ABSTRACT. The 2008 financial crisis has transformed the financial environment SMEs, resulting in significant declines in the availability of bank lending and venture capital. This has prompted government intervention to improve the availability of debt and equity capital. Whereas there are comprehensive statistics on bank lending and venture capital investments, equivalent information on business angel investment activity is lacking. This paper draws upon three sources of evidence on business angel investment activity in the UK - business angel networks, Scottish angel groups and individual angels - to reveal for the first time how the angel market has fared during the early stage of the financial crisis. While the evidence is not entirely consistent, it is clear that angel investment activity has held up since the onset of the financial crisis. This further emphasises the economic significance of business angels and underlines the need for on-going Government support. Policy options are reviewed.

Key words: SME finance, financial crisis, business angels, funding escalator, co-investment
1 Introduction

The 2008 financial crisis has had a major impact on the availability of finance for SMEs, creating barriers to business start-up and growth. In the UK lending to SMEs started to decline in late 2008, turned negative in late 2009, and remained negative in 2010, 2011 and 2012 (Bank of England, 2013). Thus, there has been a significant decrease in the ability of SMEs to access external credit (Cowling, et al, 2012; BIS, 2012). This largely reflects the tightening in the supply of bank finance - by far the main source of external finance for SMEs - following a period of unusually loose credit conditions (Davis, 2011). Banks have become more risk averse and have tightened their lending criteria, whereas prior to 2008 they were aggressively lending to gain market share. In addition, because of new financial regulations (Basel III) banks have to hold more capital. Meanwhile, the demand for bank finance from SMEs has declined, partly because of the economic conditions, which have discouraged firms from investing but also because of a perception amongst many business owners that a loan application would be rejected (BIS, 2012; Cowling et al, 2012). Indeed, the number of discouraged borrowers has risen sharply in the recession (Hutton and Nightingale, 2012). The financial crisis has also resulted in a decline in house prices which has reduced the ability of entrepreneurs to use housing assets as means of financing their business, for example as security or through equity withdrawal (Reuschke and Maclennan, 2012).

High potential firms, especially those in the knowledge economy are particularly disadvantaged by these developments, notably bank credit scoring methods because of difficulties in evaluating intangible assets, making such firms appear to be higher risk than they are, and accounting rules which do not value collateral, especially intangible assets, to take account of future growth prospects (Hutton and Nightingale, 2012). Even more significant for such firms is the decline in venture capital. with “investment activity ... lower now [in 2010] than after the dotcom crash, with seed and first round funding being particularly hard hit” (Pierrakis, 2010: 11). The situation has barely improved since then
Technology-based small firms report difficulties in raising both equity funding and bank debt (North et al, 2013; Kreston UK, 2013). Public sector venture capital funds now account for the majority of investments below £500,000 (SQW, 2009), particularly in peripheral regions (Mason and Pierrakis, 2013). However, it has been recognised for some time that early stage growth ventures faced major challenges in accessing relatively small sums of risk capital (HM Treasury 2003; House of Commons, 2013). Recent government reports have pointed to an on-going structural equity gap, even in normal market conditions, in the range £250k to £2m and £2m to £10m (SQW 2009; Rowlands 2009; BIS 2012), with one consequence being the acquisition of small companies by larger overseas companies before they can develop into mid-sized companies that would provide substantial jobs in the UK (House of Commons, 2013).

This, in turn, raises questions about the operation of the ‘funding escalator’ which sees businesses accessing different types of funding as they develop and have need for larger amounts of capital, starting with 3F sources (founder, family, friends), then accessing grants and soft money where available, and moving on to business angels, venture capital funds, development capital funds and ultimately a stock market listing. Government has responded to these trends with initiatives intended to increase both the amount of bank lending, particularly to small firms (Enterprise Finance Guarantee; Funding for Lending Scheme) and venture capital (Enterprise Capital Funds), while the banks have responded to the Small Business Task Force with the creation of the Business Growth Fund.

What remains unclear in the on-going analysis and discussion of the impact of the financial crisis on the availability of finance for SMEs is the effect that it has had on business angel investing. Indeed, it is striking just how little discussion of angel investment trends there is in recent government reports on access to finance by SMEs (e.g. Rowlands, 2009; Breedon, 2012; BIS, 2012). This reflects the limited
evidence base which arises because of the private and invisible nature of business angel investing and the associated difficulties in identifying business angels. Business angels – defined as high net worth individuals who invest their own money directly in unquoted businesses in which they do not have a family connection – have been shown internationally to be the main non-family source of equity finance for businesses at their start-up and early growth stages, investing in significantly more businesses than institutional venture capital funds (Gaston, 1989; Mason and Harrison, 2000a; Sohl, 2012a). Businesses raising finance from business angels - typically successful cashed out entrepreneurs or senior managers in large companies - also report that their value-added contributions, are significant (Freear et al, 1994; Mason and Harrison, 1996; Politis, 2008; Large and Muegge, 2008). Investment activity by business angels since the onset of the financial crisis therefore has considerable implications for the level of entrepreneurial activity in the economy. However, the lack of an evidence base has hindered Government from monitoring this important source of SME finance and making appropriate interventions.

The aim of this paper is to assemble and analyse the data on angel investing in the UK for the two years 2008-9 and 2009-10, the most recent available, in order to answer the following questions.

