

Economic crime: people, culture & controls

The 4th biennial Global Economic Crime Survey
Chemicals industry supplement



We are delighted to present this companion piece to *Economic crime: people, culture & controls: The 4th biennial Global Economic Crime Survey*. The main survey, available for download at www.pwc.com/ca/crimesurvey, is based on interviews with executives responsible for detecting economic fraud in 5,428 companies in 40 countries. In this chemicals industry supplement we examine data from 181 chemical companies in 36 countries and compare and contrast their views with those of executives across all industries, as well as chemical executives interviewed in our 2005 survey.

After a period of heightened attention to economic crime in the wake of regulation such as Sarbanes-Oxley, many chemical executives feel they have adequate control systems in place and are scaling back attention on economic crime. While most companies adequately address the need for measures to combat fraud, many see a certain level of economic crime as an unavoidable cost of doing business, and are looking to find a satisfactory balance between the costs of a heightened control environment and the costs of the economic crime they seek to prevent.

This year's survey reveals a mixed picture for the chemicals sector. While the reported incidence of economic crime is notably lower than across all industries, the rate of detection by chance is considerably higher, and up substantially from the 2005 survey. Industry executives should be wary of unintended complacency, and ensure they regularly reevaluate the efficacy of their measures to combat economic crime. Intellectual property (IP) infringement stands out by far as the most pressing area of economic crime, with an extremely high average cost per incident and higher managing costs.

Some companies are taking less serious action than in previous years when economic crime does occur. Fewer perpetrators faced dismissal or criminal charges than in 2005. Perhaps of greater importance, more executives reported that their response to serious incidents of economic crime was to do nothing, a trend which warrants concern. While criminal prosecution may not be necessary in all instances, companies need to ensure they are continuing to apply a rigorous approach to discouraging economic crime. In addition, a greater percentage

of serious incidents of economic crime in the chemicals industry was perpetrated by senior/top management than in 2005.

Taken together, these two findings could have serious repercussions in the future. Experience shows the most effective deterrent to economic crime is corporate culture, driven by “tone at the top”—something that can be seriously jeopardized by failing to address incidents of economic crime when they occur, particularly if they are perpetrated by senior/top management.

We hope this special report will help to highlight the importance of improved fraud controls and detection to chemicals industry executives, stimulate discussion, and aid in the development of increasingly effective means of combating economic crime.

The prevalence and type of frauds

In our 2005 Global Economic Crime Survey chemicals industry summary, we reported that the chemicals industry was in the midst of a major culture shift, with awareness of fraud and measures to combat it on the increase. Our 2007 survey results indicate that the prevalence of economic crime in the chemicals sector has leveled off. Indeed, in contrast to other industries, chemical companies appear to be suffering somewhat less. Just 35% of chemical companies reported being victims of economic crime, compared to 43% of companies across all industries, and down slightly from 37% in 2005. The average number of incidents (5.3) was also notably lower than across all industries (see figure 1).

Progress has been demonstrated in specific areas; 2005's high levels of reported incidents of corruption and bribery were down in 2007, with less than 8% of companies reporting these types of crimes, compared to 11% of chemical companies in 2005, and 13% across all industries in 2007.

Chemical companies were also less frequent victims of asset misappropriation (22% vs. all industries: 30%; see figure 2). Notably, this category remains consistent compared to 2005 results for the industry. In addition to product theft, asset misappropriation may also take the form of fraudulent disbursements such as payments to ghost employees, fictitious vendors, pay-and-return schemes, over-billing schemes, unauthorized overtime schemes, and expense report schemes.

Costs of economic crime: direct and indirect

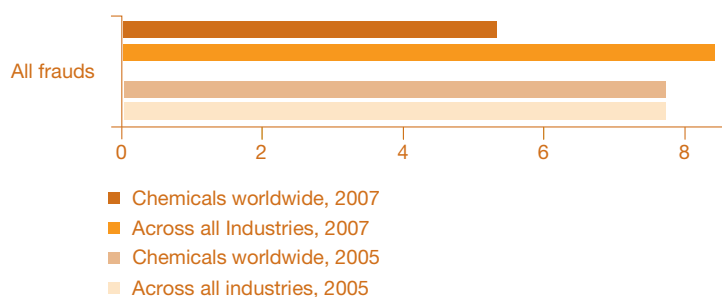
While it may not be feasible or make economic sense to aspire to the detection or prevention of every instance of economic crime, chemical companies need to continue to take economic crime seriously. Certain types of incidents can generate substantial costs, both direct and indirect. Chemical companies in Western Europe were harder hit by economic crime than those in other countries. While overall the average financial losses for chemical companies were below the average across all industries, Western European

companies reported much higher levels of direct financial loss. A substantial number of companies reported incidents generating losses of more than US\$1 million, and a significant number reported losses of more than US\$10 million.

