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Financial Incentives for Whistleblowers: A Short Survey.

Giancarlo Spagnolo[1] and Theo Nyreröd

Abstract: Whistleblower reward programs, or "bounty regimes", are increasingly used in the United States. The effectiveness of these programs have been questioned, and empirical evidence on their effectiveness have been scarce likely due to their relatively recent introduction. In recent years, however, empirical and experimental evidence on their effectiveness have become more available and robust. We review the (rather encouraging) evidence on whistleblower reward programs, in terms of amount of additional information generated, deterrence effects, and administration costs, and consider the possibility of extending them to accomplice-witnesses in antitrust.

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1. Introduction

While whistleblower reward programs have existed in different forms since at least the middle ages, the US is the only country that has experimented extensively with them in recent decades. The US False Claims Act (FCA) is the most well-known whistleblower reward program and was originally signed into law in 1863 under President Lincoln to curb fraud in military procurement for the Union Army. The Internal Revenue Office's (IRS) whistleblower reward program was established with the enactment of The Tax Relief and Health Care Act in 2006. The Securities and Exchange Commission's (SEC) whistleblower program was established with the enactment of Dodd-Frank in 2010. In 2016 the Ontario Securities Commission also implemented a bounty program inspired by that of the SEC, although with fundamental differences.

Whistleblowers are typically employees at the organization they blow the whistle on. Rewards can be considered a counterweight to the large retaliation costs usually associated with whistleblowing, such as reallocation, demotion, firing and blacklisting from the industry, and even physical harassment (see e.g. Rothschild and Miethe 1999). We should indeed think of rewards as compensation for unquantifiable damages, as courts often find it difficult to establish causation between a person blowing the whistle and the following retaliatory measures, and therefore to award adequate compensation for damages caused by retaliation (see e.g. Moberly 2007, Modesitt 2013).[2]

Reward programs differ along a set of design dimensions. The FCA allows individuals to litigate privately if the Department of Justice does not deem the information brought sufficient for litigation (Private Litigation in Table 1). The reward size is determined as a percentage of the fine paid by the wrongdoing organization, plus the illegal gains recovered thanks to the whistleblowers' information (Reward % in Table 1). Eligibility requirements for rewards appear to differ in practice (see e.g. Pacella 2015), but whistleblowers who planned and initiated the wrongdoing they report on are not eligible for a reward (Ineligible if in Table 1). Some of the programs have a monetary threshold for a claim to be considered – to reduce the

[2] Retaliating employers often argue that the whistleblower is a disgruntled or poor performing employee, and therefore that any retaliatory measure was justified on other grounds. Confidentiality is also typically insufficient to protect whistleblowers from retaliation. The wrongdoing firm can typically figure out the identity of the whistleblower, especially as most whistleblowers first raise their concerns within the organization before reporting externally, and access to information on a certain organizational wrongdoing is often limited to few individuals.

administrative burden of having to look through meritless claims (Threshold in Table 1). Some programs also put a monetary cap on the size of the reward (Cap in Table 1), and some programs allow for confidentiality while others do not (Confidentiality in Table 1).

Table 1: Whistleblower Reward Programs

	FCA	**IRS**	**SEC**	**OSC**
Private Litigation	Yes	No	No	No
Reward %:	15-30%	15-30%	10-30%	5-15%
Ineligible if:	Criminal Conduct	Criminal Conduct	Criminal Conduct	Criminal Conduct
Threshold:	None	2 Million USD (7623b)	1 Million USD	1 Million CAD
Cap:	No Cap	No Cap	No Cap	5 Million CAD
Confidentiality:	No	Yes	Yes	Yes

There is an ongoing debate about the viability of programs like these to detect and deter crimes in a cost-efficient way. If they can, then these programs could be effectively applied and used *mutatis mutandis* in other areas of law enforcement.[3] One such area, it has been suggested, is antitrust, and some countries other than the US have started experimenting in that direction. In this chapter, we review the increasing amount of rigorous empirical and experimental evidence available on the performance of whistleblower reward programs, in terms of their ability to help agencies detect corporate crimes and to deter firms from undertaking them in the first place. We also look at their administrating costs relative to recovered funds, and discuss the proposal to extend them to accomplice-witnesses in the field of antitrust.

2. Empirical and experimental evidence

In this section we review the empirical and experimental evidence on how reward programs affect the number of reports from employees and the sanctions awarded to wrongdoers (Section 2.1), on their deterrence effects on corporate crime (Section 2.2), and on administration costs relative to recovered funds (Section 2.3).

