

ANGEL INVESTING IN AN AUSTERITY ECONOMY – THE TAKE-UP OF GOVERNMENT POLICIES IN PORTUGAL

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ABSTRACT.

Business angels are recognized in both developed and emerging economies as playing a significant role in stimulating entrepreneurial activity. With the decline in both bank lending and venture capital investment since the onset of the global economic crisis government efforts to stimulate business angel activity have become a more significant component in strategies to increase the level of entrepreneurial activity in Europe. This paper examines the responsiveness of angels to such initiatives in so-called austerity economies – countries that were hardest hit by the financial crisis of 2008 and subsequent global recession and, as a consequence, had to take extreme economic and fiscal measures to reduce their budget deficits. We examine this question in Portugal which experienced one of the deepest recessions in the European Union following the implementation of severe austerity measures. This study confirms that government intervention to support angel investing can have a positive impact. However, the different types of intervention have varied in take-up rates. Other countries can learn from the Portuguese experience in three ways: the types of interventions that have the highest and lowest levels of take-up, the link between the design and the take-up of incentives, and types of intervention that should be considered but have not been implemented in Portugal.

Key words: austerity, entrepreneurship, entrepreneurial finance, business angels, government policy

1. INTRODUCTION

Business angels (BAs) are recognized in both developed and emerging economies as playing a significant role in stimulating entrepreneurial activity. After family and friends, angel investment is the largest source of external equity financing at the start-up and early growth stages (Sohl, 2012; EBAN, 2016). In addition to the provision of capital, business angels – who are typically experienced business people or successful entrepreneurs - also contribute their experience, knowledge, skills and contacts to the ventures in which they invest. This contribution is particularly important in the earliest stages of the venture when the management team is very likely to be incomplete and inexperienced. Business angels have become an even more significant source of finance for entrepreneurial businesses since the onset of the global financial crisis in 2008. This is for two reasons, First, the financial crisis severely damaged the lending capability of banks, resulting in harsh credit rationing (ECB, 2013). In parallel, venture capital firms shifted their focus to later stages of investment where returns are higher, and it is easier to raise new funds, thereby widening the early stage funding gap (Mason, 2009; OECD, 2011; Sohl, 2012). Second, there is evidence from both Europe and the USA that, in contrast to the availability of bank lending and venture capital investing, angel investment activity remained fairly stable during the financial crisis and has increased since 2008-9 (Mason and Harrison, 2015; Sohl, 2016; EBAN, 2016).

The focus in this paper is on business angel investment activity in austerity economies. The decline in tax revenues which followed the financial crisis which began in 2008 exposed many countries in the European periphery – notably Greece, Italy, Portugal, Ireland and Spain – to unsustainable public sector budget deficits. Meanwhile soaring yields on sovereign bonds made it impossible for these countries to borrow in international markets. In order to receive bail-outs from the European Union (EU), European Central Bank (ECB) and International Monetary Fund (IMF) these countries were forced to introduce austerity measures to reduce government debt. These measures have had adverse impacts on economic growth, investment and employment, unemployment and welfare.

The paper addresses three questions. First, do business angels continue to invest in situations of extreme economic crisis? The financial crisis and austerity measures imposed by the EU, IMF and ECB have caused deep recessions in these countries. There are several possibilities for how this might have affected angel investing. On the supply side the low returns from conventional asset classes might have stimulated high net worth individuals to seek alternative investments offering the potential for higher returns, albeit coupled with higher risks. Valuations will also have fallen, reducing the size of investments. Both factors might have resulted in an increased interest in investing by angels. Meanwhile, the decline in bank lending may have overcome the natural aversion of entrepreneurs to equity financing, forcing them to seek business angel investment, thereby raising demand for equity finance and, in turn, increasing investment opportunities. However, operating in the opposite direction, reductions in wealth as a result of increases in personal taxes, reduction in asset values and low liquidity of assets, combined with an increase in the perceived risks of investing in early stage companies, will have discouraged angel investing. Meanwhile, if wealthy investors have increased the off-shoring of their wealth this will have reduced the liquidity of potential investors. No evidence currently exists on the nature and scale of angel investing in any of the austerity economies.

Second, what has been the effectiveness of policies to promote angel investing in austerity economies? For the reasons noted earlier, policy makers in various countries have seen business angels as the best means of addressing the persistent and growing funding gap in the seed and early-stage financing market (OECD, 2011). (Whether this is a correct assessment is a separate issue). On the supply-side this includes tax incentives, co-investment funds, angel networks, training of angel investors, the formation of associations or federations and the creation of appropriate legal conditions for business angels. Policy actions on the demand-side have addressed investment readiness issues in order to improve the number of investable opportunities that business angels receive (Mason, 2009; OECD, 2011). These initiatives have increased since the onset of the financial crisis to offset the diminished investment capacity of financial institutions. Portugal already had a network of business angel networks (BANs) in place to enhance the ability of angels to find deals and for entrepreneurs seeking finance to locate angels (Bilau and Sarkar, 2016). It has subsequently introduced fiscal incentives and a co-investment fund. However, it remains unclear how effective such interventions are in

supporting angel investing in austerity economies. This paper does not undertake an evaluation in the strict sense of the term. Rather, it examines the responsiveness of angels to the various initiatives that have been introduced in Portugal.

Third, is the policy mix appropriate? We obtain the views of business angels regarding the measures that have been introduced. What are the most and least valued types of support? Do angels think that existing measures need re-designed? Are there other forms of support, perhaps implemented in other countries, that might encourage angel investing under conditions of austerity? And given the well-documented heterogeneity of business angels (Avdeitchikova 2008; Lahti, 2011; Mason et al 2016), which measures command widespread support and which ones are favoured by specific types of business angels? Two caveats are appropriate. First, just because business angels say that they have a preference for particular initiatives does not mean that they will make use of them. Second, those instruments that are most favoured by business angels may not be the ones that have the greatest economic impact.

The study is undertaken in Portugal which suffered one of the deepest economic recessions in the European Union over the crisis years (2008-2012). It was forced to implement an austerity programme as a condition for a €78bn bailout from the European Union, European Central Bank and International Monetary Fund. This resulted in cuts in wages and welfare programmes, combined with tax increases, which have eroded family incomes and domestic demand. Meanwhile small and medium-sized enterprises have struggled to find credit and where it is available interest rates are high, which has reduced the ability of the sector to create jobs. This has resulted in both high unemployment and high levels of migration (at its highest level since the 1960s), especially of skilled workers (Financial Times, 2014a; 2014b). The country exited from the bailout in May 2014. Since then it has successfully returned to the international bond market and there are signs that is emerging from recession (Financial Times, 2014b). Indeed, the economy grew at 0.9 per cent in 2014, the first full year growth since 2010.

The remainder of the paper is structured as follows. In the next section we review the literature on policy interventions to support the development of the business angel market. Section 3 provides an overview of Portuguese economy since the financial crisis, followed by and a brief discussion of the implications for the financing environment for SMEs. It also details the measures that have been introduced in Portugal since the onset of the financial crisis to promote business angel investment activity. Section 4 describes how the sample was compiled and the procedures used to obtain data. The results of our analysis are presented in Section 5. Section 6 contains the conclusions and policy implications.

2. POLICY INTERVENTIONS TO SUPPORT THE DEVELOPMENT OF BUSINESS ANGEL INVESTING

The rationale for Government intervention to support business angels is that there are inefficiencies in the operation of the market which create barriers to their investment activity. This limits the potential economic impact of their investments and hands-on support on entrepreneurial activity. An international review of policies to stimulate the business angel market identifies five main approaches to increase the supply of angel investment and one initiative to increase investment opportunities (Mason, 2009; OECD, 2011) (Table 1). However, the available evidence does not consider whether such initiatives are effective or even suitable in conditions of economic austerity, nor whether alternative initiatives might be more appropriate.

