders their views of specific types of fraudulent behaviour. Figure 5 shows the proportion of current and past general insurance policyholders who find certain types of fraudulent behaviour 'borderline' or acceptable things to do.

Figure 5 – 'Borderline' or 'acceptable' things to do…



Note: Sample sizes of 2,782, 2,577 and 3,031 respectively.

Source: ABI (2009a, 2009b, 2009e).

The sensitive nature of this particular line of questioning suggests that the results presented here may represent the lower bound of the 'true' proportion within the broader community.

Next Steps

For industry

Insurers commonly highlight that sharing information is important in the fight against fraud – particularly organised fraud. Insurers already share data on some personal lines fraud via the Insurance Fraud Bureau (IFB), which has had significant success in tackling organised motor insurance fraud. The industry expects similar increases in detection as this model is replicated across other product lines.

There is also a significant number of non-insurance organisations holding, developing and using information on fraud and fraudsters. For example, the National Fraud Authority is establishing a Reporting Centre and Intelligence Bureau to achieve a better co-ordinated and more inclusive counter-fraud community.

Our research suggests that customers are more likely to commit underwriting fraud when they buy insurance via distance-selling channels. Closer liaison between insurers and the relevant intermediaries – comparison websites, for example – may help address this risk.

For researchers

A potential approach for estimating detected and undetected claims fraud would be to identify fraudulent claims *before* they are subject to insurers' standard claims process and then assessing the proportion of these fraudulent claims that are detected during the normal claims process. The balance could be considered a lower-limit measure of undetected fraud. This approach could involve a third-party:

- Extensively reviewing a large random sample of unprocessed claims and identifying suspicious claims.
- Marking / cataloguing the claims in such a way that they can be traced throughout the claims process (and indeed without the claims processors being aware / able to 'see' the relevant identifiers).
- Sending the sample of claims through the claims process.
- Reviewing the proportion that are detected by the insurer's standard claims process.

Our interviews with insurers indicate some support for this approach. Insurers were largely supportive of the exercise in principle. Indeed, some perform regular assessments of their claims processing systems in a similar manner. However, the likely cost of an industry-wide exercise may be high. Some insurers also expressed reservations about the possible impact on claims processing times for their customers.

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Appendix 1A

Literature review

Insurance Fraud

Previous ABI consumer research suggests that around seven to 11% of adults admit to making a fraudulent insurance claim. In ABI (2003), seven percent of adults admitted to making a fraudulent claim during interviews, while later ABI (2007) online research pointed to 11% of adults making a fraudulent claim on retail policies. More recent ABI (2009b) research puts the figure at around nine percent.

These estimates are likely to represent the lower bounds of their 'true' values amongst the broader population. It seems a reasonable assumption that there are probably some adults that do not admit to fraudulent behaviour – even when anonymity is assured.

Turning to consumer attitudes more generally, ABI (2009b) research finds that almost one-in-five adults (19%) would consider making a fraudulent claim in the future, while the Coalition Against Insurance Fraud (2008) also finds that one-in-five US adults think it is acceptable to defraud insurance companies under certain circumstances. This points to a relatively high tolerance towards insurance fraud amongst UK and US households respectively. However, the view is not quite as strong in recent RSA (2009) research, where 10% of respondents saying that it is 'ok' to make a false claim. This result is consistent with CAIF (2008) findings, when US respondents were asked about specific types of fraudulent behaviour – that is, submitting claims for items that aren't lost or damaged, or for personal injuries that didn't occur – only 10% of adults agreed this was acceptable.

There are a variety of international estimates of the cost of fraud, based on varying degrees and methods of investigation. The Insurance Council of Australia (1994) estimates that around 10% of claims by value are fraudulent. Both the Arizona Department for Insurance (2009) and United States Chamber of Commerce (see Hoyt, 1988) state that undetected fraud is around 10% of claims by volume in Arizona and the US respectively. Hoyt (1988) also cites a 'commonly mentioned' estimate of 15% of claims by value for the US. The Insurance Bureau of Canada (2006) estimates the cost of insurance fraud at around 10 to 15% of premiums. The Insurance Research Council (2008) estimates that 11 to 15% of motor bodily injury claims (by value) in the US are fraudulent, while Clarke (1990) reports that 11% (by volume) of German motor claims are fraudulent. Artis et al. (1999) estimate that only 78% of Spanish motor claims are legitimate.