2.1 Numbers and sanctions

In a seminal study, Dyck et al. (2010) compared whistleblowing in the healthcare sector, where rewards are available to employees blowing the whistle through the False Claims Act, with

[3] (Engstrom 2016: 5) provides an overview of regulatory areas that have been suggested to be fit for a bounty approach.

non-healthcare sectors where they are not. The authors found that 41% of fraud cases are detected by employees in the healthcare sector. This number is only 14% for other sectors, a highly statistically significant difference (at the 1% level) despite a small sample size (Dyck et al. 2010: 2247). They also find that in comparison, 'classic' watchdogs emphasized in corporate finance (directors, auditors) play a negligible role in detecting fraud.

More recently, Call et al (2018) studied a dataset of employee whistleblowing allegations and the universe of enforcement actions for financial misrepresentation in the US. They found that whistleblower involvement in enforcement actions is correlated with higher monetary sanctions for the wrongdoing firms, increased jail time for culpable executives, and enforcement proceedings in which whistleblowers were involved began quicker. This suggest that whisteblowers bring highly valuable additional information to law enforcement agencies.

On the experimental side, Breuer (2014) studied the effects of rewards on tax compliance. He finds that monetary rewards lead to a significant increase in whistleblowing frequency, and the larger the reward the more pronounced the increase in whistleblowing and the resulting detection probability of tax evasion.

More recently, Butler et al (2019) experimentally investigated if and how monetary incentives and expectations of social approval or disapproval, and their interactions, affect an employee's decision to blow the whistle when the social damages from the reported misbehavior is more or less salient. They find that rewards have a substantial and statistically significant effect on whistleblowing. This effect is stronger (weaker) when the negative externalities are (aren't) visible to the public and the whistlebower is subject to public scrutiny.

Overall, this evidence suggests that important additional information is obtained by law enforcement agencies thanks to whistleblower rewards program. However, it does not tell us if and how firms react. A primary objective of reward programs is indeed to prevent corporate crime, but evidence on deterrence is difficult to obtain, and has been scarce until recently.

2.2 Deterrence

Amir et al (2018) studied the effects of the introduction of a whistleblower hotline in Israel in February of 2013, together with a reward program. The introduction of the hotline was concurrent with a large media campaign attracting attention to the hotline, in an attempt to

increase deterrence. They found a significant increase in tax collections in sectors where there is a high risk of tax avoidance. The authors attribute this increase in tax collections to the deterrence effects of the hotline in conjunction with the large media campaign, as the tax money returned through the hotline itself were insignificant (in 2013, around 250 events were processed by the Tax Authority of Israel, and two rewards paid (ibid: 953)).

Wiedman & Zhu (2018) studied the deterrent effects of Dodd-Frank by examining its impact on aggressive financial reporting in US firms. They measure aggressive reporting using the absolute value of abnormal accruals, and find a significant reduction in abnormal accruals (approximately 11%) following the introduction of Dodd-Frank.

Most recently, Berger and Lee (2019) test the causal impact of state and federal whistleblower laws on reducing fraud probability (state level FCA laws and Dodd-Frank). They look at what happened when a state introduced a False Claims Act. When firm shares are invested in by a state pension fund from a state with a general FCA, then that firm becomes subject to the FCA and hence claims can be filed against them. They find that when firms become exposed to the FCAs, the probability of fraud decreases by 5% to 9% (ibid: 41).

They also predict that exposure to a higher risk of whistleblowing under the FCAs will reduce audit fees because of a lower risk of fraud, and they find that audit fees are 4.5% to 6% lower after a firm is exposed to a state FCA relative to the firm-years not treated by FCA exposure (ibid: 7). They find that both state level whistleblower laws and Dodd-Frank has a deterrence effect.

Other empirical studies on whistleblowing – absent rewards – are also relevant, as they shows how cases of whistleblowers' can have a significant effect on deterrence, which coupled with the evidence in section 2.1 on increasing whistleblowing implies a robust deterrence effects of these schemes.

Wilde (2017) studied a dataset of retaliation complaints filed with the Organizational Health and Safety Administration between 2003 and 2010 on violations of the Sarbannes Oxley Act Paragraph 806, which prohibits retaliation against employees who provide evidence of fraud. He finds that in the period prior to retaliation allegations, whistleblower firms exhibit higher

incidence of financial misreporting compared with control firms and that following whistleblower allegations, whistleblower firms are significantly more likely to experience a decrease in the incidence of accounting irregularities and a decrease in tax aggressiveness compared with control firms (ibid: 3). The effect persists for at least two years after the allegations.

