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The Moral Hazard of Limited Liability? An Empirical Scottish Study

Jonathan HARDMAN*

Introduction

In recent years a large number of Scottish law firms have converted from unincorporated partnerships to limited liability partnerships. Under Scots law, both unincorporated partnerships and limited liability partnerships enjoy separate legal personality, making them a rarity. Following their conversion, a large number of them have either entered insolvency process or been the junior partner in a merger that has resulted in their separate branding being lost. Could this be as a result of the introduction of limited liability? If so, does the example of Scottish limited liability partnerships provide empirical evidence that utilising a business vehicle with limited liability encourages the vehicle in question to export more risks to the creditors in a manner which subsequently resulted in the collapse of such law firms? This paper reviews the theory of limited liability and the publicly available accounts of such limited liability partnerships to establish whether there is any empirical evidence that the adoption of a limited liability form encouraged the partnerships in question to increase the risk to their legal forms. In examining this, it explores a broader question: does limited liability encourage the owners of businesses to externalise risk to the creditors?

What has happened to the legal market in Scotland? On 30 October 2017, Scottish law firm Maclay Murray and Spens (founded 1871) merged with international law firm Dentons, taking the combined name (and branding) of Dentons.[1] The same

* Honorary Lecturer, University of Glasgow. This paper was presented to the inaugural conference of the Partnership, LLP and LLC Law Academic Forum held at Nottingham Trent University on 5 April 2018. The author is a senior associate at a law firm which is an unincorporated partnership in Scotland. The author does not consider this a conflict of interest in respect of this paper but wishes to declare it to avoid any perception of such a conflict. The author is grateful for the input of all participants at the conference and for those who have input in previous drafts. The views expressed in this article are only those of the author and not of any entity with which the author is affiliated to or employed by. All inaccuracies or weakness of argument remain the responsibility of the author.

[1] Kenneth Shand, 'Maclay Murray & Spens Completes Merger with Dentons' (*Scottish Legal News*, 1 November 2017) <http://www.scottishlegal.com/2017/11/01/maclay-murray-spens-completes-merger-with-dentons/> accessed 10 May 2018.

occurred when Scottish firms Dundas and Wilson (founded 1759), McGrigors (founded 1769) and Biggart Baillie (founded 1894) merged with CMS Cameron McKenna,[2] Pinsent Masons[3] and DWF[4] respectively. In addition, there have been 3 well publicised insolvencies of Scottish law firms during the same time.[5] The result is that 7 of the top 15 Scottish law firms from 2010/11 no longer exist as separate brands as at 31 December 2017.[6] All of the firms affected moved from general partnerships to limited liability partnerships. Can this phenomenon be explained by the move to limited liability? The purpose of this paper is to evaluate the theoretical moral hazard of limited liability, and search publicly available evidence to establish whether the merger and insolvency activity in the Scottish legal market arose as a result of such moral hazard.

Theory

Moral Hazard

Moral hazard has been defined as "the tendency of insurance protection to alter an individual's motive to prevent loss."[7] At its heart is the concept that some other party agreeing to pay for something that affects you encourages you to take riskier decisions. Initially the emphasis in analysis was strongly on the "moral" aspect of moral hazard, that somehow it reflected a form of temptation and that accordingly acknowledging moral hazard should be avoided as it is only relevant as a concept for the weak or immoral.[8]

The moral emphasis has faded since the 1960s. Arrow split moral hazard in the context of medical insurance into two types: increased use of service and using more expensive doctors,[9] but believed that the moral hazard risks did not outweigh the benefits of utilising more insurance policies. This approach changed the emphasis of analysis of moral hazard, so much so that it became possible to state that moral hazard

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[2] John Hyde, 'CMS Completes Takeover Deal for Dundas & Wilson' (*The Law Society Gazette*, 13 December 2013) <https://www.lawgazette.co.uk/practice/cms-completes-takeover-deal-for-dundas-and-wilson/5039191.article> accessed 10 May 2018.
[3] ibid.
[4] Craig Cameron, 'Biggart Baillie Reveals Merger with DWF' (*The Herald*, 8 June 2012) <http://www.heraldscotland.com/business_hq/13060970.Biggart_Baillie_reveals_merger_with_DWF/> accessed 10 May 2018 - although, in Scotland, the name DWF Biggart Baillie was briefly used after the merger.
[5] Tods Murray, Semple Fraser and McClure Naismith.
[6] Margaret Taylor, 'When Management Fails: a Tale of Scottish Law Firm Collapse' (*The Lawyer*, 7 October 2015) <https://www.thelawyer.com/issues/online-october-2015/when-management-fails-a-tale-of-scottish-law-firm-collapse/> accessed 10 May 2018.
[7] S Shavell, 'On Moral Hazard and Insurance' (1979) 93(4) Quarterly Journal of Economics 541, 541 as quoted in M-L Djelic and J Bothello, 'Limited Liability and its Moral Hazard Implications: the Systemic Inscription of Instability in Contemporary Capitalism' (2013) 42(6) Theory and Society 589, which provided the idea of discussing limited liability in moral hazard terms, and also provided the sources that are discussed as part of this theory section.
[8] See T Baker 'On the Genealogy of Moral Hazard' (1996) 75(2) Texas Law Review 237
[9] K Arrow 'Uncertainty and the Welfare Economics of Medical Care' (1963) 53(5) The American Economic Review, 941, as referenced in Djelic & Bothello (n 7).

had "in fact, little to do with morality, but can be analysed with orthodox economics tools."[10]

In other words, moral hazard is not a sign of weakness but instead a legitimate economic response to others bearing the risk for your actions.

Limited Liability

There is a history of strong reticence to limited liability. Adam Smith worried about incentives – if managers do not own the business, why would they care; and if shareholders only risk the amounts that they invest, they lack an incentive to correctly monitor.[11]

A circular to bankers in 1840 stated:

> Nothing should be done by the legislature to weaken the motives for personal industry, economy and thrift. The moral effect of all joint stock associations for mercantile objects which share property within the compass of individual exertion is bad; they introduce in the place of patient labour and moderate expectations ambitious hopes and the habit of gambling in shares.[12]

This shows the risk of limited liability that this paper is concerned about: a tendency for limited liability to encourage risk taking. This is generally conceded in the modern analysis: Hansmann and Kraakman have concluded that limited liability "is generally acknowledged to create incentives for excessive risk taking by permitting corporations to avoid the full costs of their activities" by not spending enough to avoid accidents and undertaking fundamentally riskier activities.[13] The result of limited liability is, effectively, that shareholders obtain the upside of risk, but creditors "bear the risk of business failure".[14]

Defenders of limited liability are keen to respond by highlighting that creditors are able to price the systemic risk of limited liability into their interactions with the entity.[15] When it comes to involuntary creditors (i.e. tort victims), the response is that to have anything other than limited liability would result in lower investment and be administratively difficult to pursue.[16] Ultimately, the result is that even the staunchest

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[10] M Pauly, 'The Economics of Moral Hazard: Comment' (1968) 58(3) The American Economic Review 531 as referenced in Djelic and Bothello (n 7)

[11] Adam Smith, *Wealth of Nations* (first published 1789, EP Dutton 1910) 279 - 281.

[12] See B C Hunt, *The Development of the Business Corporation in England, 1800-1867* (Cambridge University Press 1936) 50, as referenced in A Gamble and G Kelly 'The Politics of the Company' in J Parkinson, A Gamble and G Kelly (eds), *The Political Economy of the Company* (Hart Publishing 2000) 31.

[13] H Hansmann and R Kraakman, 'Toward Unlimited Shareholder Liability for Corporate Torts' (1991) 100(7) Yale Law Journal 1879, 1879, 1882 – 1885.

[14] B Cheffins, *Company Law Theory, Structure and operations* (Oxford University Press 2009) 497.

[15] F H Easterbook and D R Fischel, The *Economic Structure of Corporate Law* (Harvard University Press 1996) 50 - 52

[16] S M Bainbridge and M T Henderson, *Limited Liability: A Legal and Economic Analysis* (Edward Elgar Publishing 2016) 66 – 77

defenders of limited liability concede that its critics have a point: that somehow limited liability can be equated with undertaking riskier activity.

It can therefore be stated that, theoretically, limited liability presents a form of moral hazard in that it, rationally, encourages actors to take more risk in business ventures than they otherwise would.[17]

It is, however, difficult to establish that this is definitively what the theorists believe. The majority of discussions of limited liability conflate it with separate legal personality. For example, in their discussions of "limited liability", both Bainbridge/Henderson and Easterbook/Fischel discuss the issues of suing many shareholders and issues of difficulty of contracting without limited liability.[18] Each of these are more accurately issues of a lack of separate legal personality. It is very difficult to disentangle analysis of separate legal personality from analysis of limited liability. This is unsurprising as the majority of jurisdictions package the two concepts together.[19]

The LLP

The limited liability partnership was introduced to the UK by the Limited Liability Partnerships Act 2000 in response to pressure from professional bodies: particularly to enable litigation against auditor firms (a separate legal personality issue) and to protect the personal assets of auditors.[20] It has been stated that there are 5 key elements to an LLP:

1. Separate Personality (like a company);
2. Limited Liability (like a company);
3. Requirement to disclose accounts (like a company);
4. Tax Transparency (like a partnership); and
5. Inherent conflation of ownership and control based on partnership default governance rules.[21]

It is at this point that we can see a fundamental advantage to analysing Scottish LLPs: Scottish general partnerships already enjoy separate legal personality.[22] This means that the conflation between separate legal personality and limited liability can be avoided when tracking business entities that moved from a Scottish general partnership to an LLP. When number 1 is removed from the above list, we can see

[17] See Djelic & Bothello (n 7) for a full discussion of the interaction between the two.
[18] Easterbook & Fischel (n 15) 40 – 44 and Bainbridge and Hednerson (n 16) 5 - 11
[19] See R Grantham and C Rickett (eds) *Corporate Personality in the 20th Century* (Oxford University Press 1998) 12.
[20] V Finch & J Freedman, 'The Limited Liability Partnership: Pick and Mix or Mix-Up?' [2002] Journal of Business Law 475; see also J Freedman and V Finch, 'Limited Liability Partnerships: Have Accountants Sown up the "Deep Pockets" Debate?' [1997] Journal of Business Law 387.
[21] Finch & Freedman (n 20) 481 – 495.
[22] Partnership Act 1890, s4(2).

that the main change in making such a move is to provide limited liability to the members and also require the publication of various financial data. We shall use the latter to test the effect of the former.