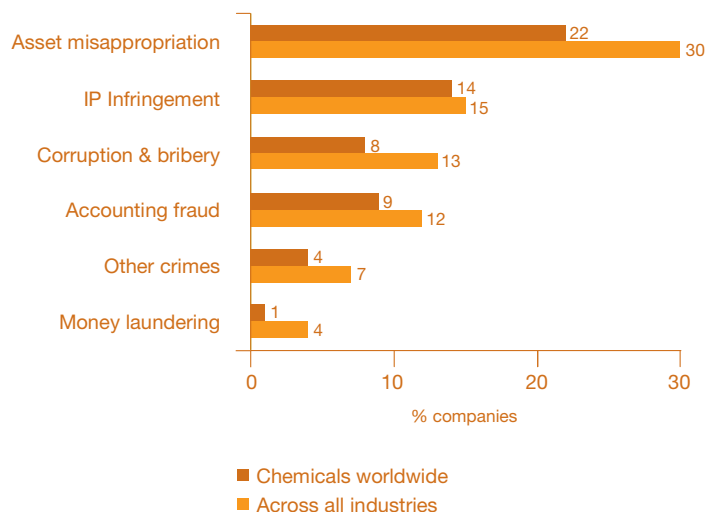
Western European companies also reported particularly high average losses due to incidents of IP infringement—over 30% suffering incidents around IP infringement reported that these cost more than US\$10 million. For much of the chemical industry IP infringement often takes the form of disputes over the use of production processes and technologies—for example when a venture partner makes use of proprietary technology acquired through the venture in other subsidiaries.

Economic crime costs substantially more than the losses directly generated by the crime. Companies also need to consider the costs of managing incidents—and far more importantly, potentially wide-reaching collateral damage. In terms of the concrete cost of managing economic crime, incidents involving IP infringement stood out as by far the most expensive. These

1 Average number of incidents of economic crime reported in the chemicals industry compared to overall industries



2 Percentage of companies surveyed reporting different types of economic crime



types of cases often result in lengthy—and expensive—legal battles, so this result is not surprising.

But economic crime can have a more far-reaching impact that is difficult to measure. Collateral damage can include damage to a company's brand or to its position with regulators. Employee morale may be impacted, with a resultant drop in productivity. Negative publicity from fraud can also affect a company's share price.

Chemical companies are well aware of the collateral damage that economic crime can cause. Almost two-thirds of companies in the chemicals industry worldwide who detailed serious incidents of economic crime reported having suffered collateral damage from the same (63% vs. all industries: 54%), and 14% described the intangible damage as significant. Chemicals companies were also more likely to view damage to the company's reputation as very serious (18% vs. 5% across all industries), and around 20% described the impact on the company's business relations as seriously or very seriously impaired, compared to 10% of

companies across industries. Dealing with major incidents proved a distraction for management—around 25% of respondents described the impact on management's time as serious or very serious, roughly the same rate as across all industries.

The emerging markets: more incidents, but at lower cost

More and more, chemical companies continue to enter new markets as a way to achieve growth. In the chemicals industry supplement to our *11th Annual Global CEO Survey: Compete and Collaborate*¹, 69% of chemical company CEOs reported planning cross-border M&A in AsiaPacific for the next year, compared to only 37% across all industries. Within AsiaPacific, China is especially popular with chemical companies. This section takes a look at economic crime risks in the developing markets, including China, as well as Brazil, India, Indonesia, Mexico, Russia and Turkey (a group which PwC terms the 'E7', or 'Emerging Seven').

E7 chemical companies suffered an above-average rate of fraudulent offences, with nearly half of respondents (49%) reporting an incident of economic crime. The level of economic crime reported by those respondents responsible for business in China is also above average (47% vs. across all industries: 34%), although this result is based on a relatively small sample size.

Chemical companies experienced a slightly higher rate of corruption and bribery in the E7 (20% vs. across all industries: 13%). Nearly two-fifths of the chemical companies in the E7 reported that their company had been asked to pay a bribe (39%). Further, 35% of chemical companies in the E7 reported that their business had suffered because of corruption by competitors. This response rate was notably higher than the global average across all industries (24%) and in stark contrast to a very low rate of such negative consequences reported by chemical companies in Western Europe (5%).

Western European chemical companies were especially hard hit by cases of IP infringement, with many reporting incidents costing over US\$10 million.