TABLE 1 ABOUT HERE

The most common initiative is fiscal incentives. These are intended to alter the risk-reward balance in investing in new and recently started businesses by reducing the high risks of such investments. These can be structured in several ways: tax relief on the amount invested, exemption of capital gains tax, tax deduction or rolling over for losses, and reinvestment relief on capital gains. Tax incentives are argued to achieve net economic benefits as a result of the economic activity that is generated (investment, creation of firms and jobs

and economic growth) (Boyns et al., 2003). However, Carpentier and Suret (2016) argue that there is limited evidence to confirm a positive outcome, with tax expenditures on incentives for business angels generally exceeding tax revenues when additionality and displacement are considered. There is also evidence (Boyns et al., 2003, Mason et al., 1988, Mason, 2009) that fiscal incentives attract passive investors (without expertise and contacts) and encourage financial intermediaries to find loopholes to distort the scheme in an effort to reduce investment risks. By reducing the cost of failed investments they may also discourage some angels from undertaking a thorough evaluation of investment opportunities. Moreover, they do not address the problem of the difficulty that business angels have in finding suitable investment opportunities. A further issue is that the sensitivity of business angels to tax may not be the same across countries (compare UK and Germany: Mason and Harrison, 1999, 2000; Stedler and Peters, 2003). Finally, they can be criticized on equity grounds for only benefitting wealthy individuals.

Business angel networks (BANs) are the longest established initiative to support business angels. They address the high search cost incurred by both entrepreneurs and angels on account of their invisibility to one another which creates discouragement effects (Mason and Harrison, 1999; 2002; Mason, 2009; Wetzel, 1987). BANs may also take on the role of facilitating co-investment between business angels. Evidence on their effectiveness is mixed (Harrison and Mason, 1996; Mason and Harrison, 1999; 2002; Knyphausen-Aufseß and Westphal; 2008; Collewaert et al, 2010) and they have not necessarily resulted in an improvement in the quality of deals that angels receive (Mason and Harrison, 1999). BANs have found it difficult to be financially self-sustaining. Consequently, withdrawal of public sector financial support has typically resulted in their demise. National and international federations of BANs have sought to develop professional standards for angel investing, provide a platform for the dissemination of best practice, organize specific training activities and promote angel investing to build awareness and engage with government (European Commission, 2003; EBAN, 2008a; OECD, 2011).

Co-investment funds have been created to address a new equity gap resulting from the shift of venture capital to larger deals. They operate on the basis of a public fund investing alongside a private investor on the same terms and conditions (*pari passu*), thereby enabling larger investments to be made. Critically, this reduces the need for angels to seek follow-on investments for their investee companies from venture capital funds (VCFs). Investing alongside VCFs creates difficulties for angels on account of the different investment instruments which VCFs use (notably, liquidation preferences, anti-dilution rights, special subscription rights and enhanced follow-on rights) and their different investment motives (notably the maximization of the fund's returns rather than for every investment to be profitable) (Peters, 2009). In some schemes the private investment partners (either angel groups or venture capital funds) are pre-approved. In other cases the co-fund will make its own decision on each deal that it is presented with. Several European countries and regions now have co-investment schemes The European Investment Fund currently operates a co-investment fund through its European Angel Fund (EAF) in Austria, Denmark, Germany, Ireland, the Netherlands and Spain. In the future, the EAF will be extended to other European countries and/or regions.¹ Because co-investment funds are relatively recent assessments are scarce. The exception is the Scottish Co-investment Fund (SCF) which was established in the early 2000s in response to the dearth of venture capital in the aftermath of the post-2000 technology crash. An evaluation concluded that it had stimulated the number of investments and made viable investments that in its absence would not have been made, especially larger investments that would require significant follow-up funding. This assessment also highlighted the positive impact that the SCF had on the companies it supported in terms of turnover, gross value added and employment (Hayton et al 2008). In addition, co-investment funds can help develop the business angel market by attracting new angels and increasing the investment capacity of existing angels and professionalize the angel investment market by providing a more structured investment process (OECD, 2011). An assessment of the early operation of the UK Angel Co-Investment Fund concluded that it had played an important role in expanding the size of the funding round, thereby preventing the risk of 'drip' funding and in some cases avoiding the need for angels to bring a VCF into the deal. However, it had little impact on the formation of angel groups or the dissemination of good practice (Owen and Mason 2016). It follows that a key pre-requisite for a successful co-fund is

¹ http://www.eif.org/what_we_do/equity/eaf/

suitable investment partners (OECD, 2011; Mason, 2009). The design of co-investment schemes therefore needs to take account of local conditions (OECD, 2011).

Business angel training is another form of intervention that can contribute to developing the business angel market. The stereotype of a business angel is a successful business-person with considerable business and entrepreneurial experience and hence with no need for training. However, the business angel population is not confined to this investor stereotype (Avdeitchikova, 2008). Moreover, investing in start-ups is a specialized skill, with the recognition and evaluation of opportunities and the structuring of an investment all requiring specialist knowledge. Indeed, it has been established that angels (both active and passive) feel the need to improve their investment skills (San Jose et al., 2005). Training courses can therefore contribute to the professionalism of existing angels and attract new angels. Training can be delivered through one-off seminars and workshops organized by BANs or angel associations (some of which, like *The Power of Angel Investing*, are now licensed) or by “Business Angel Academies” which provide regular training programmes over a semester (San Jose et al, 2005). Previous research indicates that business angels prefer to learn from experienced angel investors and short workshops as opposed to longer courses (Centre for Strategy and Evaluation Services, 2012).

Fifth, securities legislation defines the necessary conditions for the promotion of particular investments or engage in investment activity that protects investors in unquoted companies from less scrupulous promoters. The process, which in the EU is referred to in community directives, involves the prior approval of the investment document by an entity certified for the purpose. It has costs for the applicants. While the intention underlying this legislation is praiseworthy, if the conditions for the promotion of particular investments or to engage in investment activity are too demanding or costly, they can become a barrier to the flow of information from small businesses looking for finance to business angels (Mason, 2009). This, in turn, will reduce both the investment opportunities in those companies and the frequency of business angel investments. Various countries therefore define a category of investors – often termed accredited investor and defined in

terms of their net worth individual or sophisticated investors – who are permitted to receive invitations to invest that are not required to be pre-approved. In various EU countries, the investments that are promoted by not-for-profit BANs to accredited investors are exempted from securities legislation on the grounds that they do not have any pecuniary interest in the outcome of investments and based on the understanding that they do not give any investment advice or recommend particular investments.

Finally, the main initiative on the demand side is investment readiness programmes which seek to address the barriers which constrain the supply of investable opportunities (Mason and Kwok, 2010). This has three dimensions. First, many entrepreneurs are reluctant to raise equity finance because it means surrendering some ownership and control. This aversion to equity may be related to the entrepreneur's lack of information about the characteristics and availability of alternative sources of finance. The consequence is that many potentially investable projects do not come forward as potential recipients for finance. It is argued that with a better understanding of the role of different sources of finance in business development more entrepreneurs would consider seeking equity finance. Second, the businesses that seek finance do not meet the requirements of investors. In many cases this reflects information failure. Relatively few entrepreneurs understand what is needed to attract external equity capital and how to meet the requirements of investors. Third is presentational failings. Even if the underlying proposition is sound, a business may still fail to raise finance if the business plan is poorly constructed and presented (Mason and Harrison, 2003; Clark, 2008). This includes shortcomings in business plans and other written documents that are aimed at investors and deficiencies in 'pitches' at investment forums. There is evidence that BANs which run investment readiness programmes have a significantly higher rate of conversion of companies presented to investors to investments made. However, they also have significantly lower conversion rates from business plans received to companies presented to investors. This suggests that BANs which provide specific investment readiness training are either more selective in the investment opportunities they present to their investors (through the work of their gatekeepers or expert committees that screen the deals) or that businesses are deterred by the increased requirements made of them. In either event, networks offering investment readiness training are, as a

consequence, relatively more successful in securing investment for those companies, and the business's chance of success of raising finance is greatly enhanced (Mason and Harrison, 2010)