The research questions for this paper are therefore:

a. do the published accounts of Scottish law firms show that there is a systemic externalisation of risk from the owners of the law firms to their creditors following the transfer of the business from an unincorporated partnership to an LLP?

b. if so, does this provide empirical evidence that limited liability causes a fundamental moral hazard of externalisation of risk to creditors?

It should be noted that a previous qualitative study has indicated that clients of audit firms did not experience a decline in the quality of work when their auditors moved to LLP status,[23] but the purpose of this paper is to undertake a quantitative study.

Tests

In order to test these research questions, we will outline a core methodology and review four different tests applied from that: firstly, in relation to security granted, secondly a profit-and-loss test, thirdly a balance sheet test, and fourthly an examination of time taken to publish period financial information.

Base Methodology.

Method

This paper's methodology is to use empirical data which is published by each LLP and publicly available to download from Companies House. Given variations in accounting policies adopted by different LLPs[24] it is difficult to compare the accounts of one LLP against the accounts of another LLP. However, we can track changes by a particular LLP over time. Accordingly, Table 1 outlines the name of the LLP, its registered number, the date (according to the accounts) that the asset transfer took place,[25] and the date that each subsequent financial year ended on. Table 1 is the only place that this data appears, the other data collated in this paper concentrates on analysing each set of accounts by reference to the number of years that the LLP in question had been incorporated. The methodology does not compare accounts for the same specific financial year against each other, but instead concentrates on the length of time after the asset transfer date. Thus, when faced with an asset transfer on 31 December 2005 and one on 31 December 2008, the methodology would not compare the accounts made up to 31 December 2010 against each other but would instead compare those made up to 31 December 2010 (for the asset transfer on 31 December

[23] C Lennox and Bing Li 'The Consequences of Protecting Audit Partners' Personal Assets from the Threat of Liability' (2012) 54(2-3) Journal of Accounting and Economics 154.

[24] See Limited Liability Partnerships (Accounts and Audit) (Application of Companies Act 2006) Regulations 2008 (SI 2008/1911) as amended.

[25] i.e. the date on which the assets of the unincorporated partnership were transferred to the LLP.

2005) against those made up to 31 December 2013 (for the asset transfer on 31 December 2008). The purpose of this is to establish whether incorporation (and the associated limited liability) has the same effect on LLPs over time and provide an even based to compare from.

This method is premised on the assumption that each accounting period is of a year's length. It is possible to vary these.[26] As can be seen from Table 1, only one firm did change the length of its accounting period during the sample period. Transferring between accounting policies and different interpretation of the same accounting policies mean that accounts may be difficult to compare.[27] Our primary aim, therefore, is to not compare base data contained in the accounts against each other, but to compare the changes to the firms: to see if there is any discernible consistent effect that limited liability has on vehicles. All raw data is included in the relevant tables appended to this paper for ease of verification.

<u>Sample Group</u>

This paper will use a sample of 18 law firms over time. The advantage of this is that these firms were established partnerships prior to their adoption of LLP status. The law firms have been selected because they were either on the list of "Scotland's Top 15 International Firms 2010/11" or "Scotland's Top 15 International Firms 2014/15" compiled by The Lawyer.[28] Accordingly, the sample consists of firms selected by The Lawyer as being major international firms operating within Scotland – it therefore may not be generalizable to the law firm market within Scotland as a whole, or beyond Scotland. From this base sample, the following adjustments have been made:

A. Dickson Minto, Turcan Connell and Lindsays have not transferred the business and assets of the unincorporated partnership to an LLP and therefore have not adopted limited liability and so do not have publicly available information. This means that they cannot be included in the sample group; and

B. Semple Fraser appears on neither list but it provides an example of a high-profile law firm insolvency.[29] Accordingly it has been included in the sample.

The sample firms are colour coded in Table 1 to indicate those that entered insolvency process (shaded red and will be referred to as the "**Reds**"), those that were the junior partner to a merger and so were "taken over" (shaded yellow and will be referred to at the "**Yellows**") and those that were either unaffected by merger activity or were the senior partner to a merger (unshaded and will be referred to as the "**Unshaded**"). There are 3 Reds, 5 Yellows and 10 Unshadeds. Table 1 covers all accounts filed prior to 25 October 2017. We shall show all results by sample types – if the results are consistent

[26] See Limited Liability Partnerships (Accounts and Audit) (Application of Companies Act 2006) Regulations 2008 (SI 2008/1911) Reg 7.
[27] See M Akita and Y Osaki 'Optimal Penalty and Accounting Policy' (2016) 48(54) Applied Economics 5295.
[28] See (n 6) - this list is prepared by turnover.
[29] 'Administrators for Law Firm Semple Fraser Announce 62 Redundancies' (*BBC* News, 9 March 2012) <http://www.bbc.co.uk/news/uk-scotland-scotland-business-21725412> accessed 10 May 2018.

across sample type then they will provide insights into an effect that limited liability generally has on a business form – in other words, this would indicate that adopting limited liability was a factor in the results in question. However, if the Reds produce different results to the Unshadeds then the results would indicate that any outcome was created by decisions which would or could have been taken regardless of the legal form of the entity in question, rather than a systemic cause of adopting a limited liability model.

Charges Test

Moving to an incorporated form enables a Scottish partnership to grant a floating charge, which is not available to an unincorporated partnership.[30] LLPs, however, can grant all types of security that an unincorporated partnership can. Econometric data has shown that ability to grant security is empirically linked to access to debt.[31] From the records at Companies House we will examine the security granted by the LLPs:

i. what percentage of our sample have granted a type of security that could not have been granted by an unincorporated partnership? This would demonstrate whether the LLPs had utilised a form of security for credit that was previously unavailable to them, which may (subject to the other tests) imply an increase in debt (and therefore may demonstrate an increase in externalising risk. Of course, such a result may merely imply that the LLP in question has taken advantage of the ability to collateralise its assets in a way which was previously unavailable to the business form, without otherwise altering their risk profile. However, as the empirical econometric datasets demonstrate correlations between lending and security, this would appear to be less likely);

ii. what percentage of the sample granted such security within the first year? This would show the **immediacy** of any of the change above: if all those who granted security did so within the first year, then this would imply that any such change would be upon the adoption of the limited liability form rather than over time;

iii. what percentage of the sample remain with security outstanding? This would show the **permanency** of any change in paragraph 3.b.i. above – if all who have granted security remain with security outstanding then this implies that the any effect of the above is long term, whereas if all security has been released this would imply any change noted above would be temporary.

This raw data is shown in Table 2.

Profit and Loss Test

[30] See J Hardman, *A Practical Guide to Granting Corporate Security in Scotland* (W Green 2018) paras 6.05 – 6.07.

[31] R Haslemann, K Pistor, and V Vig, 'How Law Affects Lending' (2010) 23(2) The Review of Financial Studies 549

We can use the profit and loss accounts published to find evidence of exportation of risk. Partners drawings are those amounts removed from the business.[32] Accordingly, we should examine whether they have increased over time or are at an unsustainable level. However, drawings do not stand in isolation – it is common sense that if the LLP receives more money in then it will have more to be able to pay out. Accordingly, we should factor turnover into the profit and loss analysis. If we divide drawings by turnover, then we can examine the amount that the partners are withdrawing relative to the amount received. This approach would show, however, the same result for a partnership with no employed staff as it would for a partnership with 100 employed staff, whereas the risk profile would be very different for both.[33] Accordingly, these costs need to be taken into account. Our methodology for the profit and loss test is therefore to divide drawings by turnover (see Table 3.1 for Turnover) net of operating costs (see Table 3.2 for Operating Costs), by deducting operating costs from turnover (see Table 3.4 for Turnover net of Operating costs) and then dividing drawings (see Table 3.3 for Drawings) by the same (see Table 3.5 for Drawings divided by the result of turnover minus operating Costs). If this result is over 1, then it shows in rough terms that the partners are withdrawing more from the LLP than the LLP made in that year. There may be very good reasons for this, such as expectation of future profit, or accumulated prior profit, but nonetheless, consistently withdrawing more from the LLP than it makes is a measure that risk is being externalised to third parties. We will calculate this on a cumulative basis, so that the results will represent a cumulative result over time. Accordingly, any result over 1 in any year means that more has been withdrawn than made over the entire sample period, rather than only for that year. As a general rule therefore, the later in the sample period that a 1 appears, the more significant it is.

Balance Sheet Test

We can also use the balance sheet published to find evidence of exportation of risk. The main metric should be the amount of liability incurred by the LLP – increase in this over time implies exportation of risk. Within the categories of liability, longer term liabilities imply a more systemic exportation of risk,[34] which implies that long term liabilities should be examined. However, overdrafts or short-term credit facilities that are renewed annually also represent exportation of risk in the same way as fixed liabilities. Therefore, current liabilities cannot be ignored, and total liabilities requires to be the metric (see Table 4.1 for Total Liabilities). Liabilities increasing in line with other assets does not represent exportation of risk, and so it is necessary to factor the assets of the company into question.

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[32] R I'Anson Banks (ed), *Lindley & Banks on Partnership* (20th edn, Sweet & Maxwell 2017) para 10.95. Technically drawings are those amounts withdrawn prior to an ascertainable profit share, with anything else being a withdrawal of profit to which the partner was entitled (para 10.96). We will not draw such a distinction here, and "drawings" will refer to the amounts of profit withdrawn from the business by the partners whether in anticipation of declared profit or after its declaration.

[33] As the latter has more fixed costs, therefore needs to generate more income in order to enable the partners to have any profit.

[34] As fixed liabilities imply structural leverage, whereas current liabilities imply working capital variations

As law firms rely on generating and realising work in progress as their main source of profit, their fixed assets are not only irrelevant but would mask the underlying performance of the business.[35] Therefore, we will only factor current assets in to the test (see Table 4.2 for Current Assets). We will do this by dividing the total liabilities by the current assets (see Table 4.3 for Total Liabilities divided by Current Assets). This figure itself is irrelevant, and impossible to compare with other LLPs, but an **increase** in it over time implies increased exportation of risk to creditors. When filing their first accounts, LLPs generally provide a set of "year zero" accounts which show the balance sheet (and occasionally the profit and loss account) at the end of the period leading up to the start of the relevant period. This therefore shows us the balance sheet for the firm on, normally, its last day as an unincorporated partnership. Accordingly, by dividing each subsequent year's results by the "year zero" result and multiplying by 100, we can compare the percentage changes over time (see Table 4.4). Whilst the base figures produced by our calculation cannot be used to compare law firms, we can compare whether their liabilities divided by their current assets increases over time or not. We will therefore examine this to see whether LLPs have systematically increased their liabilities over time following the adoption of the LLP form. If they have done so, it shows a systemic exportation of risk caused by adoption of the limited liability form.