First, given the drop in both bank lending and venture capital investing, has the volume of angel investing also declined during the financial crisis? We might anticipate that the decline of bank finance and early stage venture capital finance will have increased demand for funding from other sources, including angel finance, during the financial crisis. However, the willingness of angels to invest may have fallen because of an increase in the perceived risks of investing in unquoted companies, a decline in their personal wealth or liquidity, a decline in capital gains that are available to be sheltered from tax using the Enterprise Investment Scheme, and fewer company sales to create new angels. On the other
hand, the very low interest rates, combined with falling property prices, might have encouraged some high net worth individuals to raise the risk profile of their investment portfolio by making angel investments in the search for increased returns. National and international evidence on recent angel investment trends, however, is sketchy. US statistics show a decline in angel investing in 2008 and 2009, a recovery in 2010 and stability since then (Sohl, 2009; 2010; 2011, 2012b; 2013; Angel Resource Institute/Silicon Valley Bank, 2013). Investment activity by New Zealand angel groups rose from 2006 to 2009, declined sharply in 2010 but increased in 2011 and 2012 but remains below the peak reached in 2009 (NZVIF, 2013). Angel investment is also reported to have increased in Atlantic Canada (Entrevestor.com, 2013). This paper adds UK data to this evidence base.

Second, are there discernible changes in the nature of angel investing? The expectation is that the decline in venture capital will have had two effects. Angels will be more likely to participate in deals with co-investors involving larger deal sizes as they seek to fund opportunities that would previously have been within the venture capital space. In addition, an increasing proportion of the investments made by angels will be follow-on investments. Prior to the crisis some of these businesses would have raised additional finance from venture capital funds as the funding escalator model suggests. Sohl (2012a) reports that the US angel market has seen a shift from the seed and start-up stages to the post start up stages.

Third, the funding escalator model continues to be used uncritically (e.g. Rowlands 2009; BIS, 2012), despite evidence that gaps in the supply of venture capital have undermined its validity (e.g. Gill, 2010). Pre-2008, new ventures, and in particular those developing and exploiting new technology opportunities could rely on a transition from self- and family funding through grant funding to business angel funding, access to bank lending and through to VC funding in a series of overlapping steps. Post-2008, the
market has changed: self- and family funding is constrained, not least because of the collapse in property values, grant funding has reduced (exacerbated by the abolition of the Regional Development Agencies), bank lending is much less available and VC funding has declined and shifted to later stage deals. Against this background, therefore, what does our evidence on angel investment trends indicate concerning the current nature of the funding escalator?

The paper is therefore the first to expose, albeit partially, recent trends in angel investing in the UK, significantly enhancing the evidence base on this key source of entrepreneurial finance. As a source of ‘smart money’, supporting new and early stage businesses, business angels are widely accepted as being a critical part of the entrepreneurial eco-system. The paper’s key contribution is therefore to examine the implications of the 2008 financial crisis on the angel market.

Cutting across these research questions is the policy agenda. The importance of angel investing is gaining recognition in both developed and emerging economies throughout the world (OECD, 2012). Angel investment trends, the organisation of angel investing and the types of investments made by angels all have significance for policy-makers seeking to support business start-up and growth. Given this increasing reliance of governments on the angel market as a key source of entrepreneurial finance the paper concludes by considering the policy implications that arise from current angel investment trends.

2 Data sources

The challenges involved in collecting data on business angel investments have been well-rehearsed (Mason and Harrison, 2008a; Farrell et al, 2008; Avdeitchikova et al, 2008). Investing in unquoted
businesses is a private activity, business angels typically wish to retain their anonymity and despite the recent emergence of angel networks and groups the market remain largely unorganised, lacking a single access point. A previous analysis of the angel market in Scotland (Harrison et al 2010) used investor data recorded at Companies House, through form 88(2)\(^1\). However, the scale of the task to extract this information, limitations of the data themselves (Mason and Harrison, 2008a; 2008b) and the replacement of Form 88(2) by form SH01 which no longer identifies the name of the shareholder (Harris and Mason, 2013), means that this approach is not feasible on more than a modest scale.

We overcome these data limitations, at least partially, by focusing primarily on the visible part of the market, that is, investments that are channelled through ‘portals’ (Sohl, 2007) that have been established by both private and public sector organisations to link business angels and entrepreneurs. These portals are two types. The first type are ‘networks’ which provide a communication channel to enable angels and entrepreneurs seeking finance to connect with each other. This is done through a variety of mechanisms, notably company presentation events and newsletter/information bulletins (Mason and Harrison, 2010). In this model individual and ad hoc groups of angels will invest directly in companies presented to them. Second are ‘groups’, or managed syndicates, of individual angels who make their own individual investment decisions but nevertheless invest collectively in businesses (for examples, see Cerullo and Sommer, 2002; Payne and Maccarty, 2002; May, 2002; Gregson et al, 2013).

Our analysis is based on three data sources and covers two years: 2008-9 and 2009-10. The main data source is aggregate investor and investment data from business angel networks (BANs) that are

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\(^1\) All incorporated companies in the UK are obliged to file details of investments received where such investments result in the issue of shares. Companies are obliged to make returns on form 88(2) (now form SH01) within one month of the allotment of shares (Mason and Harrison, 2008a; 2008b). 88(2) forms have been used to examine the early stage risk capital market in Scotland (Harrison et al, 2010). However, using this source requires comprehensive information on which companies have raised equity finance. In Scotland this information is collected and reported by Young Company Finance. It is also helped by the small scale of the Scottish market.
members of the British Business Angels Association (BBAA), the trade association for England, Wales and Northern Ireland. Typically these offer a range of services to facilitate investment activity by improving information flow in the market, for example, organising events at which entrepreneurs pitch their investment opportunity to angels. They are of two types: those that are funded in part or entirely by government or a quasi-public sector agency as part of an economic development mandate; and those established by private sector organisations operating as commercial organisations, remunerated by fees charged to both investors and entrepreneurs and upon deal completion. In 2008-9 20 of the 24 BANs that were members of BBAA provided data on 233 investments. In 2009-10 all 20 BBAA members which were active at the time, plus one non-member, provided data on a total of 245 investments. There was a very high overlap over the two years in terms of the BANs which reported data. Most networks operated on the basis of a business model which charged a success fee on completed investments. This meant that the networks had a high awareness of the introductions that they provided that resulted in investments which, in turn, provides confidence in the accuracy and comprehensiveness of the data. This evidence is supplemented by two further sources. First, information was provided by LINC Scotland, the national membership organisation for the business angel community in Scotland, on the investments made by their angel group members. The visible angel market in Scotland is organised very differently from that in the rest of the UK, comprising privately initiated and managed angel syndicates and family offices rather than networks. The investments that LINC Scotland reports are therefore made by angels investing as members of angel groups. In view of these differences, we comment separately on angel investment in Scotland and in the rest of the UK. Because the supply of investment statistics is an obligation of membership, this again gives confidence that the data are comprehensive and accurate.