¹ PricewaterhouseCoopers' *11th Annual Global CEO Survey: Compete and Collaborate*, as well as industry and country supplements, are available for download at www.pwc.com/ceosurvey

Companies headquartered outside the E7, but operating in these territories, face particular challenges related to economic crime. As is true across all industries, a large proportion of economic crime involves external parties; 77% of chemical companies reported at least one case, and just under a third (32%) of these external perpetrators came from abroad. China stood out as the riskiest of the emerging market countries—38% of perpetrators coming from abroad were located in China.

Detection: unusually high dependence on chance mechanisms

A closer look at the primary methods of detection of the most serious incidents of economic crime reported by respondents in the chemical industry reveals an unusually high rate of detection by chance, either via internal or external tip-offs or by accident (63% vs. 40% across all industries).

This high incidence of chance detection reflects a substantial increase from the results of our 2005 survey, where only 42% of serious incidents were discovered

by chance. Further, the rate of detection of economic crime through internal audits for the chemical industry also declined sharply—down from 26% to only around 5%—well below the level seen across industries in this year's survey (19%; see figure 3). Companies should continuously review their internal audit plans to ensure a balanced approach to fraud detection.

In addition, the rate of economic crime detected by “other” mechanisms is higher for the chemical industry than across all sectors (18% vs. 12% across all industries). This result may be at least partly attributable to the specific types of economic crime seen in the chemicals industry. The use of company proprietary production processes by joint venture partners may not be subject to internal audit scrutiny, but might be detected by other means established at the outset of the joint venture.

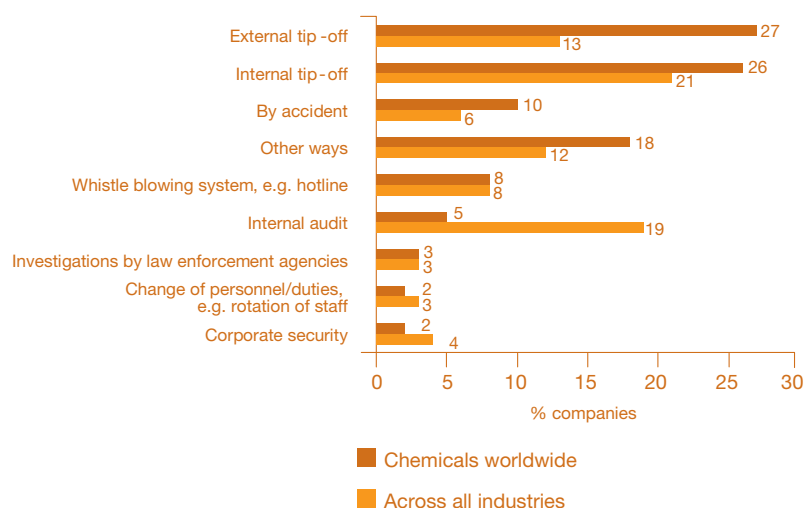
Reporting, investigations, recovery of lost assets

Discovering fraud is only the first step. Companies also need to decide how to deal with the perpetrator, and attempt to recover lost assets.

Upon the discovery of a serious incident of fraud, and consistent with the global results, the most common response of chemical companies was to inform their executive management (81%). Around 55% also reported fraud to law enforcement, a figure in line with the average across industries. This figure was much higher in Western Europe (71%), perhaps reflecting the much higher average cost per incident in that region. Investigation was primarily undertaken internally and was somewhat more likely to involve in-house legal counsel (57% vs. all industries: 47%).

Chemical companies seem somewhat less willing to deal harshly with the consequences of economic crime in this year's survey compared to 2005.

3 Methods of detection of most serious incidents of economic crime



A lower percentage of executives reported dismissing the perpetrator. In 2005 only 6% of chemical companies chose to do nothing, whereas this year 13% report that they did nothing. While this number is lower than across all industries, the increase may indicate a reduced level of consistency around dealing with economic crime. Chemical companies are much less likely than peers in other industries to press criminal charges—only around a third do so, compared to nearly half of companies across all industries. Further, only a small number (18%) of those pressing charges reported that any of the perpetrators were sentenced.

Consistent sanctions against perpetrators are an important factor in deterring future fraud, so companies may need to re-assess their responses to economic crime incidents.

Chemical companies were less likely to recover some of their losses. Only 30% of companies recovered at least some of their losses, down substantially from the 50% rate of recovery seen in the industry

in 2005, and well below the 42% average rate across all industries. One-third (33%) of the companies in the chemicals industry purchase insurance to cover the costs of economic crime. This is somewhat below the global average (39%). In this industry, surprisingly few companies seemed to turn to, or turn to successfully, their insurance providers (if they had coverage).