Financial Information Test

LLPs have 9 months after their yearend date to file their annual accounts.[36] It is well documented that delay in publishing financial information is associated with poor financial performance.[37] Whilst there are many reasons for delaying publication of financial information, it could be argued that a generic delay in publishing financial information is associated with an exportation of risk: delays in making information publicly available can be seen as delays in providing indications of poor financial performance. This is mostly seen in the context of capital markets and traded securities but also applies to publicly available information published by private business vehicles.[38] Accordingly we will test two elements:

i. Average length of time to file accounts (see Table 1 for the dates that accounts are made up to, Table 5.1 for the date that such accounts are filed on and Table 5.2 for the associated lag between the two dates); and

ii. Any discernible trend in the length of time to file accounts over time.

Results

[35] Appreciating real estate would provide an "on paper" strengthening of the LLP's balance sheet that could mask the reduction in performance elsewhere.

[36] Limited Liability Partnerships (Accounts and Audit) (Application of Companies Act 2006) Regulations 2008 (SI 2008/1911) Reg 17.

[37] SP Kothari, S Shu and PD Wysocki, 'Do Managers Withhold Bad News?' (2009) 47(1) Journal of Accounting Research 241.

[38] A Brunner and J P Krahnen, 'Multiple Lenders and Corporate Distress: Evidence on Debt Restructuring' (2008) 75(2) The Review of Economic Studies 415.

Charges Test

Red

100% of the Reds granted floating charges, and none of the Reds granted security that is available to be granted by unincorporated partnerships. Whilst only 33.3% of the Reds granted a floating charge within their first year, 100% of the Reds had floating charges outstanding at the time they entered into administration.

Therefore, for the Red group, there is a discernible indication of exportation of risk on this metric. The results imply that this is not an immediate change, but that it is a permanent change.

Yellow

20% of the Yellows granted a floating charge, and none of the Yellows granted security that is available to be granted by unincorporated partnerships. None of the Yellows granted a security within their first year of incorporation, but the one that did remains outstanding as a the end of the sample period.

Therefore, for the Yellow group, there is a minimal indication of exportation of risk under this metric.

Unshaded

70% of the Unshadeds granted floating charges, and none of them granted security that is available to be granted by unincorporated partnerships. 50% of the Unshadeds (i.e. 71% of the Unshadeds who at some stage granted security) granted a floating charge within the first year of their incorporation, and 40% of the Unshadeds (i.e. 57% of the Unshadeds who at some stage granted security) still have security outstanding on the public record as at the end of the test period.

Therefore, for the Unshadeds, there is evidence of an implication of exportation of risk, and that it is both immediate and permanent.

Total

In aggregate, 61% of our sample group granted security that was not available to unincorporated partnerships, and none granted security that would have been available to unincorporated partnerships. 33.3% of our sample group (i.e 54.5% of those that at some stage granted security) granted security within the first year, and 55.5% (i.e. 90.9% of those who at some stages granted security) still have security outstanding on the public record as at the end of the test period.

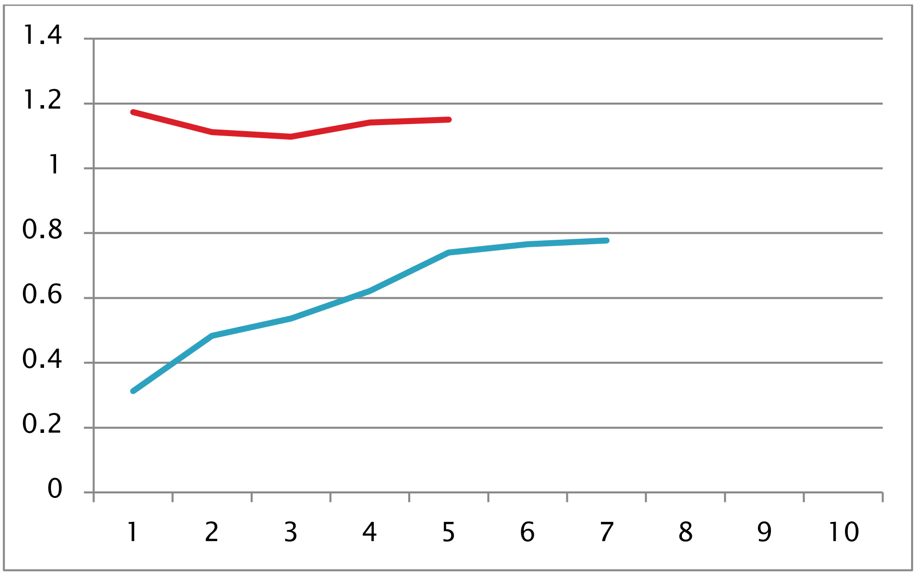
Therefore, overall we have some evidence of the implication of exportation of risk to creditors by LLPs by the use of a security instrument which is not available to unincorporated partnerships. This seems to be a permanent change, and there is some evidence that it is an immediate change.

Accordingly, the charges test provides evidence that the use of the limited liability form encourages the exportation of risk to creditors, and that this is sometimes an immediate exportation and normally a permanent exportation. Interestingly, the Reds seem to have exported the most risk according to this metric, followed by the Unshadeds, with the Yellows having exported the least.

Profit and Loss Test

Red

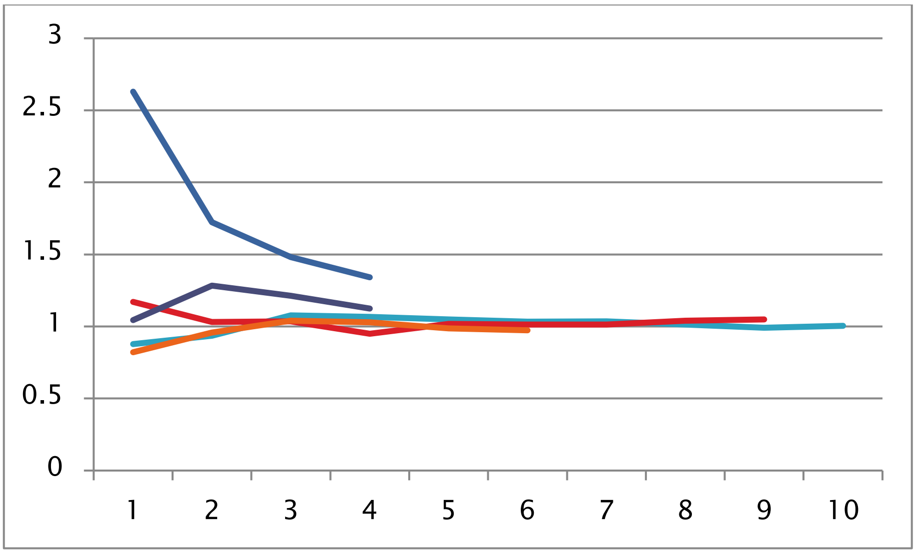
Of the Red sample group, one firm did not publish details of aggregate drawings after the first annual accounts and so had to be excluded.[39] For the other two one LLP was consistently above 1, and therefore appears to have withdrawn more than the LLP made. The other rose towards 1 such that when plotted the data looks as follows:



Within the Red group, there is limited evidence of exportation of risk by way of partners systematically withdrawing more than the partnership is making.

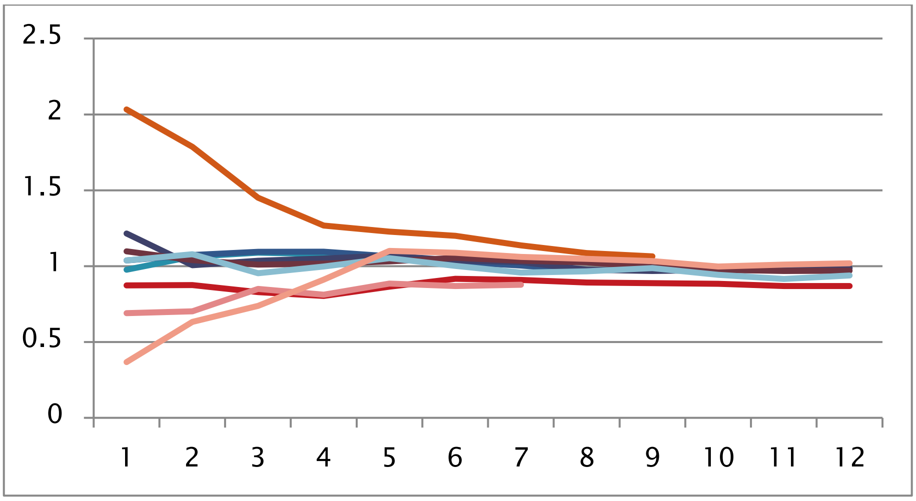
[39] It should, however, be noted that the first set of annual accounts for the excluded Red showed 0.48, which is clearly below 1.

Yellow



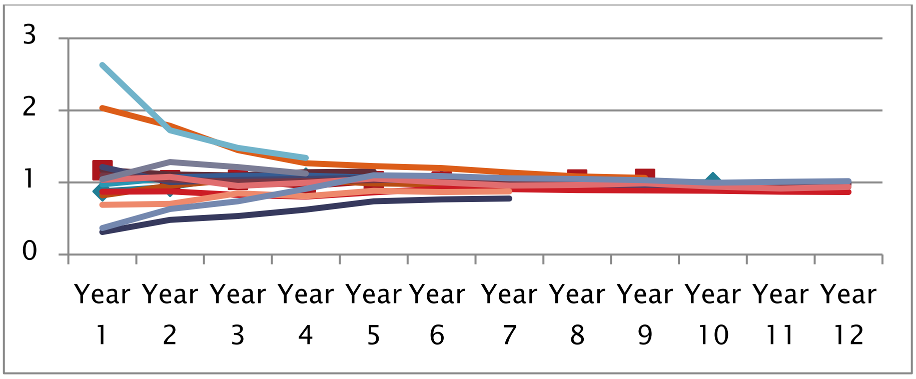
For the Yellow group, we see a general convergence to just below 1. There is no evidence of exportation of risk by way of partners systematically withdrawing more than the partnership is making.

Unshaded



For the Unshaded group there is, once more, no evidence of partners systematically withdrawing more than the partnership is making.