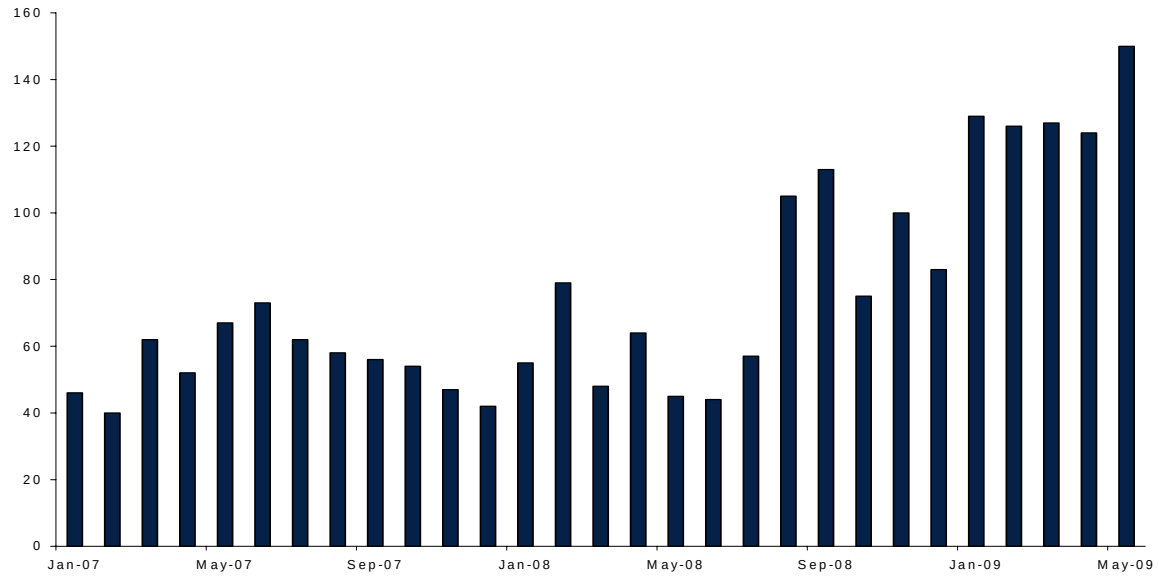
There are a variety of perspectives on the causes of insurance fraud. Work by Becker (1969) and Allingham & Sandmo (1972) explain criminal behaviour as utility maximising behaviour; the expected profit is sufficiently high enough to outweigh the expected value of the consequences of being caught. This leads Tennyson (1997) to conclude that this could account for relatively 'high' rates of insurance fraud. Viaene & Dedene (2004) broadly interpret insurance fraud as the abuse of insurance contracts by the holders of undisclosed information (known more formally as a state of asymmetrical information), such as the true nature or actual occurrence of an event. Tennyson (2008) also describes insurance fraud as an economic response to a unique form of contract – primarily due to insurers' 'promise' to pay a claim.

Hoyt (1988) considers fraudulent behaviour within a utility-maximising framework and suggests that the focus of fraud control should be on reducing the expected utility of fraud – either by lowering the probability of success or reducing the average successful payout. Picard (1996) employs a similar approach, and concludes that a failure to commit resources into investigation leads to a welfare loss to honest policyholders (via higher premiums), which in the extreme case causes the insurance market to fail. Moreno et al. (2006) show that the threat of future premium rises can deter fraud under certain assumptions. And Boyer (2007) finds that investing in fraud prevention will achieve gains if the propensity for potential policyholders to misrepresent the facts is not high.

There have been a number of studies of actual claims data from Massachusetts, US. Derrig et al. (1994) found that investigation of suspicious claims reduced payouts by 18%. Weisburg & Derrig (1995) work also found that claim reductions are common amongst claims with suspected "build-up" (exaggeration). And later Derrig et al. (2006) also noted that negotiation reduced some "build-up" claims – where third-party payments were involved – by 22%. Other international studies include Artis et al. (1997) and Bermudez et al. (2008) who apply formal frameworks to explain fraudulent Spanish motor insurance claims.