Johannesen and Stolper (2017) studied the deterrence effects of whistleblowing in the off-shore banking sector. They studied the stock market reaction before and after the whistleblower Heinrich Kieber leaked important tax documents from the Liechtenstein-based LGT Bank and found abnormal stock returns in the period after the leak and that the market value of banks known to derive some of their revenues from offshore activities decreased. The authors interpret their results as follows: "Our preferred interpretation is that the leak induced a shock to the detection risk as perceived by offshore account holders and banks, which curbed the use of offshore bank accounts and ultimately lowered the expected future profits of banks providing access to such tax evasion technologies." (ibid: 21-22).

As for experimental evidence, Abbink and Wu (2017) experimentally studied collusive bribery, corruption, and the effects of whistleblower rewards on deterrence. They found that amnesty for whistleblowers and rewards strongly deter illegal transactions in a one-shot setting, but in repeated interactions the deterrence effect is reduced, so that higher rewards may be needed.

2.3 Administration costs

Some observers have expressed concerns over the administration costs of these schemes (Ebersole 2011, Bank of England 2014). This concern, however, is unsubstantiated and to our knowledge no serious cost benefit analysis has been carried out to support this a prior objection.[4] Attempted evaluations of this kind are often defective in several respects. Consider for example Filler and Markham's (2018: 335-336) attempt to put the alleged success of the SEC's whistleblower program into perspective, arguing that between 2012 and 2016 recoveries linked to whistleblowers are only about 5% of the overall recoveries from the SEC's

[4] One cost-benefit evaluation we know of does not substantiate this concern either. Carson et al. (2008) estimate the ratio of benefits to costs to be between 14-1 and 52-1 for recoveries under the FCA between the years 1997-2001.

enforcement program. However, they fail to compare this with the resources required to generate these enforcement benefits. The SEC whistleblower office has around 30 employees, which compared to the rest of the SEC (in 2015 the SEC had a total of 4301 employees (SEC 2017: 14)) is a meagre 0.83% of SEC's employees.

More generally, a serious evaluation would require a thorough cost benefit analysis, including personal costs and benefits to whistleblowers, deterrence effects, costs to firms, and any other costs and benefits. That is well beyond what has been done until now and of the scope of this chapter. We can however do a much more down to earth – back of the envelope calculation – based on an estimation of *only* administrative costs and benefits, to shed light on the claim that these programs may be costly to administer. The IRS and SEC programs are suitable for this purpose since the agencies provide annual reports with enough information on their administration and net benefits. The IRS has received around 117,400 claims (7623(a) and (b)) since the introduction of the program up until 2017, and information submitted by whistleblowers has assisted the IRS in collecting $3.6 billion since the introduction of the program up until 2017 (IRS 2017: 3). If we divide $3.6 billion by 117,400, we get that the average whistleblower claim at the IRS generates **$30,664** dollars in returned tax money.

The SEC has received around 28,100 claims since the program's introduction is (SEC 2018: 20). The successful sanctions due to merited whistleblower claims amounts to $1.7 billion since the program's introduction. If we divide $1.7 billion by 28,100, we get that on average a whistleblower claim is worth **$60,498** dollars in sanctions.

The IRS Office of the Whistleblower (OWB) has 36 full time employees (IRS 2018: 5). The SEC report from 2018 contain suggestive information on their staffing levels at their OWB. It appears that they have more than 15 employees but less than 30 (SEC 2018: 6).

According to PayScale.com,[5] the average annual salary at the IRS is $74,000, the highest is around $175 000. Taking the highest annual salary, we have 36 x $175,000 = $6,300,000. So, the annual cost of staffing at their OWB amounts to approx. $6 300 000. Now we extend this over the years 2006-2017, that is $6,300,000 x 11 = $69,300,000. We then divide this cost by

[5] https://www.payscale.com/research/US/Employer=U.S._Internal_Revenue_Service_(IRS)/Salary Accessed 04.09.2019.

the total number of claims to get the average cost per claim, $69,300,000 / 117,400 = **$590** per claim. According to PayScale.com,[6] the average annual salary at the SEC is $146,000, and the highest salary $265,000 annually. Taking the highest annual salary, we have 30 x $265,000 = $7,950,000. $7,950,000 x 8 (2011 – 2018) = $63,600,000 / 28,100 = **$2,263** per claim.