Total

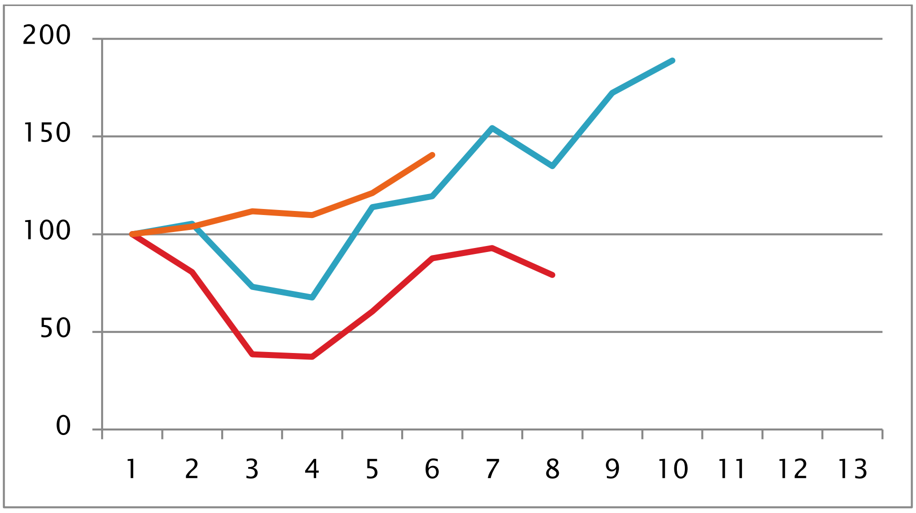


Overall, we see convergence towards just below 1. This metric therefore provides no evidence of a systemic exportation of risk.

Balance Sheet Test

Red

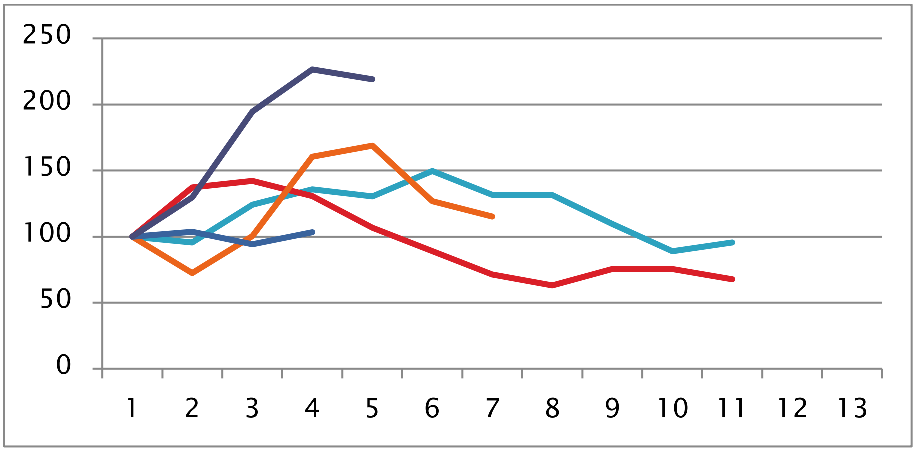
Of the Red sample group, two of the three significantly increased their liabilities over current assets over time. The third temporarily reduced before increasing again:



This provides limited evidence of the exportation of risk through the balance sheet test. Unfortunately, the accounts of the LLPs in question do not allow secured and unsecured liabilities to be disaggregated.

<u>Yellow</u>

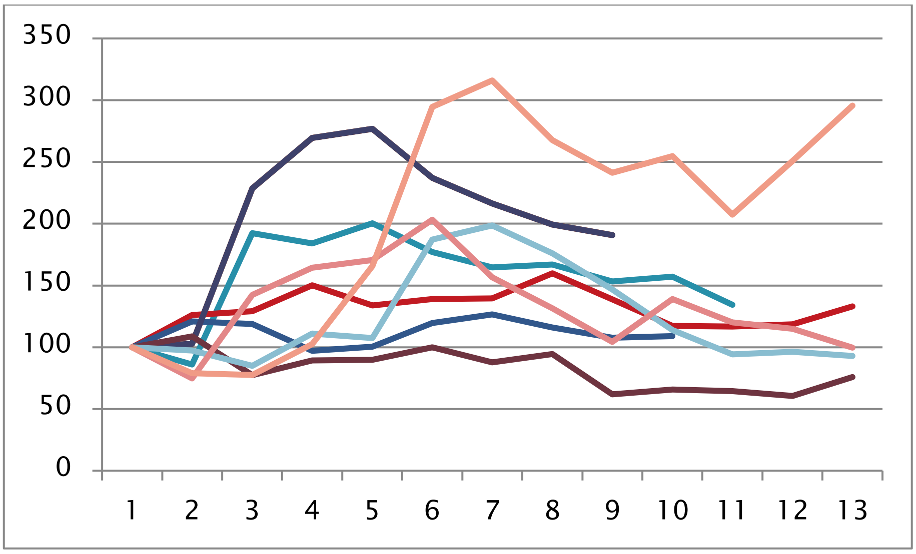
The majority of the Yellow sample group increased their liabilities over current assets over time:



However, this is not uniform enough to provide evidence of the exportation of risk through the balance sheet test.

<u>Unshaded</u>

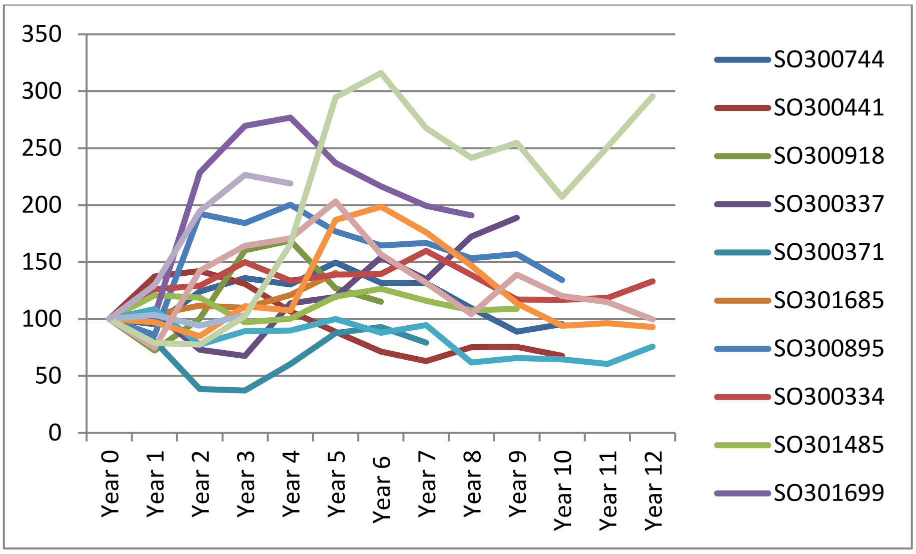
A significant majority of the Unshaded sample group increased their liabilities over current assets over time:



This provides evidence of the exportation of risk by way of the balance sheet test.

Total

Overall, there is a mixed picture of the sample group's results of the balance sheet test:

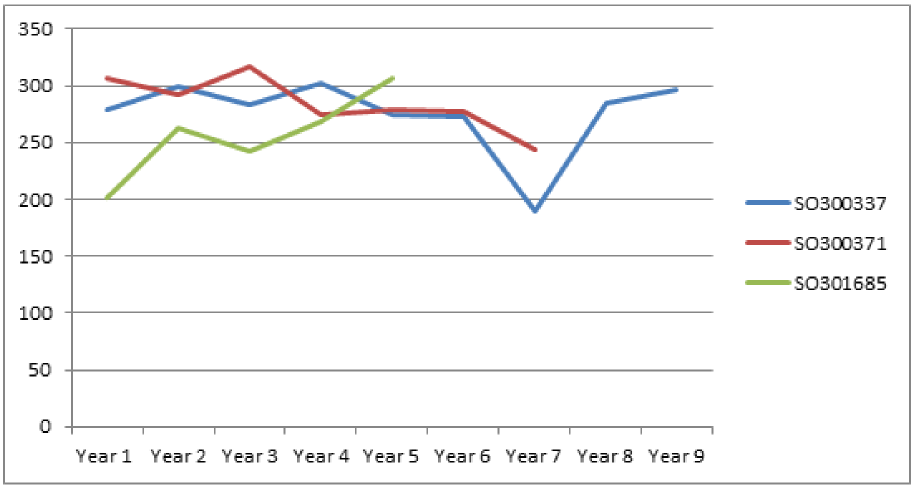


Whilst some LLPs significantly increased over time, others did not. Interestingly and once more, the Reds seem to have exported most risk through this metric, the Unshaded seem to have exported the second most risk, and the Yellows seem to have exported the least risk.

Financial Information Test

<u>Red</u>

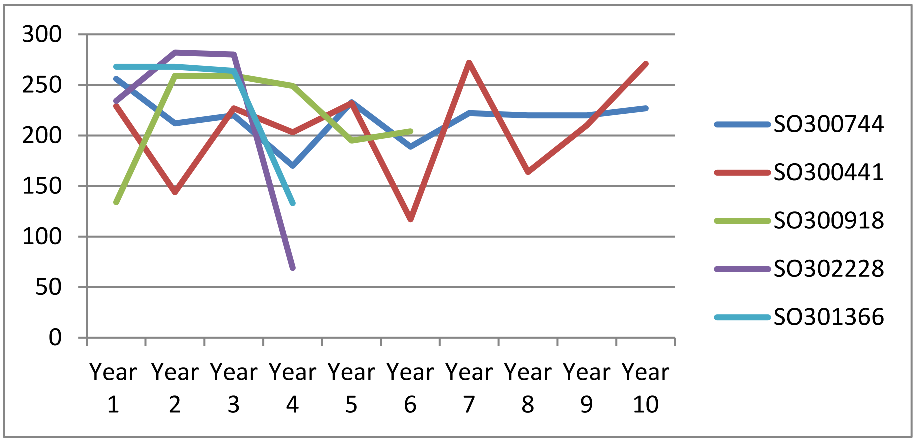
The Red sample group took an average of 274 days to file their annual accounts. When this is plotted over time, it becomes:



As can be seen, there is no discernible increase across the whole sample group over time.