An increase in the IFB's (2009) monthly 'Cheatline' call volumes suggests that honest policyholders' are increasingly identifying fraudsters to fraud detection services – see Figure 6. Cookson (2009) also recently reported an increase in 'whistleblower' calls to designated hotlines for some of the world's largest companies.

Figure 6 – Insurance Fraud Bureau monthly 'Cheatline' calls (2007 - Present)



Note: Figures include online contact available from November 2008.

Source: Insurance Fraud Bureau (2009).

Other Financial and Non-violent Crime

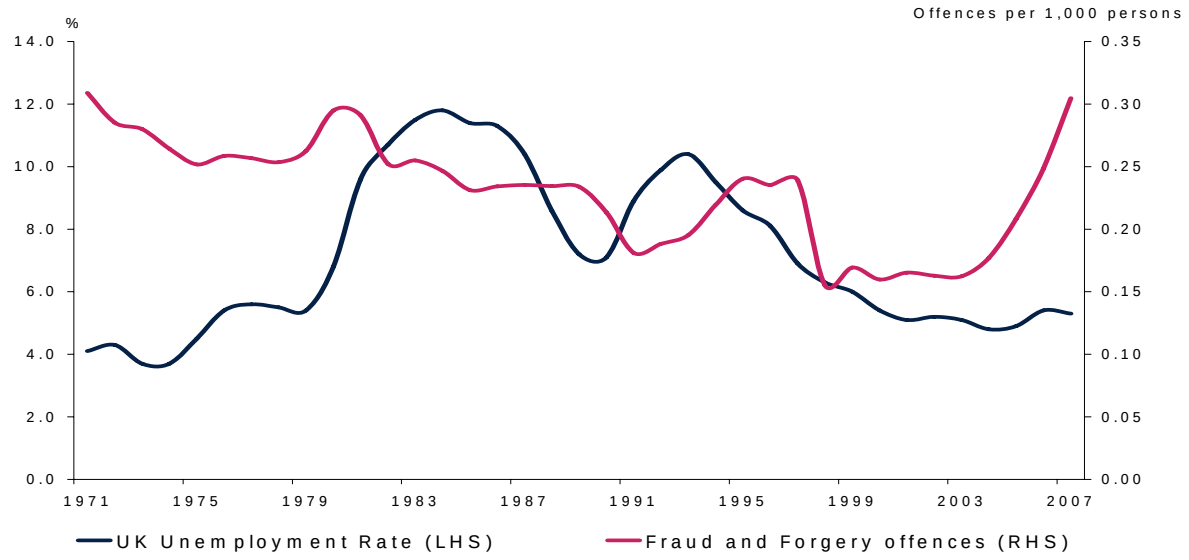
The FSA (2009) warns that deteriorating economic and financial market conditions could contribute to a reduction in firms' capacity to effectively manage and mitigate operational

and financial crime risks. Similar warnings have come from PwC (2009), KPMG (2009), BDO Stoy Hayward (2009), the Fraud Advisory Panel (2009) and CIFAS (2009).

Osborne (1995) finds some evidence of a statistical relationship between crime and economic indicators in the United Kingdom. Scorcu & Cellini (1996) find evidence of a long run relationship between crime and economic indicators in Italy – notably theft and unemployment. Tsushima (2002) finds strong correlations between unemployment and crime rates in Japan. Buonanno & Montolio (2008) find that youth unemployment is a significant predictor of property crime in Spain. Koskela & Viren (1993), by contrast, did not find convincing evidence of a positive relationship between unemployment and auto theft in Finland.[17]

Figure 7 shows the United Kingdom's unemployment rate and (police recorded) fraud and forgery offences across England and Wales.