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2 The BBAA was re-launched as the UK Business Angels Association in July 2012 with a wider membership comprising organisations involved in the early stage venture capital market (accountancy, law and corporate finance firms, banks, etc.).

3 One BAN provided data in 2008/9 but subsequently left the BBAA and so did not provide data in 2009/10. Two BANs provided data in 2009/10 but not in 2008/9. However, one actually reported no investment activity while the other was a new network acting as an umbrella organisation for three smaller, established networks.
Second, responses were obtained from 153 individual angels in 2008-9 and 147 in 2009-10. Short questionnaires were distributed through various intermediaries, including the Association of Certified and Chartered Accountants (ACCA) and the Law Society, at events associated with the national business angel awareness campaign and at company presentation events hosted by BBAA members. This was intended to capture the investment activity of individual investors outside the BANs. However, in view of the way in which the data were collected it was perhaps inevitable that a high proportion of respondents (54% and 67% in the two survey years) indicated that they were members of angel networks and syndicates. Nevertheless, the responses provided insights into the market that were not available from the network and group data. In particular, it revealed that many angels operate in both the visible and invisible markets, investing via networks and groups and also independently.

There are several limitation to this study. The most obvious is its primary focus on the visible market. Specifically, there is no failsafe means of estimating the proportion of the overall market that the visible market comprises, nor is it known whether the deals in the visible market are typical of those in the invisible market. A second limitation is the restriction to BBAA members which are all networks, and the consequent exclusion of angel groups, apart from Scotland, and computer-based networks. In an attempt to address this issue in 2009-10 several angel groups that are not members of BBAA were contacted to request data but only one responded. Third, we had no control over the collection and processing of the data which are reported to the BBAA and LINC Scotland by their members and were then made available for this study in anonymised form and so we could not independently corroborate the information. Another issue is that networks which charge a success fee on completed investments (usually in the form of a percentage of the amount raised) are able to report accurate investment statistics and have greater knowledge of the details of the investment (e.g. number of angel investors in
the deal; involvement of co-investors, etc.) than those networks which have no financial interest in the result of introductions that they make and therefore do less in the way of monitoring outcomes.

3 Market activity

3.1 Investor numbers

Data provided by the networks on the number of member angels leads to the conclusion that angel numbers have remained broadly static between 2008/9 and 2009/10. Our caution in making a definitive statement arises for two reasons. First, ‘membership’ of an angel network is a variable concept. The critical issue is whether investors pay a membership fee. Those networks which do charge investors a membership fee – which tend to be the larger networks – are able to report accurate numbers. However, other networks – especially those whose fee income is based on a success fee on completed investments – do not charge investors a membership fee and instead may simply invite targeted individuals to events. The number of ‘member angels’ reported by these networks is therefore, inevitably, an approximation. Second, there may have been some double counting of angels in 2008/9. Two ‘sister’ networks which share the same investors but manage the investment process independently (and so report their investments separately) each reported their number of angel members in 2008/09 but reported a single total in 2009/10. Including just one of the reported totals for 2008 indicates that there has been a very small decline in angel membership of networks (-1.5%). Those networks which reported their investor numbers in both years experienced only a marginal decline in aggregate membership (-0.9%) (Table 1). Other measures point more clearly to an increase in the number of business angels. First, the number of angel groups reporting an increase in membership exceeded those reporting a decline (11 vs. 7). And second, 13 out of 18 Networks had more investors joining their network in 2009/10 than leaving.
Of course, it does not follow that all of the angels registered with the Networks are actively investing. Some angels will be looking to make their first investment. Others may have reached their investment capacity in terms of finance and/or time, at least for the time being. The Networks estimated that fewer than 1,800 of their registered angels were active, just 37% of the total. Even fewer – less than 500 (10%) made investments through a network during 2009/10 (although, as shown later, this does not preclude the possibility that they made investments independently of the networks).

This suggests that data on the number of business angels reported by BANs is not very helpful and may actually be a misleading indicator of market activity. A more appropriate unit of analysis is investments.

3.2 Investment rates
Stability – or even an increase – in the number of business angels registered with networks does not necessarily mean that investment activity has increased or that access to finance has improved, especially if demand for funding has increased. On this latter point, the data from BANs suggests that demand has indeed increased, with networks receiving a total 9,640 business plans in 2009/10. This was an increase of 955 (+11%) on the 2008/9 figure. However, this increase would appear to be associated with a decline in the number that were potentially ‘investable’. This is indicated by a decline in two measures between 2008/09 and 2009/10: first, the ‘funding rate’ (the number of investments as a proportion of the total number of business plans received by the network); and, second, by the ‘presentation rate’ (the proportion of businesses that were presented to investors) (Table 2). This would be expected if, as is likely, economic conditions and the lack of alternative sources of finance have

4 This was left to the responding networks to define.
pushed more businesses – including unsuitable ones - to seek angel finance. But for those businesses selected for presentation to investors, the probability of raising finance (the ‘success rate’) increased from 2008/9 to 2009/10 (Table 2). In other words, ‘good’ investment opportunities have not found it any harder to raise finance from business angels as the financial crisis deepened, but networks have had to do more work to identify and screen out funding proposals from unsuitable businesses.