<u>Yellow</u>

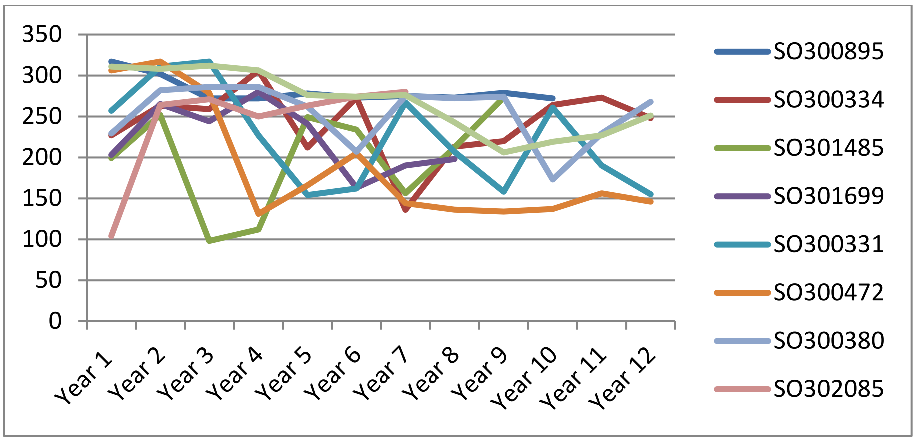
The Yellow sample group took an average of 216 days to file their annual accounts over the test period, considerably shorter than the red group. When this is plotted over time, it becomes:



Once more, this shows no discernible increase over time.

<u>Unshaded</u>

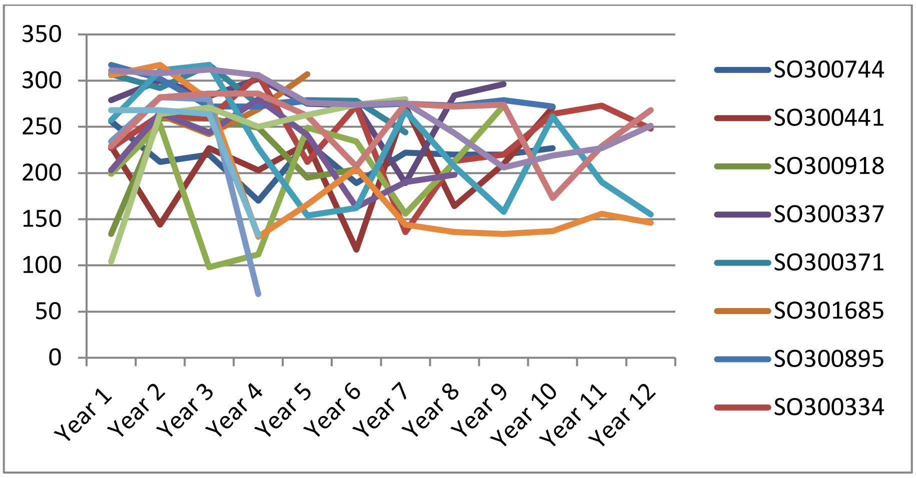
The Unshaded sample group took an average of 235 days to file their annual accounts over the test period, between the Red and the Yellow time differences. Plotted over time this becomes:



As can be seen, from year 1 to year 2, the majority of sample LLPs increased the length of time it took to file their accounts. However, after then different LLPs reacted differently. It is clear, however, that overtime all LLPs in this sample group converged to having less range in the time it took them to file their accounts.

<u>Total</u>

The overall average is 236 days for those in the sample group to file their accounts. When plotted:



Once again, there is no discernible increase in time taken to file accounts, but there is a general convergence over time.

Accordingly, we are not able to say that there is either an immediate or prolonged delay in publishing accounts associated with moving to an LLP status. However, within the sample groups there is a considerable variation in the timing it takes to file accounts – the Red sample were considerably higher than the Unshaded sample, who in turn were higher than the Yellow sample. Accordingly, there may not have been a general increase in delay, but LLPs with different ultimate outcomes have different average delays: those that entered insolvency process have the longest lag in publishing financial information, with those which were the junior partner in a merger having the shortest.

Conclusion

Our analysis shows that on the charges test and the financial publication tests, those LLPs which entered into insolvency exported most risk, followed by those who were not taken over and with those who were taken over exporting the least risk.

The profit and loss test was inconclusive, and the balance sheet test showed those who entered into insolvency and those who were not taken over also seeming to export more risk than those who were taken over. This seems less linked to the legal form, and more to management decisions which could have been taken regardless of legal form, although how far these management decisions were influenced by the transition of legal form is unclear. The difference in results between different categories of firm seem to imply that any such influence is not universal. The financial tests resulted in inconclusive outcomes. It may be that alterations to the metrics produce clearer results: this is a matter for further research.

The results allow a few general conclusions:

1. The metrics do not show that moving to LLP status results in, or is correlated with, a systemic exportation of risk to creditors;
2. Those entities that became insolvent exported the most risk, but it is not possible to make a general statement from this sample group about any exportation of risk caused by limited liability or the ability to grant additional security that is connected with it. This therefore produces the rather unsurprising result that those companies which entered into insolvency process exported most risk to creditors; but
3. Generally, those that were the junior partner in a merger exported the least risk through the metrics which showed clear results. This provides a counter-narrative to the negative story of Scottish high streets. The main advantage of limited liability was, according to John Stuart Mill, that it makes equity investments fungible: the value of one equity holder’s investment (and its safety) no longer depended on the financial strength of their co-investors. In

turn, this helped fuel global commerce.[40] It is therefore possible that, far from being taken over because of the failure of their business, our Yellow group are simply taking advantage of the fungibility of the new corporate form: the results indicate that the Scottish legal market did not collapse; it globalised.

Limitations

There are many limitations for the analysis set out in this paper.

Firstly, there is no control group. As unlimited partnerships do not have to file accounts, there is no comparison to our sample to test whether the effects seen apply only to LLPs or to the Scottish market generally. Secondly, the sample group is small. This means that outliers affect the group more, meaning that our results, whilst indicative, are not statistically significant. Thirdly, the recent collapse of Carillion shows that there are many ways to mask poor financial performance in published accounts – from a laxer "bad debtors" policy to off-balance sheet financing.[41] Fourthly at best, the analysis could only ever show correlation and not causation. As a result, even if any discernible exportation of risk could be identified, we could never confirm that it was caused by limited liability as the data contains neither a complex enough regression nor data on the changes between secured and unsecured creditors. Fifthly, the test period is effectively from 2004 to date, which coincided with a giant crash for Scottish financial services, including Scottish law firms, which could skew the results and mean that any changes are nothing to do with limited liability at all.[42] Sixthly, the rise of personal guarantees and member liability[43] may mean that LLPs do not quite enjoy the pure limited liability presumed by this article. Seventhly, the statistical analysis undertaken is incredibly simple and so cannot be said to be statistically robust in any manner.[44] These serve to undermine our normative conclusions and reduce both the validity of our quantitative outcomes and the statistical rigour of them.

BUT…..

Now that Companies House data is publicly and freely available through its Beta Service, hopefully this form of analysis can be brought into examination of the law of those vehicles who publish accounts. Originality in legal academic research is difficult

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[40] J S Mill, *Principles of Political Economy* (first published 1848, Longmans, Green, Reader and Dyer1871) and the analysis in D Loftus 'Capital and Community: Limited Liability and Attempts to Democratize the Market in mind-Nineteenth-Century England' (2002) 45(1) Victorian Studies 93. In turn, this helps diversification of portfolios – See H G Manne 'Our Two Corporation Systems: Law and Economics' (1967) 53(2) Virginia Law Review 259.

[41] See "The Collapse of Carillion", House of Commons Briefing Paper No 8206, 14 March 2018.

[42] P S Hodge, 'Does Scotland Need its own Commercial Law?" (2015) 19(3) Edinburgh Law Review 299.

[43] See T Vollans, 'The Limited Liability Partnerships Act 2000' [2000] Coventry Law Journal 56.

[44] It has been argued that legal empiricism does not need to maintain the same standards as other social sciences as the professional practice element means that some casual empiricism can be useful to given an impression of the operation of laws – see L LoPucki, 'Disciplining Legal Scholarship' (2016-16) 90 Tulane Law Review 1, 14, however this is a recent development which can be contrasted with a tradition of requiring legal empiricism to follow the same statistical vigour as other disciplines – see L Epstein and G King, 'The Rules of Inference' [2002] 69 University of Chicago Law Review 1.

and adopting more quantitative and scientific methods are a way to achieve it.[45] The gateway to empirical analysis of LLPs and companies is open: even if this does not show us any specific answers, new quantitative methods of analysis exist for us to establish what is actually happening in the corporate market place: we should take advantage of it.

[45] M Siems, 'Legal Originality' (2008) 28(1) Oxford Journal of Legal Studies 147.

Appendix 1

Table 1: Firm Accounts Details

Name	Registered Number	Asset Transfer Date	Year 1 End	Year 2 End	Year 3 End	Year 4 End	Year 5 End	Year 6 End	Year 7 End	Year 8 End	Year 9 End	Year 10 End	Year 11 End	Year 12 End
Maclay, Murray and Spens LLP	SO300744	30 June 2006	31 May 2007	31 May 2008	31 May 2009	31 May 2010	31 May 2011	31 May 2012	31 May 2013	31 May 2014	31 May 2015	31 May 2016		
Dundas and Wilson CS LLP[46]	SO300441	1 November 2004	30 April 2005[47]	30 April 2006	30 April 2007	30 April 2008	30 April 2009	30 April 2010	30 April 2011	30 April 2012	30 April 2013	30 April 2014[48]		
McGrigors LLP	SO300918	1 October 2006	30 Septemb er 2007	30 September 2008	30 September 2009	30 September 2010	30 September 2011	30 April 2012[49]						

[46] Dundas and Wilson CS' English practice operated out of a separate, English LLP. In Year 8, both LLPs established a joint venture for joint services and all staff were transferred there with costs subsequently apportioned.
[47] First year's accounts abbreviated.
[48] Dundas and Wilson CS merged with CMS Camerson McKenna LLP on 1 May 2014.
[49] Accounting period shortened, and on 1 May 2012 McGrigors merged with Pinsent Masons LLP.