This back of the envelope calculation does not take deterrence effects into account, nor the fact that although we have the number of claims submitted in recent years, it often takes several years until a reward is paid out. This means that while we have the total number of claims submitted to the IRS and SEC, we do not yet have the total number of rewards paid out due to these claims. Of course some of these wrongdoings may have come to the attention of enforcement agencies even without the aid of whistleblowers. But even if we assume that 90% of recoveries linked to whistleblower rewards would be obtained even in their absence, these programs would still fully pay for themselves in terms of pure administrative costs and benefits (abstracting from the improved detection and deterrence).

3. Antitrust and accomplice witnesses

Some countries have started to experiment with whistleblower rewards in antitrust cartel enforcement. Antitrust reward programs have been introduced in the UK, Hungary, South Korea, Slovakia, and Pakistan, with different design. They typically involve very small rewards, however, at least compared the FCA,[7] and they are too recent to have generated enough data for an empirical evaluation[8] (and in any case some agencies do not disclose the few available data, as in the UK).[9] Below is a table summary of current reward programs in

[6] https://www.payscale.com/research/US/Employer=United_States_Government%2C_Securities_and_Exchange_Commission_(SEC)/Salary Accessed 04.09.2019.

[7] The UK cap is £100,000 (CMA 2014). The cap in Pakistan is 2,000,000 Rupees (approx. 10,000 Euro), Reward Payment to Informants (2014) available here. Hungary employs a 1% statutory reward, capped at 50,000,000 Hungarian Forints (approx. 160 000 Euro), (Competition Act Article 79/A) available here. The Slovak program cap is 100,000 Euro, (Act No. 136/2001, Paragraph 38g) available here, the upper bound in South Korea is 3 billion won (approx. $2.8 million).

[8] The South Korean program was adopted in 2002, the UK program in 2008, the Hungarian program in 2010, and the Slovak and Pakistani programs in 2014.

[9] The CMA does not release data on their program, citing public interest concerns over the confidentiality of those who report cartels (CMA 2018). This is contrary to most other agencies, who provide generic metadata on the programs, such as; number of rewards granted, number of claims received, average size of the reward. One could argue, contrary to the CMA, that the public interest is better served by releasing this data, both for transparency reasons and for scholars who are interested in assessing the merits of these programs. Marvão & Spagnolo (2016: 27) also argue that "The development of meaningful research on leniency would be facilitated if competition

antitrust, and an illustration of how they differ with respect to the US programs along the design dimensions;

Table 2: Antitrust Reward Programs[10],[11]

	South Korea	Hungary	Pakistan	UK	Slovakia
Private Litigation:	No	No	No	No	No
Reward %:	Discretionary	1% (of fine)	Discretionary	Discretionary	1% (of fine)
Ineligable if:	Criminal Conduct	Criminal Conduct	Unknown / none	Direct invovlement[12]	Criminal Conduct
Threshold:	None	None	None	None	None
Cap:	$2,800,000	€160,000	€10,000	£100,000	€100,000
Confidentiality:	Yes	Yes	Yes	Yes	Yes

A glaring difference between these programs and those in the US is the reward size. It is highly unlikely that the small reward size of these programs will incentivize any increase in reporting, given the huge retaliation costs usually associated with whistleblowing. Rewards are further discretionary in Pakistan, South Korea, and the UK, which makes blowing the whistle even more of a gamble. There is no reason, however, why the evidence outlined in section 2 would not apply to these antitrust programs as well, were the size of the rewards scaled up at the levels of the FCA or SEC.

There has been a discussion among antitrust scholars on whether to introduce rewards for accomplice-witnesses, that is, as an extension of current leniency programs offering immunity to the first cartel member that self-report and collaborate with antitrust enforcers (Kovacic 1996). Theory suggests that paying rewards to the first self-reporting cartel member (or individual) could considerably increase detection and deterrence (Spagnolo 2004, Aubert et al. 2006). Bounties could be financed from a fraction of the fines paid by other cartel participants. Spagnolo (2004) shows that contrary to standard results in the law and economic literature, a reward for the first spontaneously self-reporting party that is a fraction of other firms' fines can

authorities or agencies in charge of supervising them start to implement more consistent data collection and data disclosure policies".

[10] The monetary amounts stated in "Cap" are approximations based on currency rates 19.08.2019.

[11] The wording "criminal conduct" is more precisely defined in the laws, we omit details due to reasons of space.