Figure 7 – Unemployment rate vs fraud and forgery offences (1971 – 2007)



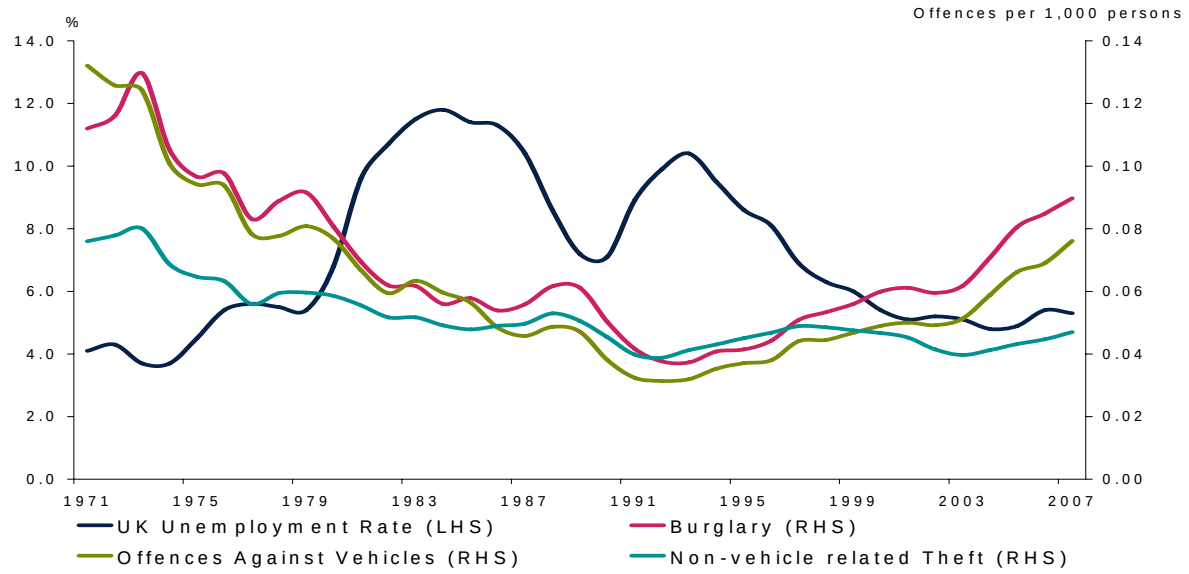
Note: Fraud and Forgery offences are for England and Wales only. Various definition changes occur throughout.

Source: Office For National Statistics (2009), Home Office (2009) and World Bank (2009).

This compares with Figure 8, which shows the United Kingdom unemployment rate against (police recorded) burglary and vehicle and non vehicle-related theft across England and Wales.

[17] Indeed, the authors remove unemployment from their econometric model because preliminary estimation suggested an inverse relationship between unemployment and auto theft.

Figure 8 - Unemployment rate vs burglary, vehicle and non vehicle-related theft (1971 – 2007)



Note: Burglary, vehicle and non vehicle-related theft offences are for England and Wales only. Various definition changes occur throughout.

Source: Office For National Statistics (2009), Home Office (2009) and World Bank (2009).

Appendix 1B

Estimating undetected opportunistic general insurance claims fraud

Methodology

Estimates of undetected retail and commercial insurance claims fraud were obtained using the following methodology:

1. Estimates by individual insurers' of their total fraud risk and actual fraud detection rates from ABI statistics (both as a proportion of total claims) were used to construct 'undetected fraud risk multipliers':[18]

Undetected fraud risk multiplier = implied undetected fraud rate / detected fraud rate.

For example, undetected fraud risk multiplier = 10%/4% = 2.5.

The purpose of the undetected fraud risk multiplier is to represent the undetected fraud rate as a multiple of the detected fraud rate. Applying this multiplier to the number of detected fraudulent claims provides an estimate of the volume of undetected fraudulent claims.

2. A single fraud risk multiplier was then randomly drawn from an underlying distribution of fraud risk multipliers with mean and standard deviation equivalent to our sample.

3. A single quantity of detected fraudulent claims was then randomly drawn from an underlying distribution of detected fraudulent claims with mean and standard deviation equivalent to our sample.

4. Each fraud risk multiplier obtained in step two was then multiplied by the detected fraudulent claims obtained in step three to obtain an estimate of the total number of undetected fraudulent claims for each insurer:

Estimated undetected fraudulent claims = undetected fraud risk multiplier x detected fraudulent claims.