Management awareness: undue optimism?

In the chemicals industry, although 35% of respondents reported that their company was the victim of economic crime in the last two years, only 5% expect their company will be subjected to economic crime in the next two years, below the global average of 11% (see figure 4). Even regarding IP infringement, predictions were surprisingly optimistic.

More serious frauds by external perpetrators, top management

While a substantial number of those committing serious offences described by chemicals industry respondents were internal perpetrators (41%), this number was down sharply from the 2005 survey, when nearly three-quarters of serious incidents of fraud were perpetrated by internal parties. The incidence of internally instigated serious incidents of fraud is also lower for chemical companies than across all industries (50%). Again, this may be a positive sign that the culture shift we described in 2005 has taken effect—or it may indicate chemical companies have let down their guard and are no longer doing as effective a job at detecting internal fraud.

Internal perpetrators of serious incidents were more likely to have come from the ranks of senior/top management this year, with a surprising 28% coming from the top ranks (see figure 5), compared to 16% for the chemicals industry in 2005, and 20% across all in industries in 2007. This trend is worrying, as our global survey results

Chemical companies are taking less action against those committing economic crime. Only around a third pressed criminal charges—and 13% did nothing at all.

4 Perception vs. reality: actual and anticipated levels of economic crime



indicate that fraud by senior management is much more likely to negatively impact employee morale, particularly when top-ranking offenders are seen to have been let off lightly.

External serious incidents of fraud by customers/clients or suppliers was in-line with the average across industries, while fraud by external parties without any business relationship, such as hackers, was slightly higher (27% vs. 20% across all industries.)

By far the most-cited incentive for fraud in the chemicals industry was “financial incentive”—nearly three-quarters (74%) of chemical respondents cited greed as one of the motivators of fraud, compared to 57% of respondents across all industries. Overall individual causes of fraud were ranked more highly than corporate causes; corporate causes such as “insufficient internal controls” or “low commitment to the company” were cited slightly less frequently than in the global comparison across industries.

Corporate changes can increase the risk of future fraud; the chemicals industry reported higher rates of sale or outsourcing and employee reduction in the past two years compared to results across all industries. While these changes do not appear to have triggered economic crime during the survey period, both are risk factors for higher levels of fraud, so companies would do well to be especially vigilant in the near future when looking to extend their control environment to parties not directly owned by the company.

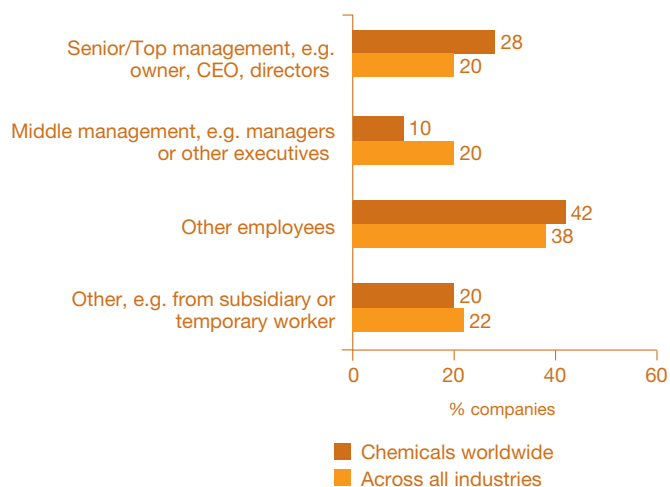
Future Outlook

The chemicals industry is operating in a dynamic, changing business environment. Our research shows that increasingly, chemical company executives are looking to innovation as a main source of competitive advantage. In the chemicals industry supplement to our *11th Annual Global CEO Survey: Compete and Collaborate*, we found that 42% of chemical company CEOs see technological innovation as their main source of competitive advantage in achieving growth.

Collaborative working models with venture partners are becoming an increasingly important way of driving innovation, and in turn growth. But with new ways of working come new risks—as the high level and cost of IP infringement shows. China and other emerging markets provide significant opportunities for the global industry, but these emerging markets can also provide substantial challenges, with increased levels of economic crime.

While some economic crime may be a cost of doing business, companies need to be wary of developing an attitude of complacency. Some types of crime, such as corruption and bribery, should not be tolerated at all—otherwise companies risk substantial penalties from regulators, and potential serious damage to company brand and share price. Executives also need to continue to ensure they maintain an appropriate “tone at the top” and convey a consistent, strong message around economic crime to their entire organization.

5 Level of perpetrator of most serious incidents of economic crime



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