3. THE PORTUGUESE ECONOMY SINCE 2008: AN ECONOMY UNDER AUSTERITY

3.1. The Austerity Package

The economic crisis and international financial crisis that erupted in 2008 exposed the underlying weaknesses in the Portuguese economy – notably slow economic growth, trade imbalances and a large deficit in its public finances. By April 2011 the worsening of tensions in the sovereign debt markets and the growing macroeconomic imbalances meant that its banks (which were amongst the least profitable in Europe) lost access to the international wholesale debt market. Faced with this impending cessation of funding the Portuguese government was forced in May 2011 to negotiate a financial assistance package with the EC, ECB and IMF. This comprised a financing package of €78 billion which was provided on the basis of a three-year policy programme that contained structural reforms, fiscal measures to reduce the public debt and deficit below 3% of GDP, and measures to ensure the stability of the country's financial system (EC, 2011).

The package of austerity measures which the Portuguese Government was forced to implement between 2008 and 2012 was of a severity that the country had hitherto never experienced. With the primary goal of fiscal consolidation in mind, the Portuguese government also sought to stabilize the financial sector. It undertook the nationalization (and subsequent sale) of the bank BPN whose accumulated losses were around €700 million. Several measures to strengthen the liquidity and solvency of the country's banks were also taken, including imposing higher capital adequacy ratios, the creation of a solvency support fund and a reinforcement of the supervisory and regulatory framework. The adjustment package also included wide-ranging expenditure reductions and revenue enhancement measures. On the expenditure side, the measures encompassed cuts in the government's wage bill, involving cuts in the wages of government employees and reductions in number of employees hired in central, regional and local governments. Cuts in social transfers were also imposed (special contributions for pensions above EUR 1500, suspension of the rule of pension indexation, reduction

in public expenditure in the health system, reduction of social benefits). Rail and road investments were postponed. On the revenue side, the government increased the VAT rate by 2 percentage points, rationalized the VAT structure, including increasing VAT on electricity and gas by 6 percentage points to 23%, updated excise taxes, raised taxation on personal incomes, broadened social security contributions and introduced tolls on motorways (OECD, 2012). Other aspects of government policy intervention mandated by the adjustment program were reforms of the labour market, the judicial system, housing and services sectors, and the privatization of major companies in the utility sector and airports, all with a view to strengthening the economy's growth potential, improving competitiveness and facilitating economic adjustment (OECD, 2012). Other changes have included the easing of product and labour market restrictions and tax reforms including a reduction in corporation tax.

This austerity package resulted in a sharp drop in economic activity, especially on investment and consumption measures. By the last quarter of 2012 the GDP had declined to over 8 per cent below the 2008 level. Investment by Portuguese companies also registered a sharp decline each year from 2009 and 2012. This reduction was marked by a sharp contraction in domestic demand during that period. The labour market also deteriorated significantly, with the unemployment rate more than doubling from 7.6 % in 2008 to 15.7% in 2012 and reached 17.5% a year later. Amongst young people the unemployment rate in 2012 was 37.7 % (Bank of Portugal, 2013). Wages fell and taxes increased. During this period Portugal also experienced the return of outmigration at an intensity not witnessed since the early 1960s, comprising mostly young educated and skilled workers. Entrepreneurship has been another escape route from unemployment. In 2012 the total early-stage entrepreneurial activity rate (TEA) reached 7.7%, representing a dramatic increase of 4.5% from 2010 figures, with the highest entrepreneurship rates occurring among 25–34 year olds (TEA 10.6% in 2012 (GEM Report Portugal, 2010; GEM Report Portugal, 2012). These new entrepreneurs have been mainly improvement-driven opportunity-motivated (58.3% in 2012). However, despite this high rate of new firm creation, mortality was even higher, meaning that during this period there was a net reduction in the overall number of businesses (Bank of Portugal, 2012). The number of companies decreased among all size classes, with this fall greatest amongst small and medium enterprises. Many surviving companies were in a precarious

situation. Since 2008, Almost 1 in 3 surviving companies are overdue with their bank payments and bad loans continue to rise, accounting for 11% of total bank lending. These are ‘zombie’ companies that are being kept artificially alive by the banks who prefer to roll over these loans than to take a hit on their equity and bottom lines (Financial Times, 2014a).

These austerity measures have resulted in some progress in the adjustment process of the Portuguese economy, including a gradual reduction of the budget deficit, an increase in GDP, increased consumer confidence, rising employment, and declining unemployment, although this is still high (13%). Emigration also remains at a high level (Financial Times, 2014a; 2014b). The tax burden continues to be high, at 45.2% of GDP. In summer 2014 Portugal successfully exited from the bailout programme. However, not long after, one of the country’s major banks collapsed, raising questions about the extent to which the austerity programme has addressed the country’s deep-rooted structural problems (Financial Times, 2014b).

Looking specifically at the impact on access to finance by SMEs, the difficulty of the Portuguese banks in obtaining funding on account of the high interest rates in the sovereign debt bond markets as well as the need to reduce the ratio of loans/deposits, have combined to reduce the financing capacity of the banking sector since 2008. Hence, from the beginning of the crisis there has been an ongoing decrease in loans (new business) as a percentage of GDP and a tightening of other lending conditions (Bank of Portugal, 2013). The interest rate spread has increased continuously since 2008, and was, on average, 2.5 percentage points above the other countries facing financing difficulties (Spain, Ireland, Italy) and 3 percentage points above the eurozone average. In the case of new loans up to €1M (which are intended mainly for SMEs) Portugal, along with Greece, has had the highest interest rates in the Eurozone (Jevčák and Briciu 2013). There has also been a significant decline in venture capital activity in Portugal since 2008, with investment activity in 2012 little more than half the 2008 total. Moreover, this investment was dominated by buyouts: “capital growth” and “start-up” investments were respectively just 14% and 5% of total VC investment.

The Portuguese Government has responded to these funding shortfalls with a variety of measures. In order to facilitate the access of SME to bank credit several state guaranteed credit lines were created (IFD, 2013). Short term credit insurance was also made available to support and stimulate export activity. These guarantees had a utilization rate of 89% in 2012 (IFD 2013). Government intervention also extended to the venture capital market. In 2011 it reformed the public risk capital system, merging three existing operators (Inov Capital, Global Capital Aicep and Tourism Capital) into a single entity (Portugal Ventures). The new entity was created with an endowment of EUR 140 million of available liquidity to fund innovative projects in areas such as biotechnology, pharmaceuticals, information technology, communications and electronics, tourism, maritime economy, forest or agro-industry, energy efficiency; and also for equity participation in companies with export and attract foreign investment vocation. Measures were also introduced to stimulate business angel investment activity. These are considered in the next section.

3.2. The Portuguese policy environment for business angel investing

Portugal has 10 BANs and two national business angel associations. This is a similar number to countries such as Sweden, Switzerland, The Netherlands and Italy (OECD, 2011). These BANs are based in each of the regions on the mainland (there are no active BANs in the islands of the Azores and Madeira). Some of the BANs are located in the major cities (e.g. Oporto) while others cover smaller inland towns. The range of services offered varies quite considerably between the various BANs (Bileau and Sarkar, 2016). There are also two national business angel associations. The Portuguese Association of Business Angels (APBA), based in Lisbon, was created in 2006 with the mission of stimulating business angels and entrepreneurship activity and supporting the development of regional and sector networks. It performs a dual role as it operates both as the Federation of Business Angel Networks and as well as a Business Angel Network, but so far has essentially played the role of a BAN focusing on innovative start-ups in Greater Lisbon. The Portuguese National Federation of Business Angels (FNABA) was created in 2007 by a group of BANs, with the mission of representing the interests of regional networks established in Portugal. Based on information reported to EBAN, these groups had a total membership of 562 angels in 2012 (cited in Bileau and Sarkar, 2016).