Name	Registered Number	Asset Transfer Date	Year 1 End	Year 2 End	Year 3 End	Year 4 End	Year 5 End	Year 6 End	Year 7 End	Year 8 End	Year 9 End	Year 10 End	Year 11 End	Year 12 End
Tods Murray LLP	SO300337	1 May 2004[50]	31 March 2005	31 March 2006	31 March 2007	31 March 2008	31 March 2009	31 March 2010	31 March 2011	31 March 2012	31 March 2013[51]			
Semple Fraser LLP	SO300371	1 June 2004	30 April 2005	30 April 2006	30 April 2007[52]	30 April 2008	30 April 2009	30 April 2010	30 April 2011[53]					
McClure Naismith LLP	SO301685	1 August 2008	30 April 2009	30 April 2010	30 April 2011	30 April 2012	30 April 2013[54]							
Shepherd and Wedderburn LLP	SO300895	6 November 2006	30 April 2007	30 April 2008	30 April 2009	30 April 2010	30 April 2011	30 April 2012	30 April 2013	30 April 2014	30 April 2015	30 April 2016		
Brodies LLP	SO300334	1 May 2004	30 April 2005	30 April 2006	30 April 2007	30 April 2008	30 April 2009	30 April 2010	30 April 2011	30 April 2012	30 April 2013	30 April 2014	30 April 2015	30 April 2016

[50] Tods Murray's first accounting periods are difficult to compare: Year 0 is 16 months and Year 1 is 11 months' trading.
[51] Tods Murray entered administration on 3 October 2014 and the assets of the firm were bought by Shepherd and Wedderburn LLP.
[52] Semple Fraser in year 3 stopped counting cash balances in client accounts as assets and amounts due back to clients as corresponding liabilities. Accordingly, these have been removed from previous years' accounts.
[53] Semple Fraser entered administration on 8 March 2013.
[54] McClure Naismith entered insolvency on 28 August 2015.

Name	Registered Number	Asset Transfer Date	Year 1 End	Year 2 End	Year 3 End	Year 4 End	Year 5 End	Year 6 End	Year 7 End	Year 8 End	Year 9 End	Year 10 End	Year 11 End	Year 12 End
Anderson Stratherrn LLP	SO301485	7 August 2007[55]	31 August 2008	31 August 2009	31 August 2010	31 August 2011[56]	31 August 2012	31 August 2013	31 August 2014	31 August 2015	31 August 2016			
MacRobert s LLP	SO301699	1 May 2008	30 April 2009	30 April 2010	30 April 2011	30 April 2012	30 April 2013	30 April 2014	30 April 2015	30 April 2016				
Harper MacLeod LLP	SO300331	1 September 2004	31 March 2005	31 March 2006	31 March 2007	31 March 2008	31 March 2009	31 March 2010	31 March 2011	31 March 2012	31 March 2013	31 March 2014	31 March 2015	31 March 2016
Morton Fraser LLP	SO300472	1 May 2005	30 April 2006	30 April 2007	30 April 2008	30 April 2009	30 April 2010	30 April 2011	30 April 2012	30 April 2013	30 April 2014	30 April 2015	30 April 2016	30 April 2017
Paull & Williamson s LLP	SO302228	6 April 2009	5 April 2010	5 April 2011	5 April 2012	5 April 2013[57]								
Burness LLP[58]	SO300380	1 August 2004	31 July 2005	31 July 2006	31 July 2007	31 July 2008	31 July 2009	31 July 2010	31 July 2011	31 July 2012	31 July 2013	31 July 2014	31 July 2015	31 July 2016

[55] Anderson Strathern's accounts do not detail the date of the asset transfer, only the date of incorporation of the LLP
[56] From this year onwards, Anderson Strathern started accounting for the LLP and the Group. Where any LLP has done this, the Group figures have been utilised.
[57] Assets of Paull & Williamsons transferred to Burness LLP on 1 December 2012
[58] Changed its name to Burness Paull & Williamsons LLP on 30 November 2012, and to Burness Paull LLP on 2 August 2013.

Name	Registered Number	Asset Transfer Date	Year 1 End	Year 2 End	Year 3 End	Year 4 End	Year 5 End	Year 6 End	Year 7 End	Year 8 End	Year 9 End	Year 10 End	Year 11 End	Year 12 End
Digby Brown LLP	SO302085	1 February 2009	31 March 2010[59]	31 March 20111	31 March 2012	31 March 2013	31 March 2014	31 March 2015	31 March 2016					
Thorntons Law LLP	SO300381	1 December 2004[60]	31 May 2005	31 May 2006	31 May 2007	31 May 2008	31 May 2009	31 May 2010	31 May 2011	31 May 2012	31 May 2013	31 May 2014	31 May 2015	31 May 2016
Biggart Baillie LLP[61]	SO301366	1 July 2007	30 June 2008	30 June 2009	30 June 2010	30 June 2011[62]								
BTO Solicitors LLP	SO305583	1 April 2016	31 March 2017											

[59] Digby Brown's first accounts contain no "Year 0".
[60] Thorntons' Year 0 is six months.
[61] Renamed Moreloch LLP on 5 February 2013.
[62] Biggart Baillie merged with DWF on 1 July 2012.

Key

LLP remains the key vehicle (either due to lack of merger activity or due to being the dominant partner in a merger)
LLP entered administration
LLP was subsumed as part of merger activity but without insolvency
No records available for this period

Appendix 2

Table 2: Charges as at 30 September 2017

Registered Number	Asset Transfer Date	Charges details	Charge Created Within 1 Year of Asset Transfer?	Charges Outstanding?
SO300744	30 June 2006	No charges registered	No	No
SO300441	1 November 2004	No charges registered	No	No
SO300918	1 October 2006	No charges registered	No	No
SO300337	1 May 2004	Floating Charge created 2009 outstanding at time of administration	No	Yes
SO300371	1 June 2004	Floating Charge created 2008 outstanding at time of administration	No	Yes
SO301685	1 August 2008	Floating Charge created 2008 outstanding at time of administration	Yes	Yes
SO300895	6 November 2006	Floating charges granted to Bank of Scotland (granted in 2008, satisfied 2014) and Royal Bank of Scotland (granted in 2009 satisfied 2014). None currently outstanding	No	No
SO300334	1 May 2004	Floating Charge granted 27 September 2017 in favour of a security trustee for amounts due to members	No	Yes

Registered Number	Asset Transfer Date	Charges details	Charge Created Within 1 Year of Asset Transfer?	Charges Outstanding?
SO301485	7 August 2007	Floating Charge created 2007	Yes	Yes
SO301699	1 May 2008	No charges registered	No	No
SO300331	1 September 2004	Floating Charge granted in favour of Lloyds TSB Bank plc (granted 2004), Clydesdale Bank plc (granted 2005) and HSBC Bank plc (granted 2009 and satisfied 2017)	Yes	Yes
SO300472	1 May 2005	No charges registered	No	No
SO302228	6 April 2009	No charges registered	No	No
SO300380	1 August 2004	No charges registered	No	No
SO302085	1 February 2009	Floating Charge granted 2009	Yes	Yes
SO300381	1 December 2004	Floating Charge granted 2004	Yes	Yes
SO301366	1 July 2007	Floating Charge granted 2009	No	Yes
SO 305583	1 April 2016	Floating Charge granted 2016	Yes	Yes

Appendix 3: Profit & Loss Test

Table 3.1: Turnover

Registered Number	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12
SO300744	48569660	55122660	60797000	54835000	52274000	47270000	46869000	40765000	43291000	43542000	44727000		
SO300441	37579847	41066375	44731246	45233438	48994606	42865576	38395401	37649473	33936524	30962505	31166295		
SO300918	53751000	60479000	62042000	59515000	65635000	71195000	43462000						
SO300337	19282071	16702628	Gross Profit Only	Gross Profit Only	Gross Profit Only	15706229[63]	12206131	13058309	11784272	12515271			
SO300371	9071538	11939618[64]	12882115	15420070	15055892	12099367	11062424	12220364					
SO301685	15339700	14032046	13481800	13054487	13112031	12017465							
SO300895	34830000	40233000	42131000	38943000	34929000	37284000	36570000	35864000	38260000	48046000	52965000		
SO300334	16553000	18335000	20939000	30007000	37024000	39088000	35776000	36850000	42793000	46013000	52104000	57944000	65122000

[63] Subsequently restated – restated figure used.
[64] Subsequently restated – restated figure used.

Registered Number	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12
SO301485	18444004	20784072	19727774	20399957	21189355	22822673	21644506	21467541	21735053	21030645			
SO301699	18786445	20128529	19644902	17949358	17318250	17508401	17594283	17959202	19765000				
SO300331	7127017	7907281	10431144	12355753	13738146[65]	14121849	15230676	16823696	19182230	21034090	20587353	22089641	25983208
SO300472	10938141	12141061	13559736	15615380	16301206	15391507	14680826	14110467	13634572	16862924	18142507	19372567	19856350
SO302228	13668000	12832000	13314000	13249000	9756000								
SO300380	14736670	16040740	18167380	22471163	21799344	19611557	21217446	23357785	24330292	33874242	46286654	51263663	53316911
SO302085		13536454	16542248	17848933	19874852	23356667	24607394	27299776					
SO300381	5993345	7671219[66]	13408728	15423905	15724717	13797222	12803607[67]	12878587	13199201	14382439	16277661	19989770	22828162
SO301366	18943123	20697715	17401623	16189970	16153315								
SO305583		18916333											

[65] Subsequently restated – restated figure used.
[66] Subsequently restated – restated figure used
[67] Subsequently restated – restated figure used.

Table 3.2: Operating Costs

Registered Number	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12
SO300744	34331024	37235654	42343000	40691000	37196000	34295000	32533000	29915000	29110000	28970000	31690000		
SO300441	24685677	26882259	27500320	28687522	26706625	26104369	21548279	21023719	23461974	22632686	22568029		
SO300918	38618800	41376000	43528000	43587000 [68]	48474000	50644000	30541000						
SO300337	13171484	10865951	Gross Profit only	Gross Profit Only	Gross Profit Only	11298973 [69]	10171151	9982623	9537025	10124285			
SO300371	5623652	6437895	7243242	8016150	9577145	8929725	7524619	8482625					
SO301685	10554121	10443294	9472485	9641577	10136069	9276623							
SO300895	24175000	27550000	28592000	27534000	23617000	24234000	23649000	22820000	23943000	30100000	31549000		
SO300334	9801000	11579000	12531000	18407000	22072000	24827000	22980000	22368000	25154000	26756000	28391000	30895000	34250000
SO301485	12263482	14511676	14708284	13540911	13906630	15405269	14990389	14033350	14289359	14497045			
SO301699	11777316	12766869	12779725	11927453	11718343	11345101	11609518	11700667	12803000				

[68] Subsequently restated – restated figure used.
[69] Subsequently restated – restated figure used.