For example, estimated undetected fraudulent claims = 2.5 x 10,000 = 25,000.

5. The result obtained in step four was then aggregated to give an estimate of the total number of undetected fraudulent claims for our sample.

6. This estimate of total undetected fraudulent claims was then multiplied by an adjusted average fraudulent claim value, constructed in the following manner:

Adjusted average fraudulent claim = average claim x (proportion of fraudulent claims that are invented + proportion of fraudulent claims that are exaggerated x the degree to which exaggeration occurs in these claims).

[18] ABI (2009c) and interviews with ABI members.

For example, adjusted average fraudulent claim = £1,550 x (30% + 70% x 60%) = £1,100.[19]

Continuing this example, undetected claims fraud = 25,000 x 1,100 = £27,500,000.

7. Scale the estimated value of total undetected general insurance claims fraud for the entire market.[20]

Steps 2 through 7 were repeated 10,000 times to produce estimated distributions of undetected retail and commercial insurance claims fraud.

Rationale

An alternative (and simpler) method would have been to estimate an industry-wide undetected fraud risk multiplier, combine that with the total number of detected fraudulent claims to obtain an estimate of undetected fraudulent claims and then multiply the estimated number of undetected fraudulent claims by an average undetected fraudulent claim value.

However, this approach would only provide a single point estimate of undetected general insurance claims fraud with no indication of the margin of error around this estimate. In addition, this approach would not reflect the fact that both detected and undetected fraud rates are by definition random variables (not in the sense that insurers' excel at detecting fraud in one year and then are poor the following year) and as such will vary over time and between insurers.

To compensate for this variability and to reflect the fact that our estimates are based on variables with significant margins of error (and in the instance of undetected fraud impossible to quantify in the purest theoretical sense), we repeated the aforementioned procedure a large number of times to significantly reduce the possibility that our estimates reflect the application of inappropriate estimated undetected fraud risk multipliers and detected fraudulent claims volumes.

[19] Rounded figures based on actual application.
[20] We use data from 18 insurers accounting for approximately 78% of the retail market and 72% of the commercial market.

Appendix 1C

Detected general insurance claims fraud (savings) by product line

Table 5 and Table 6 show ABI (2009c) estimates of detected general insurance claims fraud repudiation rates by product line for the past five years, by volume and value respectively. Repudiation rates reflect the level of detected fraud as a proportion of all claims.

Table 5 General insurance repudiation rates by volume (percent of claims)

	2004	2005	2006	2007	2008
Motor (Total)	0.64	0.45	0.52	0.61	0.92
Motor (Personal)	0.77	0.41	0.53	0.66	0.94
Motor (Commercial)	0.34	0.59	0.47	0.44	0.74
Property (Total)	1.22	0.96	1.20	1.39	2.10
Property (Domestic)	1.34	1.03	1.27	1.52	2.30
Property (Commercial)	0.48	0.37	0.55	0.42	0.63
Liability	1.87	3.15	2.87	2.76	3.15
Travel	*	0.83	0.57	0.51	0.68
Other	0.43	1.02	0.90	1.44	1.00
Total	0.87	0.74	0.87	1.04	1.39

Note: * Insufficient companies supplied data for this figure to be published.

Source: ABI (2009c).

Table 6 General insurance repudiation rates by value (percent of claims)

	2004	2005	2006	2007	2008
Motor (Total)	1.62	2.05	2.59	3.17	3.89
Motor (Personal)	1.66	1.85	2.56	3.05	3.56
Motor (Commercial)	1.54	2.77	2.72	3.51	4.55
Property (Total)	2.37	2.09	2.35	1.85	3.04
Property (Domestic)	2.43	1.85	2.39	1.96	3.37
Property (Commercial)	2.29	2.52	2.25	1.62	2.48
Liability	4.94	8.22	10.76	8.89	7.82
Travel	*	4.94	1.20	0.63	1.84
Other	1.02	2.41	3.46	1.48	4.84
Total	2.19	2.64	3.26	3.16	4.19

Note: * Insufficient companies supplied data for this figure to be published.

Source: ABI (2009c).

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