TABLE 2 ABOUT HERE

Of course, these trends are inextricably linked to the activities of the banks noted at the outset of the paper. First, banks ceased to provide what was in effect equity finance disguised as loans, as they had been doing prior to the financial crisis, and turned away businesses that needed to be funded by equity (North et al, 2013; Kreston UK, 2013), forcing them to seek funding from business angels. And second, they forced some established businesses that did require debt financing to seek equity financing from business angels.\(^5\)

### 3.3 Investment activity through BBAA networks

The evidence indicates an increase in the number of investments, no change in total amount invested (angels plus any co-investors) but a decline in the aggregate amount invested by business angels themselves. As Table 3 shows, the 20 BBAA networks which supplied information reported a total of 245 investments in 2009/10. These companies raised a total of £98.3m.\(^6\) A total of 876 business angels\(^7\)

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\(^5\) Some angel groups have provided debt rather than equity in such situations: see, for example, the case of Touch Bionics, Financial Times, 20 January 2010. [http://www.ft.com/cms/s/0/675b5320-05d4-11df-88ee-00144feabdc0.html#axzz2TAYwqHzY](http://www.ft.com/cms/s/0/675b5320-05d4-11df-88ee-00144feabdc0.html#axzz2TAYwqHzY)

\(^6\) This is skewed by one business which raised £18m

\(^7\) The information reported by networks was the number of their angels who participated in each investment. Some networks provided an approximate number, usually in the form of ‘more than’. Thus, this number is likely to
registered with these networks contributed £32.2m (33%) of this total. Comparison with 2008/9 reveals a small increase in the number of investments amongst BBAA member networks (+20 investments; 9%) and no change in the number of angel investors participating in these investments. However, whereas the overall amount invested from all sources has remained virtually static, the amount invested by angels has fallen significantly (-£7.6m, -19%). The mean number of member angels participating in each investment made through a BBAA Network has also fallen from 4 to 3.6.

TABLE 3 ABOUT HERE

There is a wide range in overall deal size, ranging from less than £25,000 to over £1m (the two biggest being deals of £5.8m and £18m). However, most deals are in the £50,000 - £500,000 range. Fewer than 10% of deals were for £1m or more. Deal sizes were smaller in 2009/10 than in 2008/09, with 56% of investments in 2009/10 under £200,000 compared with 48% in 2008/09. The apparent contradiction between the slight increase in the overall amount invested and the increase in the frequency of smaller deals is likely to be accounted for by the presence of one exceptionally large investment in 2009/10. The majority of investments (55%) only involved angels. However, at the other extreme, angels have been minority investors in one-third of all deals.

Looking specifically at the amounts invested in total by angels in a single deal, one-third of deals involved angels investing less than £50,000 per deal, in over half of all deals angels invested less than £100,000, and in three-quarters of deals angels invested less than £200,000. It is also the case that very few angels invest more than £500,000 in a single deal. Given that the structural equity gap in the UK is estimated to lie in the range £250k to £2m (Rowlands, 2009) these figures suggest that business angels be an underestimate. On the other hand, there will be over-counting in situations where angels are have made more than one investment in the business in the same year.
are making only a minor contribution to closing it. Furthermore, these figures are for the total amount invested by all business angels in a deal and not the amounts that they invest individually. This is because more than one angel registered with the same network often invest in the same deal. Unfortunately, the individual investments are not reported separately. Indeed, more than half of all investments involve at least two angels, while 18% involve more than five angels. Not surprisingly, single angels dominate where the total angel investment is small. Hence, individual angels provide all of the finance in two-thirds of situations when the total angel investment is under £25,000. This proportion drops to 54% for angel investments of between £25,000 and £49,000 and to around one-third when the amount invested by angels is £50,000 or more. Nevertheless there is considerable variability, with sizeable proportions of small angel investments involving multiple angels and of larger investments involving a single angel. In summary, the market is becoming increasingly complex, with significant numbers of deals involving angels investing together and investing alongside other types of investor, including public sector co-investment funds.

The available data only cover the number of times that a company has raised funds from the reporting network. The complete funding history of companies is not information that BANs would record, hence the extent of follow-on investing is likely to be under-reported. All we can say is whether or not the investment is the first occasion that the company has raised finance from that particular network. With this caveat, the data shows that more than half of all investments involve businesses raising finance from that network for the first time, with the proportion of follow-on investments actually falling from 41% to 33% between 2008-9 and 2009-10 (Table 4). This is counter-intuitive in view of the scarcity of other types of finance and contrasts with the experience of Scottish angel groups (see below). There are two possible explanations. First, angel groups have greater financial resources than individual angels and
so are able to make follow-on rounds. Second, it may be a data issue, with BANs by-passed when the same individual angels make direct follow-on investments in deals that they originally facilitated.

TABLE 4 ABOUT HERE

TABLE 5 ABOUT HERE

Investments were largely focused on the early growth and start-up stages (Table 5). However, nearly one-quarter of their investments in 2009-10 were in established companies seeking development capital. It is also important to note the limited involvement of business angels in seed stage investments. As this is also a type of investment that is shunned by venture capital funds, it suggests that this funding needs to be supplied by the public sector. Very few business angels are involved in investing in turnarounds and management buyouts and buyins. There has been a shift in the investment focus of business angels in favour of established businesses (from 13% to 24%) between 2008/9 and 2009/10.

Given the focus on the start-up and early stages, it is not surprising that the majority of companies that have raised finance from business angels are small. Just over half of the companies that have raised finance from BANs in 2009-10 had five or fewer employees and 78% had 10 or fewer employees. One of the most significant changes between 2008/09 and 2009/10 is that the tail of larger companies (10 or more employees) raising finance from business angels has increased from 12% to 22%.