Registered Number	**Year 0**	**Year 1**	**Year 2**	**Year 3**	**Year 4**	**Year 5**	**Year 6**	**Year 7**	**Year 8**	**Year 9**	**Year 10**	**Year 11**	**Year 12**
SO300331	4351656	5201991	6351411	7904589	8816249	9650582	10379791	11968518	12906285	13406498	13095558	14035191	16618261
SO300472	7987721	9045463	9656420	11139501	11977734	11090493	11062498	10194614	9830904	11521522	12032324	12735813	13212595
SO302228	7401000	7462000	6994000	7347000	5176000								
SO300380	9246087	9302742	10713138	12101573	12444977	13035807	12063082	13110495	13508857	20093723	25470355	28249031[70]	30830596
SO302085		9544320	9826428	11680859	13007954	14319689	16179879	18915052					
SO300381	3863519	4431776	9373398[71]	10970062	12624124	12777113	10718740[72]	10662439	10643267	11745064	12315470	15952894	18514983
SO301366	11529099	13375722	12919125	11170787	10488137								
SO305583		11080967											

[70] Subsequently restated – restated figure used.
[71] Subsequently restated – restated figure used.
[72] Subsequently restated – restated figure used.

Table 3.3: Drawings

Registered Number	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12
SO300744	N/A	15700702	18335000	20339000	15597000	12352000	13564000	11629000	11990000	11693000	15057000		
SO300441	N/A	16603287	15805647	17270873	17022189	21803590	16803787	16878224	13933188	9928981	10035167		
SO300918	N/A	15688000	20354000	19653000	17129000	17239000	11351000						
SO300337	N/A	2854859	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A			
SO300371	N/A	1719254	3657891	4569153	4982674	5200784	3417398	3242451					
SO301685	N/A	4211106	4234018	3639834	3881939	3281172							
SO300895	N/A	12368000	15488000	13105000	11899000	11682000	12480000	14509000	13875000	13931000	17817000		
SO300334	N/A	5900000	7381000	8898000	11331000	14842000	14666000	12545000	14494000	16624000	20427000	21513000	26787000
SO301485	5398567	7350155	7430910	6144783	5924170	8034858	7110533	5969942	5731620	5731620			
SO301699	N/A	7631066	7644573	6876405	6150648	5812533	4962367	5331709	5332000				
SO300331	N/A	3286484	3539888	4800714	5326872	5092236	4365683	4763600	4541200	7096710	7583760	7753761	10137748
SO300472	N/A	3396904	3879953	4306936	4477195	4678120	4278161	3587714	3595943	4348191	5275191	6100072	6540614
SO302228	8302000	5819000	6018000	5917000	3681000								

Registered Number	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12
SO300380	N/A	6993292	8309358	8123254	10406625	8785972	7095930	7660803	10846628	15140580	15862880	18222583	23980714
SO302085		2753979	4753830	6824192	4928459	9743430	6751775	7695932					
SO300381	N/A	1189992	3405320	4068982	4830608	3941610	2061991	1857004	2459592	2373008	3031408	4457116	4679622
SO301366	N/A	7646265	7504716	5275894	4881031								
SO305583		7904287											

Table 3.4: Turnover minus Operating Costs

Registered Number	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12
SO300744	14238636	17887006	18454000	14144000	15078000	12975000	14336000	10850000	14181000	14572000	13037000		
SO300441	12894170	14184116	17230926	16545916	22287981	16761207	16847122	16625754	10474550	8329819	8598266		
SO300918	15132200	19103000	18514000	15928000	17161000	20551000	12921000						
SO300337	6110587	5836677	N/A!	N/A	N/A	4407256	2034980	3075686	2247247	2390986			
SO300371	3447886	5501723	5638873	7403920	5478747	3169642	3537805	3737739					
SO301685	4785579	3588752	4009315	3412910	2975962	2740842							
SO300895	10655000	12683000	13539000	11409000	11312000	13050000	12921000	13044000	14317000	17946000	21416000		
SO300334	6752000	6756000	8408000	11600000	14952000	14261000	12796000	14482000	17639000	19257000	23713000	27049000	30872000
SO301485	6180522	6272396	5019490	6859046	7282725	7417404	6654117	7434191	7445694	6533600			
SO301699	7009129	7361660	6865177	6021905	5599907	6163300	5984765	6258535	6962000				
SO300331	2775361	2705290	4079733	4451164	4921897	4471267	4850885	4855178	6275945	7627592	7491795	8054450	9364947
SO300472	2950420	3095598	3903316	4475879	4323472	4301014	3618328	3915853	3803668	5341402	6110183	6636754	6643755
SO302228	6267000	5370000	6320000	5902000	4580000								

Registered Number	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12
SO300380	5490583	6737998	7454242	10369590	9354367	6575750	9154364	10247290	10821435	13780519	20816299	23014632	22486315
SO302085	[redacted]	3992134	6715820	6168074	6866898	9036978	8427515	8384724					
SO300381	2129826	3239443	4035330	4453843	3100593	1020109	2084867	2216148	2555934	2637375	3962191	4036876	4313179
SO301366	7414024	7321993	4482498	5019183	5665178								
SO305583	[redacted]												

Table 3.5: Drawings divided by (Turnover minus Operating Costs)

Registered Number	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12
SO300744	N/A	0.877771	0.993552	1.437995	1.034421	0.951985	0.94615	1.071797	0.845497	0.802429	1.154944		
SO300441	N/A	1.170555	0.917284	1.043815	0.763738	1.300837	0.997428	1.015185	1.330194	1.19198	1.167115		
SO300918	N/A	0.821232	1.099384	1.233865	0.998135	0.83884	0.878492						
SO300337	N/A	0.489124	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A			
SO300371	N/A	0.312494	0.648692	0.617126	0.909455	1.640811	0.965966	0.86749					
SO301685	N/A	1.173418	1.056045	1.06649	1.304432	1.19714							
SO300895	N/A	0.975164	1.143955	1.148655	1.051892	0.895172	0.96587	1.112312	0.969128	0.776273	0.831948		
SO300334	N/A	0.873298	0.877854	0.767069	0.757825	1.04074	1.146139	0.866248	0.821702	0.86327	0.861426	0.795334	0.867679
SO301485	0.873481	1.171826	1.480411	0.895866	0.813455	1.083244	1.068592	0.803039	0.76979	0.877253			
SO301699	N/A	1.036596	1.113529	1.141899	1.098348	0.943088	0.829167	0.85191	0.765872				
SO300331	N/A	1.214836	0.867676	1.07853	1.08228	1.13888	0.899977	0.981138	0.723588	0.9304	1.012275	0.962668	1.082521
SO300472	N/A	1.097334	0.994015	0.962255	1.035555	1.087678	1.182359	0.916202	0.945388	0.814054	0.863344	0.919135	0.984475
SO302228	1.324717	1.083613	0.952215	1.002542	0.803712								

Registered Number	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12
SO300380	N/A	1.037889	1.114715	0.783373	1.112488	1.336117	0.775142	0.747593	1.002328	1.098694	0.762041	0.791783	1.066458
SO302085	N/A	0.689851	0.707855	1.106373	0.717713	1.078173	0.801158	0.917852					
SO300381	N/A	0.367345	0.843876	0.913589	1.557963	3.863911	0.989028	0.837942	0.962307	0.899761	0.765084	1.1041	1.084959
SO301366	N/A	1.044287	1.674226	1.051146	0.861585								
SO305583	N/A												

Appendix 4: Balance Sheet Test

Table 4.1: Total Liabilities

Registered Number	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12
SO300744	9038738	10590074	14373000	13304000	13155000	13095000	12545000	10690000	10385000	8941000	9199000		
SO300441	6014415	8522525	9236292	7397182	7669170	5053779	4103146	3381702	3420518	3261498	3047736		
SO300918	13584000	11490000	17612000	20361000	24040000	20949000	18954000						
SO300337	2182497	3890825[73]	2642880	2558962	3727087	4231659	4,153,966	3744200	4241654	4312911			
SO300371	2827809	3048585	1613335[74]	1907797	2938176	3023653	3599967	3087995					
SO301685	3740257	3402131	3979914	4030973	4073895	4163685							
SO300895	4491000	4851000	9489000	7843000	9601000	9521000	8375000	8502000	7834000	11480000[75]	10820000		

[73] Subsequently restated – restated figure used.
[74] Subsequently restated – restated figure used.
[75] Subsequently restated – restated figure used.

Registered Number	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12
SO300334	1968000	2732000	3239000	5046000	5631000	5810000	5512000	7366000	7109000	6353000	8152000	10105000	12475000
SO301485	6188848	7970880	6416075	5473831	6635355	8121821	7799962	7449743	7163563[76]	6682635			
SO301699	2340231	2432939	6973291	6831684	6710307	5728581	5572383	5274942	5280000				
SO300331	3414232	4337286	3915762[77]	5108811	5592737	5443375	5055922[78]	6194779	3949867	4709185	4325670	4782765[79]	7072012
SO300472	1533352	1751283	1625897[80]	2762724	2590425	4586971	4734277	4041972	3692841	3020189	2901841	3338122	3317064
SO302228	3088000	3100000	2952000	2969000									
SO300380	1298479	954287	1974612	3185605	3100486	2991199	3149570	3497490	2687872	5524104	6151463	7091152[81]	5699039
SO302085		6172328	7461844	8814483	15018903	8611965	12713292	12524052					
SO300381	813510	1021885	1165512	1623898	2254888	3250814	4044069	3267585	2912809	3646649	3213791	5331000	6399992
SO301366	2670039	3047750	4137163	4914981	5109417								
SO305583		4909513											

[76] Subsequently restated – restated figure used.
[77] Subsequently restated – restated figure used.
[78] Subsequently restated – restated figure used.
[79] Subsequently restated – restated figure used.
[80] Subsequently restated – restated figure used.
[81] Subsequently restated – restated figure used.

Table 4.2: Current Assets

Registered Number	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12
SO300744	24558343	30124656	31454000	26612000	27422000	23779000	25905000	22097000	25744000	27326000	26170000		
SO300441	25107886	25911480	27126999	23621484	29982573	23738459	24027370	22398944	18932946	18045931	18806667		
SO300918	28838000	33705000	37273000	26941000[82]	30231000	35049000	34914000						
SO300337	6251042	10574819[83]	10359810	10848164	9374490	10147236	7713730	7957962	7050795	6539822			
SO300371	4810421	6436399	7139160	8721367	8270212	5866645	6590697	6634565					
SO301685	7242218	6343263	6896646	7111330	6513175	5735891							
SO300895	17571000	22065000	19307000	16666000	18749000	21044000	19903000	19928000	19987000	28597000	31504000		
SO300334	10328000	11381000	13170000	17644000	22102000	21932000	20718000	24187000	26888000	28450000	36653000	44752000	49178000
SO301485	12721463	13557668	11108809	11588254	13594596	13944971	12667269	13210352	13688834	12606730			
SO301699	7787235	7875343	10157185	8435204	8066191	8042817	8566798	8806086	9208000				

[82] Subsequently restated – restated figure used.
[83] Subsequently restated – restated figure used.