In 2007, prior to the crisis, the APBA and FNABA had worked with the Portuguese government to develop a specific legal framework for business angels operating in Portugal. This recognized the Business Angel as a specific type of investor (ICR - Investor in Risk Capital) with a similar legal framework to that of venture capitalists. This allows the possibility of making investments as individual investors or by adopting the status of a single person company so as to be able to distinguish the assets allocated to risk capital from the remainder of their personal assets, which is required by the need to guarantee transparency. ICRs are subject to the regulatory framework of financial services and markets set out in the EU's Markets in Financial Instruments Directive (MiFID) and supervised by the Portuguese Securities Market Commission (CMVM). Following the onset of the crisis APBA and FNABA again worked with the Portuguese government to introduce two specific measures to support business angels. These are the Business Angels Co-Investment Fund, launched in late 2009, and a 20% tax relief for business angel investments introduced in the 2010 State Budget.

The introduction of a co-investment fund was prompted by the low level of early stage investment by the venture capital industry. The COMPETE Business Angels Co-Investment Fund is an initiative of the COMPETE Programme (with European Funding). In December 2009 54 new Business Angel IVE (Investment Vehicle Entities) were approved from 67 applications. These are companies that are owned by business angels that will invest in start-ups. A total of 267 angels are involved. Their total investment capacity is €42m, with €28m from COMPETE, €12.5m from business angels and €1.5m from Caixa Capital (the venture capital unit of the CGD Group – a Portuguese Bank). The funding from COMPETE to the IVE is provided as a 10 year loan. However, there is no interest or capital return guarantee. Business angels are not personally liable for repayment of the amount of the loan to the IVEs. The maximum loan per IVE is 65% of their total investment requirements up to a maximum of €500.000 for each IVE. Repayment is structured as follows. Until the total investment of business angels has been returned, the payback is distributed asymmetrically (business angel: 80% / COF: 20%) . Once the business angels have had their full investment

returned, distribution is symmetric until COMPETE's loan is recovered in full (business angel: 50% / COF: 50%). After business angels and COMPETE have received back their investments, distribution is proportionate (business angel: 80% / COF: 20%). Start-ups must be from the Alentejo, the Centre Region and the North region. Businesses located in Lisbon and the Algarve are excluded from this programme.

The taxation regime differs according to whether the business angel activity comes under the scope of ICR - Venture Capital Investor (single person company) or is made as an individual investor. In the former case the ICR is subject to company income tax of 25% of taxable income and a municipality tax up to 1.5% of taxable income. Capital gains are exempted from tax if the shareholder owns 10% or more of the company and the investment period is longer than one year. Shareholders' profits are retained at 20% by withholding tax or added in the amount of 50% to their personal income taxation. For the individual investor, dividends are retained at 20% by withholding tax or taxed at 50% and added to the investor's personal income taxation. Capital gains are exempted from tax if the investment period is over one year. In 2010, the Portuguese State Budget approved a 20% tax relief for business angel investments applicable to both the ICR and the individual investor. However, because of the worsening fiscal position of the country this benefit was combined with other tax benefits in the following year, which in practice has significantly reduced the value of this tax incentive.

4. DATA SOURCES

The difficulty of constructing representative samples of business angels is well documented (Wetzel, 1981; Mason and Harrison, 2008; Mason, 2016). Because of their invisibility researchers have typically had to rely upon samples of convenience. Two sources were used to gather a sample. Working through the Portuguese Association of Business Angels (APBA) and Portuguese Federation of BANs (FNABA) we obtained the agreement of the managers of the 10 local and regional BANs covering the whole of the country to send an e-mail to investors registered with their service, which described the aims of the study and provided a link to the online questionnaire. In the six weeks that followed the e-mail (November-December 2012), 59 valid

responses were received (plus seven invalid responses). In addition, we obtained a further 30 responses from angels attending meetings at BANs in six cities across Portugal during the entrepreneurship week in November 2012. These meetings were open to all business angels and not just to BAN members. This approach has minimized two potential sources of bias from the sample. First, by including respondents from all of the BANs in Portugal (large and small, local and regional, inland as well as coastal) this will have minimized the inherent bias in drawing samples from just one BAN (Mason and Harrison, 1997). Second, respondents include angels who are members of BANs as well as those who are not.

The survey instrument comprised closed questions that asked investors to report about the following:

- investor characteristics: personal and experience background;
- investment activity: number, amounts and results of investments made in the previous five years (since the onset of austerity in 2008), and forecasted number and amounts of investments to be made in the following year;
- use of the new government measures to support business angels in Portugal (tax benefits; co-investment funds);
- other Government measures that are required to develop the business angel market in Portugal.

The questionnaire was piloted with eight business angels identified through informal contacts and recommendations by BAN managers. This resulted in modifications being made to the original survey instrument.

A meaningful response rate cannot be calculated. First, the number of e-mails sent by those in charge of the National Association and Federation (and sent back by BANs) is not known. Second, the number of business angels in the audience of attendees at the meetings is also not known. However, as noted above, the BANs had a total of 562 angel members in 2012. This suggests that our total number of responses (89), represents around 15% of the visible Portuguese business angel population at the time that the survey was undertaken. Non-

response bias was addressed by means of the procedure suggested by Freear et al. (1994) regarding comparison of early and late respondents online. This did not reveal significant differences.

There are two important limitations to the data that have been collected. First, there is no evidence on the scale of investment activity by respondents prior to the onset of the crisis in 2008. Second, it is possible that in cases where angels co-invested with other angels in the same investment that different angels will be reporting on the same deal.

5. BUSINESS ANGELS IN PORTUGAL: AN OVERVIEW

The characteristics of respondents are shown in Table 2. Portuguese business angels match the profile that has been established in other studies of business angels. Most Portuguese business angels are male (94%) and 41-60 years old (62%). They have a high level of education (90% have at least a first degree). The overwhelming majority have management experience, with over two-thirds having more than 10 years of experience in industry. Most have entrepreneurial backgrounds (with 80% having founded two or more businesses).

TABLE 2 ABOUT HERE

Responses were received from business angels located in 14 of the 18 districts of mainland Portugal. The regional distribution of business angels is weighted towards Lisbon (34%) and Porto (15%) which are the two wealthiest and most developed districts in Portugal. However, the fact that half of the respondents are located in the remainder of the country confirms that, as reported in other countries (e.g. Gaston, 1989; Avdeitchikova, 2009), angel investors are widely distributed geographically.

Just under three-quarters (73%) of respondents had made at least one investment in the period of austerity (2008-2012). Some 14% did not invest at all in that period, nor were they considering making investments in the following year. Of the remainder, 10% indicated they had not made any investment in that period but foresaw doing so in the next 12 months. The remaining 3% of business angels did not invest and have no specific investment plans but were open to making investments. For those angels who have been active in the austerity era the most common pattern has been to make three or four investments (33% of respondents). These investors typically invested between €100 000 and €250 000 range. The majority of the investments that the respondents made in this period (64%) were still in their portfolios. However, some exits had occurred, with 12% being sold for a financial gain (21% of angels). Of the remainder, 6% were sold at break-even (13% of investors) and 22% had failed (20% of investors). A vast majority (83%) of respondents envisaged making investments in the next 12 months. However, most of these investors expected only to make one investment (31%). A majority of these investors (63%) expected to invest under €100 000.