The industry categories reported are fairly broad and only some of the networks provided a detailed description of each company’s activities. It is clear that business angels invest across a wide range of industries, but with a strong focus on technology sectors. However, there has been relatively little

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8 Venture capital funds made no seed investments in 2009 (BVCA, 2010).
change in the sectoral distribution of investments. Angel investing is focused on ICT (including software) (25%) and biotech/medical/health (19%). Within the ICT category there was a strong emphasis on web-based services and software, web sites and mobile phone applications. Bio-medical products, medical devices, medical technology and healthcare dominated the biotech/medical/healthcare category. The energy/water/recycling sector was dominated by clean technology and green energy businesses. E-commerce businesses were also quite common, dominating the retail category but also featuring in the ICT sector (e.g. web-based payment systems).

3.3 Investment activity by angel groups in Scotland

Rather than being based around networks – which ‘introduce’ angels to entrepreneurs seeking finance - the visible angel market in Scotland is structured around angel groups which typically comprise a manager, or gatekeeper, through which investment opportunities are received, filtered and then presented to their angel members. Angel groups are also present in other parts of the UK but have not joined BBAA and therefore do not have a single access point for data. As Scottish angel groups have chosen not to become members of the BBAA, a separate analysis of the market in Scotland is required. Another distinguishing feature of the Scottish market is the presence of the Scottish Co-Investment Scheme (SCIF), launched in 2003, which invests pound for pound up to a maximum of £500,000 and on a pari passu basis, in investments in eligible companies made by their investment partners. Although the investment partners include both angel groups and venture capital funds, the majority of co-investments have been made with angel groups (Haydon et al, 2008) because the maximum funding limit is too low for venture capital funds. A number of co-investment schemes have been established in the rest of the UK, but these are more recent and have different operating models, and also in other countries, with those in New Zealand and Ontario, Canada, being modelled on the Scottish scheme.
Investment activity by the angel groups associated with LINC Scotland confirms the emerging picture of a fairly stable market in terms of investment activity, with a slight increase in the number of investments, deal size remaining the same but a marginal increase in the amount invested by angels (Table 6A). More recent statistics indicates that investment activity has increased between 2010 and 2012 in terms of amounts invested but both the number of investments and the number of companies raising finance dropped between 2010 and 2011, reflecting the trend towards larger investments (Table 6B). All of the measures resumed their upward trend in 2012.

TABLE 6 ABOUT HERE

However, in other respects the investment activity in Scotland is rather different from elsewhere in the UK. First, in terms of deal size, Scottish angel groups were involved in fewer deals of under £200,000 (49% cf. 57%). Second, the vast majority of these deals (85%) were co-investments, almost exclusively with the SCIF. Third, in terms of the amounts invested by angels, Scottish groups were less likely to invest less than £25,000 and more likely to invest over £200,000 in a single deal. Fourth, Scottish angel groups were more likely to make follow-on investments; in 2009-10 these accounted for 76% of total investments compared with 33% for investments made through BBAA networks. Indeed, in 45% of investments this was the third or later round of investment. This contrasts with investments made through BBAA networks where the proportion of follow-on investments declined (from 41% to 33%), although as noted earlier this may reflect differences in data or definitions. Follow-on investing has remained at a high level since 2009-10 (66% in 2012). Fifth, angel groups in Scotland had a much greater focus on the early growth stage and made fewer investments in established companies. However, like angels in the rest of the UK, Scottish angel groups also avoided making seed capital investments. Sixth, Scottish angel groups are slightly more oriented toward investing in larger companies – which is
consistent with their higher proportion of follow-on investments. The proportion of their investments in larger companies (10 or more employees) also increased (from 29% to 33%). This was also the case with investments made through BBAA networks. Finally, the proportion of investments made by Scottish angel groups in high tech sectors is similar to that of BBAA networks; however, Scottish angel groups were more oriented to life sciences than BBAA investors.

3.4 Individual angels

Only a small proportion of investment activity is visible. Investments that are made through angel networks comprise the visible part of the market, with these deals being documented by the network or group that facilitated them. However, the majority of investments by business angels continue to be made directly between the investor and entrepreneur, are not publicly documented and hence are, in effect, invisible. This leaves open the question of the extent to which the trends in investment activity that we have seen in the visible market are similar to those in the invisible market. Evidence on this critical issue comes from surveys of individual angels undertaken in both 2008-9 and 2009-10. In both cases respondents were asked to report on their investment activity in the previous year. Some two-thirds (67%) of the responding angels in 2009-10 were members of angel networks that were members of the BBAA hence the survey did not achieve the degree of penetration into the invisible market that had been intended. On the other hand, it did reveal that that only one-quarter of angels who are members of angel networks use networks for all of their investments. In other words, many angels operate in both the visible and invisible markets. The survey also revealed that the most active investors were the most likely to use networks, and that angels who were members of networks were more likely to invest. This points to evidence of a ‘network effect: either networks attract the most active investors or membership of a network enables investors to be more active.
The majority of respondents (72%) had made at least one investment during 2009/10. The median amongst those was two investments but there was a tail of more active investors who had made more than five investments. Collectively respondents had made a total of 276 investments, of which 66% were new, the remainder being follow-on investments. The amounts that they had invested during 2009/10 ranged from under £10,000 to over £500,000 but with skew towards smaller investments: 56% of investors who had made investments in 2009/10 invested up to £50,000 and 75% invested up to £100,000.

Comparing investment activity in 2009/10 with 2008/09 confirms the evidence from the networks of little change. The proportion of respondents who did not make any investments in 2009/10 is only slightly higher than the proportion in the 2008/09 sample (28% cf. 25%). Just over one-third of respondents (35%) invested more in 2009/10 than in 2008/09 but this is largely offset by 32% who had invested less in 2009/10 than in 2008/09 (Table 7). The remaining one-third invested about the same in both years. Finally, there has also been a slight shift in favour of smaller investments: 70% of angels invested less than £75,000 in 2009/10 compared with 64% in 2008/09. This is all consistent with both the aggregate data from the networks and the deal specific information which suggest that there has been little change in the volume of business angel investment activity between 2008/09 and 2009/10. However, a new survey suggests that angel investing has increased since then, with 58% of angels reporting they had invested more in 2012-13 than in previous years (Deloitte, 2013).