Registered Number	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12
SO300331	4350903	5081293[84]	6443008[85]	7285112	7932865	6940044	7336852[86]	8345430	8131054	9120415	8537134	10064912[87]	11898050
SO300472	4475542	5255641	5586727	7254730	7035007	7155099	6958064	6698743	7338526	7743952	8990973	10106206	10405355
SO302228	7301000	7074000	7411000	6790000									
SO300380	7034755	6917003	7510009	10504006	9841820	7973040	10886894	14396855	13959728	21529911	27748605	33418655	30995641
SO302085		8922124	12227420	12328219	19821062	12960665	17940636	18745579					
SO300381	4183897	6662644	7730839	8155185	6996088	5675697	6581773	6280304	6207333	7361084	7975162	10925799	11136545
SO301366	9796414	8627353	7802443	7961032	8554898								
SO305583		9308645											

[84] Subsequently restated – restated figure used.
[85] Subsequently restated – restated figure used.
[86] Subsequently restated – restated figure used.
[87] Subsequently restated – restated figure used.

Table 4.3: Total Liabilities divided by Current Assets

Registered Number	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12
SO300744	0.368052	0.351542	0.456953	0.499925	0.479724	0.550696	0.484269	0.483776	0.403395	0.327198	0.351509		
SO300441	0.239543	0.328909	0.340483	0.313155	0.255788	0.212894	0.17077	0.150976	0.180665	0.180733	0.162056		
SO300918	0.471045	0.340899	0.472514	0.755763	0.79521	0.597706	0.542877						
SO300337	0.349141	0.367933	0.255109	0.235889	0.397578	0.417026	0.538516	0.470497	0.601585	0.659484			
SO300371	0.587851	0.473648	0.225984	0.21875	0.355272	0.515397	0.546219	0.46544					
SO301685	0.516452	0.536338	0.57708	0.566838	0.625485	0.7259							
SO300895	0.255592	0.21985	0.49148	0.470599	0.512081	0.452433	0.420791	0.426636	0.391955	0.401441	0.343448		
SO300334	0.19055	0.240049	0.245938	0.28599	0.254773	0.26491	0.266049	0.304544	0.264393	0.223304	0.22241	0.2258	0.25367
SO301485	0.486489	0.587924	0.577566	0.47236	0.488088	0.582419	0.615757	0.563932	0.523314	0.530085			
SO301699	0.300521	0.308931	0.686538	0.809901	0.831905	0.712261	0.650463	0.599011	0.573414				
SO300331	0.784718	0.853579	0.607754	0.701267	0.705008	0.784343	0.689113	0.742296	0.485776	0.516335	0.506689	0.475192	0.594384
SO300472	0.342607	0.33322	0.291029	0.380817	0.368219	0.641077	0.680401	0.603393	0.503213	0.390006	0.32275	0.330304	0.318784
SO302228	0.422956	0.438224	0.398327	0.437261									

Registered Number	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12
SO300380	0.184581	0.137962	0.262931	0.303275	0.315032	0.375164	0.289299	0.242934	0.192545	0.256578	0.221685	0.212191	0.183866
SO302085		0.6918	0.610255	0.714984	0.757724	0.664469	0.708631	0.668107					
SO300381	0.194438	0.153375	0.150761	0.199125	0.322307	0.57276	0.614435	0.520291	0.469253	0.495396	0.402975	0.487928	0.574684
SO301366	0.272553	0.353266	0.530239	0.61738	0.59725								
SO305583		0.527414											

Table 4.4: Table 4.3 with Year 0 as a Base

Registered Number	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12
SO300744	100	95.51425	124.1546	135.8301	130.3416	149.6247	131.5765	131.4425	109.6028	88.8999	95.50545		
SO300441	100	137.307	142.1388	130.7302	106.7816	88.87518	71.28982	63.0267	75.42068	75.44919	67.65225		
SO300918	100	72.37076	100.3117	160.4438	168.8183	126.8893	115.2494						
SO300337	100	105.3823	73.06753	67.5626	113.873	119.4433	154.2401	134.7584	172.3042	188.8875			
SO300371	100	80.57278	38.4424	37.21179	60.43579	87.67487	92.91807	79.17665					
SO301685	100	103.8505	111.7393	109.7562	121.112	140.5553							
SO300895	100	86.0163	192.2911	184.1214	200.3511	177.014	164.6341	166.9209	153.352	157.0633	134.3739		
SO300334	100	125.977	129.0673	150.0864	133.7042	139.0238	139.6216	159.8236	138.7526	117.1892	116.7201	118.4991	133.1254
SO301485	100	120.8505	118.7214	97.09584	100.3287	119.719	126.5717	115.9189	107.5697	108.9614			
SO301699	100	102.7984	228.4489	269.4987	276.8206	237.0082	216.4447	199.3239	190.8065				
SO300331	100	108.7753	77.44867	89.36552	89.84227	99.95221	87.81667	94.59397	61.90447	65.79873	64.56954	60.55576	75.74493
SO300472	100	97.26003	84.9453	111.1527	107.4757	187.1174	198.5953	176.118	146.8776	113.8349	94.20429	96.40906	93.04665
SO302228	100	103.61	94.17694	103.3821									

Registered Number	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12
SO300380	100	74.74379	142.4477	164.3051	170.6744	203.2523	156.7333	131.6142	104.3147	139.006	120.1023	114.9587	99.61278
SO300381[88]	100	78.8812	77.53686	102.4102	165.7631	294.5717	316.0048	267.5866	241.3376	254.7829	207.2508	250.9421	295.5609
SO301366	100	129.6138	194.5457	226.5176	219.1321								

[88] Neither SO302085 nor SO305582 provided a "Year 0" balance sheet in their opening accounts and accordingly cannot be included.

Appendix 5: Timing of Accounts Filing

Table 5.1

Date Filed

Registered Number	Year 1 Date Filed	Year 2 Date Filed	Year 3 Date Filed	Year 4 Date Filed	Year 5 Date Filed	Year 6 Date Filed	Year 7 Date Filed	Year 8 Date Filed	Year 9 Date Filed	Year 10 Date Filed	Year 11 Date Filed	Year 12 Date Filed
SO300744	11-Feb-08	29-Dec-08	06-Jan-10	17-Nov-10	19-Jan-12	06-Dec-12	08-Jan-14	06-Jan-15	06-Jan-16	13-Jan-17		
SO300441	15-Dec-05	21-Sep-06	13-Dec-07	19-Nov-08	18-Dec-09	25-Aug-10	27-Jan-12	11-Oct-12	26-Nov-13	26-Jan-15		
SO300918	11-Feb-08	16-Jun-09	16-Jun-10	06-Jun-11	12-Apr-12	20-Nov-12						
SO300337	04-Jan-06	25-Jan-07	08-Jan-08	27-Jan-09	31-Dec-09	29-Dec-10	06-Oct-11	09-Jan-13	21-Jan-14			
SO300371	03-Mar-06	16-Feb-07	12-Mar-08	29-Jan-09	03-Feb-10	02-Feb-11	30-Dec-11					
SO301685	17-Nov-09	18-Jan-11	28-Dec-11	24-Jan-13	03-Mar-14							
SO300895	12-Mar-08	26-Feb-09	27-Jan-10	27-Jan-11	02-Feb-12	28-Jan-13	30-Jan-14	28-Jan-15	03-Feb-16	27-Jan-17		
SO300334	13-Dec-05	18-Jan-07	14-Jan-08	02-Mar-09	28-Nov-09	28-Jan-11	13-Sep-11	29-Nov-12	06-Dec-13	19-Jan-15	28-Jan-16	03-Jan-17
SO301485	18-Mar-09	10-May-10	07-Dec-10	21-Dec-11	07-May-13	22-Apr-14	03-Feb-15	30-Mar-16	31-May-17			

SO301699	19-Nov-09	20-Jan-11	30-Dec-11	04-Feb-13	27-Dec-13	10-Oct-14	06-Nov-15	14-Nov-16				
SO300331	13-Dec-05	05-Feb-07	11-Feb-08	13-Nov-08	01-Sep-09	09-Sep-10	23-Dec-11	24-Oct-12	05-Sep-13	17-Dec-14	07-Oct-15	02-Sep-16
SO300472	02-Mar-07	12-Mar-08	03-Feb-09	08-Sep-09	13-Oct-10	21-Nov-11	21-Sep-12	13-Sep-13	11-Sep-14	14-Sep-15	03-Oct-16	23-Sep-17
SO302228	25-Nov-10	12-Jan-12	10-Jan-13	13-Jun-13								
SO300380	17-Mar-06	09-May-07	12-May-08	13-May-09	19-Apr-10	23-Feb-11	01-May-12	29-Apr-13	01-May-14	20-Jan-15	16-Mar-16	25-Apr-17
SO302085	13-Jul-10	20-Dec-11	27-Dec-12	06-Dec-13	19-Dec-14	30-Dec-15	05-Jan-17					
SO300381	07-Apr-06	04-Apr-07	07-Apr-08	02-Apr-09	03-Mar-10	01-Mar-11	02-Mar-12	29-Jan-13	23-Dec-13	05-Jan-15	13-Jan-16	06-Feb-17
SO301366	25-Mar-09	25-Mar-10	21-Mar-11	10-Nov-11								
SO305583	10-Oct-17											

Table 5.2

Days after Period End that Accounts were filed

Registered Number	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12
SO300744	256	212	220	170	233	189	222	220	220	227		
SO300441	229	144	227	203	232	117	272	164	210	271		
SO300918	134	259	259	249	195	204						
SO300337	279	300	283	302	275	273	189	284	296			
SO300371	307	292	317	274	279	278	244					
SO301685	201	263	242	269	307							
SO300895	317	302	272	272	278	273	275	273	279	272		
SO300334	227	263	259	306	212	273	136	213	220	264	273	248

SO301485	199	252	98	112	249	234	156	212	273			
SO301699	203	265	244	280	241	163	190	198				
SO300331	257	311	317	227	154	162	267	207	158	261	190	155
SO300472	306	317	279	131	166	205	144	136	134	137	156	146
SO302228	234	282	280	69								
SO300380	229	282	286	286	262	207	275	272	274	173	229	268
SO302085	104	264	271	250	263	274	280					
SO300381	311	308	312	306	276	274	276	243	206	219	227	251
SO301366	268	268	264	133								
SO305583	193											