6. THE TAKE-UP OF GOVERNMENT MEASURES

6.1. New measures

Just under half (45%) of the business angels in the sample have participated in an investment vehicle entity (IVE) approved by the COMPETE business angels Co-Investment Fund (Table 2). Of these, 65% reported that their IVE had made between one and three investments. This compares with 35% whose IVE had not yet made any investments (Table 3). It is, of course, possible that responding business angels are part of the same IVE.

TABLE 3 ABOUT HERE

There were no differences in terms of age between business angels participating in the co-investment fund and those not participating (see Table 2 columns 5-8).² However, differences can be found in terms of education, start-up experience, entrepreneurial experience and industry experience. First, in terms of education, investors participating in the COMPETE programme were more likely have a higher degree (Masters/PhD) (43% cf. 37%). Second, all respondents who participated in the COMPETE programme (and most of those who did not participate) had start-up business experience. However, participants in the COMPETE programme had started more companies (68% had started four or more companies, cf. 33%) but a smaller proportion (38% cf. 47%) were active entrepreneurs at the time of the study. Third, those angels who participated in the co-investment fund had both more industry experience (70% had more than 10 years cf. 63%) and also less industry experience (13% had no experience compared with only 2% of the other group) members.

Of those angels who had made at least one investment in period 2008-2012 (n=65) only 32% said they had taken advantage of the new fiscal incentives. This low proportion is explained by two factors. First, the scheme was only introduced in 2010, hence investments made prior to this date did not benefit. Second, from 2011 onwards an upper limit on all forms of tax relief was introduced. This meant that investors who might have claimed under this scheme did not do so because they had already reached their limit from other forms of tax exemptions. In addition, the tax benefits available for individuals with higher incomes - the income category that would be expected to include most business angels – were cut, thereby limiting their eligibility for tax relief.

6.2. Angel views on incentives needed to stimulate investment activity

Participants were then asked what measures they thought were needed in the present conditions of financial austerity to encourage greater investment activity. They were asked to rate a list 19 specific measures in five

² There were also no differences by region.

different areas (fiscal measures; business angel training; legislative regime; support business angel networks; co-investment schemes) on a 1 to 7 scale (Table 4).

TABLE 4 ABOUT HERE

The results provide clear evidence for the preference of business angels for fiscal measures to encourage investment activity in conditions of austerity. “Reinvestment relief” and “tax relief on the amount invested” were cited by respondents as, respectively, the most important and third most important types of incentives. The one fiscal measure that attracted little support was tax exemptions on income from dividend income. As angels are investing for capital gain rather than income this response is not surprising. Angel investors scored it as the third least attractive measure. Only the provision of training in the specialist knowledge and skills required to invest successfully and support for BANs to run investment forum, fairs and workshops attracted lower scores.

The importance of co-investment schemes was also emphasized by the respondents, with this measure attracting the second highest score. The other measures in the top five were the removal of the restriction on the sale of shares within five years (4th) (contained in the ICR statutory framework) and support for BANs to address the information asymmetry problem caused by the high search cost for entrepreneurs and angels as they try to find one another (5th). Looking in more detail at investors’ views on the activities of BANs there is a consensus that they should focus their activities on improving the efficiency of the investment opportunities (deal flow) rather capacity building activity (investor training) and investment forums, fairs and workshops. Indeed, three of the five lowest scoring measures are related to the activities of BANs. As respondents are mostly quite experienced investors this response is to be expected.

6.3. The implications of the heterogeneity of angels for policy targeting

It is well established that business angels comprise a heterogeneous population (Lathi, 2011; Avdeitchikova, 2008). This provides a challenge to policy-makers because of the likelihood that angels will vary in their responsiveness to specific measures. This section examines whether there are specific characteristics of the angel investors that influence the types of incentives that they do, and do not, favor. Using a Chi-square analysis there were statistically significant differences on both the five most favoured and the five least favoured measures.

TABLE 5 ABOUT HERE

Of the top 5 measures (Table 5), there were two - reinvestment relief and improvements in the efficiency of investment opportunities - that attracted support from all types of angels. There is a clear link between support for passive co-investment funds and the level of experience of the angel investor. This measure was rated higher by more experienced business angels and also by angels with the most experience of investing with co-funds. This statistical difference is also found when controlling for start-up experience, with angel investors who had never started a firm giving less emphasis to this measure. A Kruskal-Wallis Test also revealed a statistically significant difference in support for “tax relief on the amount invested” which was valued most strongly by angels expecting to make smaller investments. Restrictions on the sale of shares was also statistically significant when controlling for the willingness to make future investments and for investment outcomes. Angels who have not achieved any exits were more supportive of this measure than those who had made exits. Angels who expect to make more investments in the future also scored more highly restrictions on the sale of shares than those who were less likely to invest. Two additional controls were also statistically significant: education and the GDP of the region in which the angel lived. Investors from richer regions scored this measure higher than their equivalents from low GDP regions. Angels with no higher education scored this measure lower.

TABLE 6 ABOUT HERE

Only two of the bottom five measures present statistical differences between angels (Table 6). Novice angels rank investment forums, fairs and workshops higher than their nascent and experience counterparts. This could be associated with network effects. Novice angels are likely to have smaller networks than experienced angels, hence they might be expected to give greater emphasis to measures that improve their deal flow. However, nascent angels might have even a smaller network and so could have been expected to value this measure more highly than Novices. The explanation may be that until they start to invest they do not appreciate the value of networks. There were also statistical differences when controlling for age of the investor, with older investors showing less interest in this measure. Providing business angels with specialist knowledge and skills to invest successfully was also given less support by the older age group of investor, presumably because they feel that they have sufficient investment experience when compared with younger investors.

It needs to be acknowledged that some of these findings could be Type II errors, explained by random sampling error or chance (Urdan, 2005). A type II error happens when a false null hypothesis is not rejected. Dougherty (2016) has noted that high significance levels will increase the likelihood of type II error. Hence, some of these results should be further researched to provide a clearer picture of the possible explanations.

7. CONCLUSIONS AND POLICY IMPLICATIONS

Following the onset of the financial crisis in 2008 a number of EU countries with high debt levels were forced to seek bailouts from the EU, ECB and IMF. As a condition they had to make dramatic spending cuts. The austerity measures that were implemented led directly to the deterioration of the financial environment. The consequence was a decline in both bank lending and venture capital investing which, in turn, resulted in depressed economic activity levels. The consequence is that business angels as source of finance for entrepreneurial businesses in such countries, have now become even more significant. Recognising this,

governments have responded by implementing various measures intended to increase business angel investment activity. The paper examines the impact of such intervention in so-called austerity economies – that is, countries in the periphery of the euro zone that has been the worst hit by the financial crisis. Portugal – which suffered one of the most significant economic declines in the European Union in the period 2008-2012 – provided the geographical context in which to examine this issue. Four conclusions can be drawn from the analysis

First, business angels in Portugal continued to invest during the financial crisis. The typical business angel made three or four investments, invested between €100,000 to €250,000. Moreover, some 80% stated their intention to invest in the next 12 months, even though the process of economic adjustment was expected to continue and possibly even worsen over this period.

Second, the impact of the various government initiatives – which is measured here in terms of take-up rates – has varied. In the depths of austerity in late 2009 policy makers launched a co-investment fund for business angels. The initial challenge seems to have been successfully overcome, with a significant number of Investment Vehicle Entities (56) being created involving 267 business angels. Moreover, 45% of business angels now have participated in these IVEs had already made investments. These results have been confirmed by the interim report of COMPETE (2013), which concluded that the investments made by the Portuguese co-investment fund had reached € 8.9m by the end of 2012. There was no significant difference in the participation of business angels in the co-investment fund by region. Highly educated BAs and those with greater investment activity in the years of austerity had the greatest involvement with the co-funds initiative. An unequivocal association is also found between the support received from BANs and the participation of business angels in the scheme. This support was in the form of dissemination, making their members aware of the scheme's advantages, and support in the bureaucratic process of application. This suggests that in a developing business angel market, BANs can play an important role in the success of these types of measures.