The majority of active investors (70%) had used the Enterprise Investment Scheme (EIS) for at least some of their investments. This provides a generous package of tax incentives. However, only 37% used the EIS for all of their investments. So clearly there is only an imperfect overlap between angel
investments and investments made through the EIS, with a significant minority of business angel investments not being made through the scheme.

Government statistics indicate that the actual number of companies raising funds under EIS and the amounts invested both increased marginally between 2008/9 and 2010/11, while the number of subscriptions (individuals making investments) increased substantially (Inland Revenue, 2012), further confirming that angel investing has held up and on some measures increased since the onset of the financial crisis. But, as indicated above, by no means all angel investment is channelled through the EIS hence it is also an approximate measure of angel investing.

4. Conclusion and policy implications

William Wetzel, the pioneer of business angel research, stated some thirty years ago that because of the invisibility of angel investors “the size of the angel market is unknown and probably unknowable” (Wetzel, 1983: 26). This conclusion has less validity now on account of the emergence of a visible market comprising angel networks and angel groups. Statistics on investment activity in the visible market have been used to estimate overall investment activity in the market (Mason and Harrison, 2000a; 2010). In this paper we have used evidence on investments in the visible market, supplemented by some evidence from individual angels, to reveal angel investment trends in the UK in the immediate aftermath of the 2008 financial crisis. The absence of such information until now represents a major gap in our understanding of the impact of the financial crisis on the funding environment for SMEs.

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9 Number of companies: 2008/9: 1,913; 2009/10: 1,965; 2010/11: 1,937
Amount invested: 2008/9: £515m; 2009/10: £522m; 2010/2011: £525m
10 The 2010-11 statistics are based on claims received by November 2012 and are likely to be revised upwards.
The paper sought to answer three questions. The first question concerned the volume of investment activity. The indicators largely point in the same direction. The investment activity that has been channelled through BANs has increased in terms of number of investments but declined in terms of amount invested. Scottish angel groups have made more investments and invested more. The balance of individual angels investing more in 2009-10 than in the previous year exceeds those investing less. And the amount invested through EIS has marginally increased. So, it is quite clear that angel investing has held up since the onset of the financial crisis, in sharp contrast to bank lending and venture capital investing. This can be attributed to an appetite amongst angels to continue to invest, no doubt influenced by the low returns from other investment categories (notably cash and property).

Meanwhile, demand has increased, giving angels superior bargaining power over entrepreneurs in the absence of alternative sources of funding to establish lower valuations. It is particularly significant that the proportion of investment opportunities presented to angels (i.e. after screening by the network manager) and which received investment actually increased. Angel investment activity would therefore not appear to be influenced to the same extent as banks and venture capital firms by prevailing economic conditions, further underlining its critical importance in achieving economic recovery.

The second question concerned discernible changes in the nature of angel investing. There is continued emphasis on investing in technology sectors. However, there were some signs of a shift away from investing in start-ups in favour of established businesses and larger businesses. The proportion of investments made through BANs that were follow-on investments declined, in marked contrast to Scotland where the majority of investments by angel groups were follow-on investments.

The third question related to the implications for the funding escalator. There is no evidence that angels are investing more per deal, although Scottish angel groups have increased their follow-on investing.
What has changed is the significance of co-investing, both between business angels (and angel groups) and between business angels and other types of investor. This trend has been assisted, especially in Scotland, by public sector co-investment funds. The consequence is that a significant proportion of business angels are now participating in much bigger investments. The overall effect has been to fill the smaller end of the deals (sub £1m) that venture capital funds would previously have made.

From a policy perspective, the performance of the angel market during the financial crisis serves to underline its critical importance for an entrepreneurial economy. The UK evidence, supported by studies in other countries, indicates that angel investment activity largely held up during the financial crisis, in sharp contrast to trends in bank lending and venture capital investing. Some commentators are suggesting that the much reduced levels of bank lending and venture capital investing represents the ‘new normal’ (Davies 2011, Mason, 2009), underlining the increasing significance of the angel market as a key source of finance for entrepreneurial businesses. The implication is that governments need to give the angel market much greater attention than hitherto in their enterprise strategies. This applies as much to the UK, which has been at the vanguard of initiatives to support business angels (OECD, 2011), as to other countries.

Several countries offer tax incentives to business angels to stimulate both the number of investors and the amount that they invest. In the UK tax incentives were initially introduced in 1981.¹¹ The current Enterprise Investment Scheme (EIS) offers a generous combination of income tax relief, capital gains roll over, loss relief and gains are not subject to capital gains tax. The recent (2011-12) introduction of the Seed Enterprise Investment Scheme (SEIS) which offers enhanced tax incentives for investments in seed stage companies is a response to the evidence (Mason and Harrison, 2011) concerning the lack of

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¹¹ The Business Start-Up Scheme, which evolved two years later to become the Business Expansion Scheme.
interest of angels in investing in seed stage deals. However, tax incentives are a blunt instrument (OECD, 2011), difficult to target, subject to potentially high deadweight, distort behaviour and are at risk of being compromised by financial intermediaries as low risk tax avoidance schemes (as occurred with the UK’s Business Expansion Scheme: Harrison and Mason, 1989). The SEIS is claimed to have pushed up valuations (Deloitte, 2013). The design of such schemes is therefore critical. Furthermore, they are less effective in countries that do not have capital gains tax. On the other hand, angels, unsurprisingly, report that tax incentives are significant to their investment decisions (Mason and Harrison, 2000b; Deloitte, 2013). The main issue for countries with such schemes is to ensure that the eligibility rules are appropriate. In view of the increasing proportion of large deals in which angels are involved, the rising proportion of investments in established and later stage businesses and the significance of follow-on investments that have all been highlighted here governments must ensure that eligibility rules for the size of investment and size of company remain appropriate. The requirement for business angels to invest in ordinary shares to qualify for tax relief has been a longstanding source of concern amongst the angel community, because it creates considerable difficulties in the event that venture capital funds – which invest using preference shares – make a follow-on investment. Removing this restriction might go some way to reviving the funding escalator.