[12] Although this usually disqualifies, it does not always do so. "The CMA does not consider that an individual in such circumstances [direct involvement in cartel activity] should ordinarily also gain a financial reward." CMA (2014).

lead to the first best - full deterrence with no inspection costs - if fines are sufficiently large (but still finite).

While providing leniency for self-reporting of cartel participation appears to have been a success (Marvão and Spagnolo 2016), and leniency for self-reporting cartel members has become common practice in cartel enforcement in most jurisdictions, rewards have never been implemented in the field.[13] On the other hand, there is some experimental evidence that gives us an idea of their likely effectiveness.

Apesteguia, Dufwenberg and Selten (2007) pioneered the study of leniency and rewards for accomplice witnesses that report their cartel to the antitrust authority. They used a one shot homogeneous Bertrand oligopoly model, where convicted firms faced fines equivalent to 10 per cent of their revenue. This however implied that subjects did not play repeatedly, and that no fines were imposed when a partner cartel member deviates from collusive strategies (in a Bertrand game firm revenue is unrealistically zero because of the Bertrand paradox). The results of this pioneering experiments do not lend clear support for leniency or rewards but are difficult to interpret and relate to real world law enforcement.

A second experimental study by Hamaguchi, Kawagoe and Shibata (2009) considers the effects of cartel size (in terms of the number of members), the fine schedule and the degree of leniency (partial reduction, immunity or rewards) on the likelihood that a cartel is reported. They found that the possibility of reporters receiving a reward had a large positive impact on dissolving cartel activity.

Bigoni et al. (2012) experimentally studied leniency policies and rewards as tools to fight cartel formation in an environment that more closely resembles real world antitrust enforcement and found that rewards financed by the fines imposed on the other cartel participants, after subjects had time to learn the game, had a much stronger negative effect on cartel formation and average price than leniency alone (returning prices to a competitive level). The results confirm

[13] A difference between whistleblower reward programs and corporate leniency programs in antitrust is that the baseline case in latter will be a culpable undertaking. There has been a discussion over whether to and to what extent to reward culpable whistleblowers (see e.g. Pacella 2015), and there may be ethical obstacles to reward culpable people as the baseline case, as in antitrust (see also Buccirossi and Spagnolo 2005: 1282). That said, the practice of offering personal incentives for culpable persons is a widespread practice in judicial systems (consider plea bargaining) and does not constitute a compelling prima facie case against their introduction.

Spagnolo‘s (2004) theoretical result that - if well implemented and sufficiently large - rewards can have a dramatic deterring and desisting effect on cartel formation.

In general, however, all types of rewards in the antitrust context are more controversial than in the whistleblower context. In a report by the Government Accountability Project (GAO 2011: 36-50), enforcement agencies did not support the proposal of introducing rewards, though it is not clear whether the object of inquiry were rewards for innocent witnesses, for accomplice-witnesses, or both. The predominant concern voiced appeared to be about the possibility that monetary rewards could diminish the credibility of whistleblowers as witnesses. However, if many firms and individuals are involved in a crime, as is typically the case for cartels, this concern could be easily remedied by rewarding the first reporting firm/individual that report the cartel, provide only leniency/immunity to a second firm/individual that collaborates, and then have this second firm/individual that did not receive financial rewards testify in court. In the light of this, and of the evidence on other reward programs discussed earlier, it is not clear why antitrust enforcers expressed a negative opinion in conflict with the opinion of the academics.

To be sure, the GAO report suggests that that other concerns were present, such that antitrust rewards would undermine internal reporting, generate claims without merit, and require additional resources (GAO 2011: 36). All these concerns have been brought up before against whistleblower rewards, and the available evidence suggests that they have been grossly overstated (see e.g. Nyreröd and Spagnolo 2019).

4. Conclusions

We surveyed the available empirical and experimental evidence from rigorous and independent academic studies on the effects of whistleblower reward programs. The evidence shows that – if competently designed and properly administered - these programs are very effective at increasing detection and sanctions against corporate fraud, and most importantly at deterring firms from engaging in fraudulent behaviour in the first place. In terms of administration costs, a simple back-of-the-envelope calculation suggests that these programs are also largely self-financing, thereby also saving law enforcement costs. Experimental studies of rewards for accomplice-witnesses that self-report first in antitrust frameworks suggest that they can lead to much better enforcement outcomes than current policies offering leniency alone. Needless to

say, poor design or negligent implementation can prevent these policies – as any other ones – from delivering these positive effects.

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