However, the tax relief instrument for angel investment in force in Portugal during the period of austerity was less effective, used by less than one-third of investments by business angels. This can be explained by three

factors. The benefit had only been in force two years prior to the study. Tax changes were made in 2011 which capped the tax benefits from this and other schemes, thereby putting a limit the annual amount deductible and tax relief for high income individuals – the income category of most business angels – was reduced.

In summary, although the study confirms that government intervention to support angel investment can have a positive impact (measured in terms of take-up), this needs to be qualified in two respects. Different types of intervention appeal to different types of business angel, with implications for their effectiveness. And the design of incentives influences their effectiveness.

Third, in terms of their preferences for measures to encourage investment activity in the present conditions of financial austerity, business angels expressed strongest support for two types of tax incentives: “tax reinvestment relief” and “tax relief on the amount invested”.. The latter measure is particularly supported by business angels who expect to make smaller investments. This is a dominant characteristic of the business angels in the sample, so the introduction of “tax reinvestment relief” measure in 2010 seems to have been appropriate for the Portuguese context. However, the effectiveness of tax relief was significantly reduced or cancelled out one year after its introduction because of important changes to the taxation regime that were introduced by the State Budget of 2011. There was also support by business angels for co-investment schemes. They indicated a preference for passive co-investment funds in which investment occurs automatically without investment selection filters because it eliminates uncertainty for investors. However, as this has been the model that was implemented it may be the only one that respondents have knowledge of. Business angels also included amongst their most favoured measures the elimination of the prohibition on selling shares within five years.

Finally, Portuguese business angels consider that government support for BANs in period of crisis should be primarily directed to supporting activities that improve the efficiency of market, notably the promotion of investment opportunities to reflect the ongoing significance of information asymmetries in the market. Lower emphasis was given to support for the running costs of BANs and for capacity building activities (e.g. training

for investors). The latter may be a function of the sample which comprises experienced and highly educated angels. However, angels did think that it was important to direct support to the training of young and women business angels.

There are three implications for policy-makers in other austerity economies. First, the angel market continues to operate even in conditions of austerity. Second, the take-up, and hence potential effectiveness, of government intervention varies according to the type of measure. In the case of Portugal fiscal incentives have had a low take-up rate amongst business angels. This may suggest the need to adjust the current eligibility conditions for tax relief on the amount invested, or replace it with tax re-investment relief which was the measure of a fiscal nature most highly valued by business angels. The co-investment fund was only implemented two years before the survey hence it was too early to make an assessment of its impact. However, in terms of the take-up (54 IVE with 267 business angels), together with the views of angels on the design of such schemes, it would appear that government's choice of a passive fund is an effective mechanism to stimulate the business angel market in an austerity period. The results also indicate that BANs have played an important role in dissemination and in supporting the participation of business angels in the co-investment fund across different regions (including the poorest regions) and continue to be important in increasing awareness of angel investing. Ongoing Government support for BANs (preferably based on a regional model) is therefore essential. The negative assessment by business angels of some aspects of the new legal framework for business angels is a warning that public authorities should take the needs of business angels into account when new legislation or rules are introduced. Legitimate business angel activity should not be inhibited by legislation. Third, although some measures to promote business angel investment have generic appeal to all types of angels there are others where the appeal, and hence take-up, varies across the business angel population. Key characteristics of angels that differentiate their response to specific measures are their investment experience, age and scale of investing. Two related implications follow. First, active angels and those making larger investments are likely to be the most active in lobbying government, for example, via the angel associations. However, policy-makers have to understand that the measures advocated by these angels may not be appropriate for encouraging nascent and novice angels to invest and so should not be over-influenced by the views of this segment of the angel population. Second, our evidence shows that the

objective of expanding the number of active business angels (i.e. increasing the number of nascent and novice angels) requires different measures from the objective of encouraging existing and active investors to increase their investment activity.

REFERENCES

- Avdeitchikova, S. (2008) 'On the Structure of the Informal Venture Capital Market in Sweden: Developing Investment Roles', *Venture Capital an international journal of entrepreneurial finance*, 10(4): 55–85.
- Avdeitchikova, S (2009) False expectations: reconsidering the role of informal venture capital in closing the regional equity gap, *Entrepreneurship and Regional Development*, 21 (2), 99-130.
- Avdeitchikova, S., Landström, H., & Månsson, N. (2008). What do we mean when we talk about business angels? Some reflections on definitions and sampling. *Venture Capital: an international journal of entrepreneurial finance*, 10(4), 371-394.
- Bank of Portugal (2012). *Análise sectorial das sociedades não financeiras em Portugal 2010/2011*. Estudos da Central de Balanços. Lisboa.
- Bank of Portugal (2013). *Relatório do Conselho de Administração - A Economia Portuguesa em 2012*. Lisbon.
- Bilau, J and Sarkar, S (2016) Financing innovative start-ups in the Portuguese context: what is the role of business angel networks? *Journal of the Knowledge Economy*, 7, 920-934.
- Boyns, N., Cox, M., Spires, R. and Hughes, A. (2003) *Research into the Enterprise Investment Scheme and Venture Capital Trusts*. Cambridge: PACEC.
- Carpentier, C and Suret, J-M (2016) The effectiveness of tax incentives for business angels. In C Mason and H Landström (eds) *Handbook of Research on Venture Capital: Vol. 3. Business Angels*, Cheltenham: Edward Elgar, pp 327-354.
- Collewaert, V., Manigart, S., Aernoudt, A. (2010) Assessment of government funding of business angel networks in Flanders. *Regional Studies*, 44(1), 119-130.
- COMPETE (2013). *Programa Operacional Factores de Competitividade: Relatório Anual de Execução 2012*. Lisbon
- Centre for Strategy & Evaluation Services LLP (2012). *Evaluation of EU Member State Business Angel Markets and Policies*, UK.
- Clark, C. (2008) The impact of entrepreneurs' oral 'pitch' presentation skills on business angels' initial screening investment decisions. *Venture Capital: An International Journal of Entrepreneurial Finance* 10 (3): 257–279.
- Dougherty C (2016) *Introduction to Econometrics* (5th edn). Oxford: Oxford University Press.
- EBAN (2016) European Early Stage Market Statistics 2015. Brussels: European Business Angels Networks.