Government support for business angel networks (BANs) is also a longstanding and widespread initiative, particularly in Europe. However, BANs have found it difficult to become self-sustaining without government financial support and typically have ceased operating in the event that such funding was withdrawn, as occurred in England with the closing down of the Regional Development Agencies. There is a strong case for Governments to maintain and, in the case of the UK, to resume, their support for BANs. First, angels must be able to identify and invest in businesses for tax incentives to be effective (Mason, 2012). Second, BANs have been shown to be effective and cost efficient in mobilising
investment into entrepreneurial ventures (Harrison and Mason, 1996; Collewaert et al, 2010). Third,
placing reliance on the various private sector commercially-focused networks that are now performing
this role is not an option. It has long been established that privately run commercial networks need to
focus on very large fund-raising (typically £500,000 and above) to generate the fees needed to be
financially sustainable (Mason and Harrison, 1997) hence they do not displace the need for publicly
supported networks. And finally, BANs facilitate investment activity, not just through their match-
making activities but also through capacity building in the form of investor training and investment
readiness training programmes for entrepreneurs. We noted from the angel survey that the most active
angels were those who were members of a network. There is also evidence that that networks which
offer investment readiness training are more successful in attracting funding for the businesses that
they select to be presented to their investors (Mason and Harrison, 2010: 20-21).

A further area where government needs to intervene is at what has been termed ‘the second equity
gap’ (Murray, 1994) and more recently as ‘the series A crunch’. This is the point on the funding escalator
where businesses have exhausted business angel funding and need to raise expansion capital. In the
past this handover point would have been around £250,000 and businesses would have looked to
venture capital funds for this follow-on funding. Now, a result of the growth of angel groups and co-
investing amongst angels it is around £1m and over. However, the contraction of venture capital funds,
the scale of the funding required which exceeds the public sector venture capital investment limits and
the hesitancy of angels to bring venture capital funds into a deal, has created a new funding barrier to
business growth. The consequence is either than the angels are unable to exit from their investments or
that they are forced into a premature exit at an unfavourable valuation, thereby diminishing the wealth
available to the internal and external shareholders for ‘entrepreneurial recycling’ (Mason and Harrison,
2006).
Co-investment funds, which involve public sector funds investing alongside business angels and on the same terms \textit{(pari passu)}, are at least a partial response to this problem. Following the apparent success of the pioneering Scottish Co-Investment Scheme they have now been introduced by several countries \textit{(OECD, 2011)}. However, the limit on the amounts that the public sector can invest in a single business is a major constraint on how much that businesses can raise through this route. Moreover, it requires the existence of organised angel groups as partners. Hence, two further initiatives are required. First, there is a need to stimulate the creation of angel groups (or syndicates) in which individual angels join together with other angels to jointly evaluate and invest in entrepreneurial businesses. Such groups develop professional approaches to the investment process and will typically appoint a manager (who may be a member of the group) and some administrative support. By pooling their capital they are able to make larger investments. Some governments (e.g. Scotland, Ontario) have provided support for the initial running costs of angel groups. They may also derive fee income as partners in co-investment schemes. Second, to address the growing demand for follow-on funding governments need to remove the regulatory and tax constraints that prevent angel groups from creating tax-efficient side-car funds (pooled funds) to invest alongside the group. Side car funds are common in the USA, giving group members the opportunity to achieve diversification while also attracting funds from passive investors. In the future bigger deals may be financed by angel groups working in association with crowdfunding platforms.\footnote{One interesting private sector initiative that seeks to address this issue is the \textit{Syndicate Room}, a crowdfunding platform that works with angel groups and networks to enable them to attract independent angels in order to close out funding rounds \textit{(http://www.syndicateroom.com)}. Meanwhile the UKBAA is in the process of setting up a deal sharing arrangement with a crowdfunding platform to enable its members to raise finance for part-funded deals.}
It is clear from the recent experience in the UK - one of the most developed and active angel investment markets in the world - is that the angel market has become even more important to the success of an entrepreneurial economy. The challenge for policy-makers is that despite over 20 years of research and policy making in the UK, angel investing remains substantially an evidence-based policy free domain.

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Table 1. Trends in angel membership of networks

<table>
<thead>
<tr>
<th>All networks</th>
<th>Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>5548 2008/09</td>
<td>4555 2009/10</td>
</tr>
<tr>
<td>Excluding possible source of double-counting (see text)</td>
<td></td>
</tr>
<tr>
<td>4626 2008/09</td>
<td>4555 2009/10</td>
</tr>
<tr>
<td>Networks reporting in both years</td>
<td></td>
</tr>
<tr>
<td>4585 2008/09</td>
<td>4544 2009/10</td>
</tr>
</tbody>
</table>

Source: data from BBAA member networks

Table 2. Funding rates

<table>
<thead>
<tr>
<th></th>
<th>2008/09</th>
<th>2009/10</th>
<th>Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>A: Number of business plans received</td>
<td>8,685</td>
<td>9,640</td>
<td>+955 +11.0%</td>
</tr>
<tr>
<td>B: Number of companies presented to investors</td>
<td>824</td>
<td>764</td>
<td>-60 -7.3%</td>
</tr>
<tr>
<td>C: number of companies raising finance through the network</td>
<td>233</td>
<td>238</td>
<td>+5 +2.1%</td>
</tr>
</tbody>
</table>

Conversion rates

- The ‘presentation rate’ (B as a proportion of A) | 9.5% | 7.9% | -1.6 percentage points |
- The ‘success rate’ (C as a proportion of B) | 28.3% | 31.2% | +2.9 percentage points |
- The ‘funding rate’ (C as a proportion of A) | 2.7% | 2.5% | -0.2 percentage points |