- EC (2011) . *The Economic Adjustment Programme for Portugal*, Directorate-General for Economic and Financial Affairs, Occasional Papers 79.
- ECB (2013). *Assessing the Retail Bank Interest Rate Pass-Through in the Euro Area at Times of Financial Fragmentation*, ECB Monthly Bulletin article (August), European Central Bank.
- European Commission (2003) *Benchmarking Business Angels*, BEST Report No.1. Brussels: European Communities. Pot OECD, 2011)
- Financial Times* (2014a) Portugal sets course form ‘clean’ bailout exit, 28 January.
- Financial Times* (2014b) Investing in Portugal, FT Special Report, 5th December
- Freear, J., Sohl, J. E. and Wetzels, W. E., jr., (1994) Angels and Non-Angels: Are There Differences? *Journal of Business Venturing*, 9, 109-123.
- Gaston R. J. (1989) *Finding Venture Capital for your Firm: A Complete Guide*. New York: Wiley.
- Gregson, G, Mann, S and Harrison, R (2013) Business angel syndication and the evolution of risk capital in a small market economy: evidence from Scotland, *Management and Decision Economics*, 34 (2), 95-107.
- Harrison, R T and Mason, C M (2000) ‘Venture capital market complementarities: the links between business angels and venture capital funds in the UK’, *Venture Capital: An International Journal of Entrepreneurial Finance*, 2, 223-242.
- Harrison, R. T. and Mason, C. M. (1996) ‘Developing the informal venture capital market: a review of DTI’s Informal Investment Demonstration Projects’, *Regional Studies*, 30, 765-772.
- Harrison, R. T., Mason, C. M. and Robson, P. J. A. (2010) ‘The Determinants of Long Distance Investing by Business Angels: Evidence from the United Kingdom’, *Entrepreneurship and Regional Development* 22, 2: 113-137.
- Hayton, K., Thorn, G., Percy, V., Boyd, C. and Latimer, K. (2008) *Evaluation of the Scottish Co-Investment Fund: A Report to Scottish Enterprise*. Glasgow: Hayton Consulting
- IFD (2013). *Instituição financeira de desenvolvimento: Fundamentação e modelos de criação*. Relatório do grupo de trabalho interministerial, Lisboa, Outubro 2013.
- Jevčák A. and Briciu L. (2013). *Drivers of diverging financing conditions across member states* in Quarterly Report on the Euro Area, Volume 12, N°1.
- Knyphausen-Aufseß, D and Westphal, R (2008) Do business angel networks deliver value to business angels? *Venture Capital: An International Journal of Entrepreneurial Finance*, 10:2, 149-169.
- Lahti, T. (2011) Categorization of angel investments: an explorative analysis of risk reduction strategies in Finland. *Venture Capital: an international journal of entrepreneurial finance*, 13, (1) 49-74
- Mason, C.M. (2009) Public policy support for the informal venture capital market in Europe: A critical review. *International Small Business Journal*, 27 (5). pp. 536-556.
- Mason, C (2016) Researching business angels: definitional and data challenges. In Landström, H and MASON, C (eds) *Handbook on Research on Venture Capital. Volume 3: Business Angels* (Edward Elgar: Cheltenham), pp 25-52.

- Mason, C.M. & Harrison, R.T. (1997). Business angels in the UK: A response to Stevenson and Coveney. *International Small Business Journal*, 15 (2), 83-90.
- Mason, C. M. and Harrison, R. T. (1999) 'Public Policy and the Development of the Informal Venture Capital Market: UK Experience and Lessons for Europe', in K. Cowling (ed.) *Industrial Policy in Europe*, pp. 199–223. London: Routledge.
- Mason, C. M. and Harrison, R. T (2000) 'Influences on the Supply of Informal Venture Capital in the UK: An Exploratory Study of Investor Attitudes', *International Small Business Journal* 18(4): 11–28.
- Mason, C. M. and Harrison, R. T. (2002) 'Barriers to Investment in the Informal Venture Capital Sector', *Entrepreneurship and Regional Development* 14(3): 271–87.
- Mason, C M, and R T Harrison. 2003. "'Auditioning for Money': What do Technology Investors Look for at the Initial Screening Stage?" *Journal of Private Equity* 6 (2): 29–42.
- Mason, C.M., and Harrison, R.T. (2008) Measuring business angel investment activity in the United Kingdom: A review of potential data sources. *Venture Capital: An International Journal of Entrepreneurial Finance*, 10 (4). pp. 309-330
- Mason, C. M. and Harrison, R. T. (2010) *Annual Report on the Business Angel Market in the United Kingdom: 2008/09* (Department of Business, Innovation and Skills)
- Mason, C M and Harrison R T (2015) Business angel investment activity in the financial crisis: UK evidence and policy implications, *Environment and Planning C; Government and Policy*, 33 (1) 43-60.
- Mason, C, and J. Kwok. (2010) Investment Readiness Programmes and Access to Finance: A Critical Review of Design Issues. *Local Economy* 25 (4): 269–292.
- Mason, C, Botelho, T and Zygmunt, J (2016) Why business angels reject investment opportunities: Is it personal? *International Small Business Journal*, online first DOI: 10.1177/0266242616646622
- Mason, C. M., Harrison, J. and Harrison, R. T. (1988) *Closing the Equity Gap? An Assessment of the Business Expansion Scheme*. London: Small Business Research Trust.
- OECD (2011). *Financing high-growth firms: The role of angel investors*. Paris OECD publishing.
- OECD (2012). *Portugal*. In *Restoring Public Finances, 2012 Update*. OECD publishing.
- Owen (Baldock), R and Mason, C, (2016) The role of Government co-investment funds in the supply of entrepreneurial finance: an assessment of the early operation of the UK Angel Co-Fund, *Environment and Planning C: Government and Policy*. Online first. DOI: 10.1177/0263774X16667072
- Peters, B (2009) *Early Exits: Exit strategies for entrepreneurs and business angel investors (but maybe not venture capitalists)*, Meteor Bytes
- San José, A., Roure, J. and Aernoudt, R. (2005) Business Angel Academies: Unleashing The Potential For Business Angel Investment. *Venture Capital: An International Journal of Entrepreneurial Finance*, 7:149-165.
- Sohl, J (2012) The changing nature of the angel market. In H Landström and C Mason (eds) *The Handbook of Research on Venture Capital: Volume II*. Edward Elgar: Cheltenham, pp 17-41.

- Sohl, J E (2016) Angel Investing, *Testimony to the US Senate Small Business and Entrepreneurship Committee on "Searching for Capital: How Venture Capitalists and Angel Investors Fund Entrepreneurs and Startup Companies"*.
- Urdan T C (2005) *Statistics in Plain English*. Mahwah, NJ: Lawrence Erlbaum.
- Wetzel, W E (1981) Informal risk capital in New England, in K H Vesper (ed) *Frontiers of Entrepreneurship Research 1981*, Wellesley: Babson College.
- Wetzel, W. E., Jr. (1987) 'The Informal Risk Capital Market: Aspects of Scale and Efficiency', *Journal of Business Venturing*, 2: 299–313.

TABLES

Table 1. Policy interventions to support business angel investment activity

	objective	barrier	initiative
1	To increase the number of investors and the amount invested	High risk of financial loss	Tax incentives
2	To overcome discouragement effects because angels and entrepreneurs are unable to find another	Angels and entrepreneurs seeking finance are invisible to one another	Business angel networks
3	Increase deal size	Venture capital funds have largely withdrawn from the smaller end of the market creating a funding gap in the €500,000 - €5m range (the maximum that most angels invest and the minimum most venture capital funds will invest	Co-investment Funds
4	To raise knowledge and skills of potential, novice and nascent angels in order to increase their investment activity	Knowledge and competence barriers that discourage high net worth individuals from becoming angel investors	Business angel training
5	To remove barriers to the ability of entrepreneurs to promote their investment opportunities to potential angel investors	Investor protection rules prevents the promotion of investment opportunities to potential investors.	Creation of an 'accredited' or 'sophisticated' investor category who choose to opt out of investor protection.
6	To increase the supply of investable businesses	Because of information asymmetries entrepreneurs do not understand the expectations of investors.	Investment readiness programmes