Source: calculated from data from BBAA member networks

Table 3. Angel investment activity

<table>
<thead>
<tr>
<th></th>
<th>2008/09</th>
<th>2009/10</th>
<th>Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>A: BBAA Networks</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number of investments</td>
<td>225</td>
<td>245</td>
<td>+20 +8.9%</td>
</tr>
<tr>
<td>Total amount raised</td>
<td>£97.5m</td>
<td>£98.3m</td>
<td>+£0.8m +0.8%</td>
</tr>
<tr>
<td>Total angel investment</td>
<td>£39.9m</td>
<td>£32.3m</td>
<td>-£7.6m -19.0%</td>
</tr>
<tr>
<td>Number of angel investors</td>
<td>895</td>
<td>876</td>
<td>-19 -2.1%</td>
</tr>
</tbody>
</table>

Note:

* This is a minimum figure. Some networks provided an approximate number, usually in the form of ‘more than’.

Source: Data from BBAA member networks
### Table 4. Number of previous rounds of finance raised from this Network

<table>
<thead>
<tr>
<th>Number of rounds</th>
<th>2008/9</th>
<th>2009/10</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number</td>
<td>number</td>
<td>%</td>
</tr>
<tr>
<td>0</td>
<td>85</td>
<td>59.0</td>
</tr>
<tr>
<td>1</td>
<td>33</td>
<td>22.9</td>
</tr>
<tr>
<td>2</td>
<td>9</td>
<td>6.2</td>
</tr>
<tr>
<td>3</td>
<td>3</td>
<td>2.1</td>
</tr>
<tr>
<td>4</td>
<td>5</td>
<td>3.5</td>
</tr>
<tr>
<td>5 and more</td>
<td>9</td>
<td>6.2</td>
</tr>
<tr>
<td>Total</td>
<td>144</td>
<td>100</td>
</tr>
<tr>
<td>Missing</td>
<td>81</td>
<td>78</td>
</tr>
<tr>
<td>Total</td>
<td>225</td>
<td>100</td>
</tr>
</tbody>
</table>

Source: data from BBAA member networks

### Table 5. Stage of investment

<table>
<thead>
<tr>
<th>Stage</th>
<th>2008/9</th>
<th>2009/10</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>number</td>
<td>%</td>
</tr>
<tr>
<td>Seed</td>
<td>6</td>
<td>2.7</td>
</tr>
<tr>
<td>Start-up</td>
<td>58</td>
<td>26.8</td>
</tr>
<tr>
<td>Early stage/early growth</td>
<td>96</td>
<td>43.1</td>
</tr>
<tr>
<td>Expansion</td>
<td>30</td>
<td>13.4</td>
</tr>
<tr>
<td>Late growth</td>
<td>9</td>
<td>4.0</td>
</tr>
<tr>
<td>Established</td>
<td>7</td>
<td>3.1</td>
</tr>
<tr>
<td>Turnaround</td>
<td>11</td>
<td>4.9</td>
</tr>
<tr>
<td>Management buyout</td>
<td>2</td>
<td>0.9</td>
</tr>
<tr>
<td>Other</td>
<td>4</td>
<td>1.8</td>
</tr>
<tr>
<td>Total</td>
<td>223</td>
<td>100</td>
</tr>
<tr>
<td>Missing</td>
<td>2</td>
<td>-</td>
</tr>
<tr>
<td>Total</td>
<td>225</td>
<td>100</td>
</tr>
</tbody>
</table>

Note: Late growth category eliminated in 2009/2010

Source: data from BBAA member networks
Table 6. Investment activity by Scottish angel groups

<table>
<thead>
<tr>
<th></th>
<th>2008/09</th>
<th>2009/10</th>
<th>Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>A: Number of investments</td>
<td>74</td>
<td>78</td>
<td>+4</td>
</tr>
<tr>
<td>Total amount raised</td>
<td>£27.6m</td>
<td>£27.5m</td>
<td>-£0.1m</td>
</tr>
<tr>
<td>Total angel investment</td>
<td>£17.9m</td>
<td>£18.2m</td>
<td>+£0.3m</td>
</tr>
</tbody>
</table>

B

<table>
<thead>
<tr>
<th></th>
<th>2010</th>
<th>2011</th>
<th>2012 (Q1-Q3) [* 2011 Q1-Q3]</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of investments</td>
<td>105</td>
<td>78</td>
<td>59 [54]</td>
</tr>
<tr>
<td>Number of companies funded</td>
<td>65</td>
<td>56</td>
<td>49 [43]</td>
</tr>
<tr>
<td>Total amount raised</td>
<td>£32.8m</td>
<td>£34.7m</td>
<td>£15.6m [£12.4m]</td>
</tr>
<tr>
<td>Total angel investment</td>
<td>£12.5m</td>
<td>£12.2m</td>
<td>£10.1m [£7.4m]</td>
</tr>
<tr>
<td>Investments by other private investors</td>
<td>£11.4m</td>
<td>£14.2m</td>
<td>£5.5m [£4.9m]</td>
</tr>
<tr>
<td>Investment by the public sector</td>
<td>£8.9m</td>
<td>£8.3m</td>
<td>£6.2m [£6.1m]</td>
</tr>
</tbody>
</table>

Source: LINC Scotland


<table>
<thead>
<tr>
<th>Amount invested in 2009/10 compared with 2008/09</th>
<th>Number of angels</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>More than in 2008/09</td>
<td>47</td>
<td>34.8</td>
</tr>
<tr>
<td>Less than in 2008/09</td>
<td>43</td>
<td>31.9</td>
</tr>
<tr>
<td>About the same</td>
<td>45</td>
<td>33.3</td>
</tr>
<tr>
<td>Missing</td>
<td>12</td>
<td></td>
</tr>
</tbody>
</table>