Table 2. Characteristics of survey respondents

Characteristic		n	%	Compete co-investment status			
				approved applicants N	%	applicants who did not apply or were not approved N	%
Gender	Male	84	94.4	38	95	46	94
	Female	5	5.6	2	5	3	6
	Total	89	100	40	100	49	100
Age	<25 Years	1	1.1	1	3	0	0
	26-30 Years	1	1.1	1	3	0	0
	31-40 Years	18	20.2	6	15	12	24
	41-50 Years	33	37.1	18	45	15	31
	51-60 Years	22	24.7	9	23	13	27
	> 60 Years	14	15.7	5	13	9	18
	Total	89	100	40	100	49	100
Education	Basic education (9 years)	2	2.2	0	0	2	4
	Secondary education (12 years)	6	6.7	0	0	6	12
	Degree	33	37.1	17	43	16	33
	Post-graduate	19	21.3	6	15	13	27
	Master or PhD	28	31.5	17	43	11	22
	Professional qualifications	1	1.1	0	0	1	2
	Total	89	100	40	100	49	100
Occupation	Entrepreneur	38	42.7	15	38	23	47
	Administrator	13	14.6	9	23	4	8
	Director or Manager	9	10.1	4	10	5	10
	Independent Professional	3	3.4	0	0	3	6
	Consultant	12	13.5	7	18	5	10
	Professional Investor	5	5.6	4	10	1	2
	Retired	5	5.6	1	3	4	8
	Other situation	4	4.5	0	0	4	8
Total	89	100,0	40	100	49	100	
Startup Experience	No experience	4	4,5	0	0	4	8
	1 company	12	13,5	3	8	9	18
	2 or 3 companies	30	33,7	10	25	20	41
	4 or more companies	43	48,3	27	68	16	33
	Total	89	100,0	40	100	49	100
Management Experience	Yes	86	96,6	39	98	47	96
	No	3	3,4	1	3	2	4
	Total	89	100,0	40	100	49	100
Industry Experience	No experience	6	6,7	5	13	1	2
	Under 5 years	15	16,9	6	15	9	18
	> 5 years and < 10 years	9	10,1	1	3	8	16
	> 10 years	59	66,3	28	70	31	63
	Total	89	100,0	40	100	49	100

Table 3. Investments made by BAs participating in the COMPETE co-investment Fund

N° of investments made	Frequency	Percent
0	14	35.0
1	8	20.0
2	8	20.0
3	10	25.0
Total	40	

Table 4. Angel views on ways to stimulate BAs investments

Types of measures to stimulate BAs investments	Specifics measures	Mean Score	Rank
Fiscal measures	(a) Tax relief on the amount invested	5.66	3
	(b) Tax exemption on income	4.68	17
	(c) Exemption of capital gains from	5.09	10
	(d) Tax reinvestment relief	5.89	1
Business angel training	(e) Provide BAs with the specialist knowledge and skills they require to invest successfully	4.77	15
	(f) Support training of young BAs (understanding the investment process)	5.18	7
	(g) Support training of women BAs	5.07	13
Juridical regime	(h) Information barriers in legislation (sale of shares within 5 years)	5.59	4
	(i) Information barriers in legislation (bureaucracy, registration and prior notice)	5.46	6
Support business angels networks	(j) BANS' activity of improving the efficiency of investment opportunities	5.53	5
	(k) BANS' activity of raising awareness of the business angel market	5.08	11
	(l) BANS' activity to increase the interaction between BAs and formal venture capital	5.08	11
	(m) BANS' activity to facilitate angel syndicates	4.81	14
	(n) BANS' activity to support the activity of capacity building (investor training)	4.51	18
	(o) BANS' activity to support the activity of promoting investment forums, fairs and workshops	4.77	15
Co-investment schemes	(p) Underwriting BANS' running costs	3.67	19
	(q) Passive co-investment funds	5.84	2
	(r) Actively managed co-investment funds	5.12	9
	(s) Internationalization co-investment funds	5.15	8

Table 5. Most popular measures to stimulate the BA market: - Kruskal Wallis test (Chi-Square statistic /df/Significance level)

Variables (Likert scale 1-7)	Measure Types	Number of investments forecast (next year)	Amount of investment forecast (next year)	Positive Investment Outcome	Negative Investment Outcome	Investment Experience	Experience with the co-fund	Age	Education	Startup Experience	GDP Region:	Industry Experience
(1) Reinvestment relief	Fiscal measures	,712	3,324	,041	,002	1,428	4,980	2,347	1,227	1,868	,096	5,938
		2	2	1	1	2	2	3	2	2	1	3
		,700	,190	,840	,962	,490	,083	,504	,541	,393	,756	,115
(2) Passive co-investment funds	Co- investment funds	4,292	4,351	,319	1,231	6,144	10,264	2,203	3,896	7,469	,897	6,083
		2	2	1	1	2	2	3	2	2	1	3
		,117	,114	,572	,267	,046(*) (a)	,006(**) (b)	,531	,143	,024(*) (c)	,344	,108
(3) Tax relief on the amount invested	Fiscal measures	,915	7,138	2,548	1,575	,715	3,863	2,575	5,992	1,252	,298	2,020
		2	2	1	1	2	2	3	2	2	1	3
		,633	,028(*) (c)	,110	,209	,699	,145	,462	,050	,535	,585	,568
(4) Restrictions on the sale of shares within 5 years	Juridical regime	8,937	4,447	4,114	3,092	3,806	3,673	2,332	6,021	,374	4,467	4,279
		2	2	1	1	2	2	3	2	2	1	3
		,011(*) (c)	,108	,043(*)	,079	,149	,159	,506	,049(*) (b)	,829	,035(*) (f)	,233
(5) Improve the efficiency of investment opportunities	Support BANs	1,093	,669	,866	,000	,369	1,140	1,460	2,222	,396	,117	1,550
		2	2	1	1	2	2	3	2	2	1	3
		,579	,716	,352	1,000	,831	,566	,691	,329	,821	,732	,671

(*) p< 0, 05 (**) p< 0, 01

(a) A Dunn's non-parametric test detected a statistically significant relationship between groups 1 and 3

(b) A Dunn's non-parametric test detected a statistically significant relationship between groups 1 and 2, and groups 1 and 3.

(c) A Dunn's non-parametric test detected a statistically significant relationship between groups 1 and 2

(f) MW u test detected a statistically significant relationship between groups 1 and 2

Table 6. Least popular measures to stimulate the BA market - Kruskal Wallis test (Chi-Square statistic /df/Significance level)

Variables	Measure Types	Number of investments forecast (next year)	Amount of investment forecast (next year)	Positive Investment Outcome	Negative Investment Outcome	Investment Experience	Experience with the co-fund	Age	Education	Startup Experience	GDP Region:	Industry Experience
(1) Underwrite BANs' running costs	Support BANs	5,831	2,912	,118	,239	1,632	,751	4,369	,175	1,275	,082	3,612
		2	2	1	1	2	2	3	2	2	1	3
		,054	,233	,732	,625	,442	,687	,224	,916	,529	,774	,307
(2) Support the activity of capacity building (training for investors)	Support BANs	5,414	1,578	1,653	,057	,639	1,363	5,694	1,017	3,436	,375	3,815
		2	2	1	1	2	2	3	2	2	1	3
		,067	,454	,199	,811	,727	,506	,127	,602	,179	,540	,282
(3) Tax exemption on income	Fiscal measures	5,120	,413	1,854	2,723	,195	2,167	7,548	1,945	3,047	,409	,159
		2	2	1	1	2	2	3	2	2	1	3
		,077	,813	,173	,099	,907	,338	,056	,378	,218	,523	,984
(4) Provide BAs with the specialist knowledge and skills they require to invest successfully	Support for BAs Training	4,191	4,348	,112	,334	4,975	,442	14,018	1,223	2,437	,271	2,637
		2	2	1	1	2	2	3	2	2	1	3
		,123	,114	,738	,563	,083	,802	,003(**)(a)	,542	,296	,603	,451
(5) Promote investment forums, fairs and workshops	Support BANs	3,180	3,971	1,402	,017	10,222	,697	10,475	2,818	2,963	1,136	,179
		2	2	1	1	2	2	3	2	2	1	3
		,204	,137	,236	,898	,006(**) (b)	,706	,015(*) (c)	,244	,227	,287	,981

(*) p< 0, 05 (**) p< 0, 01

(a) A Dunn's non-parametric test detected a statistically significant relationship between groups 4 and 1, and groups 4 and 3.

(b) A Dunn's non-parametric test detected a statistically significant relationship between groups 2 and 1, and groups 2 and 3.

(c) A Dunn's non-parametric test detected a statistically significant relationship between groups 4 and 1, and groups 4 and 2 e 4 and 3.

