

# Public policies to enhance regional entrepreneurship: another programme failing to deliver?

Georgios Fotopoulos  · David J. Storey

Accepted: 13 February 2018 / Published online: 21 April 2018  
© Springer Science+Business Media, LLC, part of Springer Nature 2018

**Abstract** This paper examines public policies aimed at enhancing entrepreneurship. Drawing upon both theory and prior empirical work, it formulates four tests of policy effectiveness and applies them to evaluate the Wales Entrepreneurship Action Plan (EAP). Apart from some short-lived, limited positive effects, we do not find the EAP reached its business formation targets and made no long-run progress towards Wales becoming more entrepreneurial. By analysing local authority districts in Wales and England, we find that the factors influencing changes in rank mobility in regional entrepreneurship were increases in human capital, in-migration, small firm presence, home ownership and population in the 55–64 age bracket. Importantly, it was regions with initially high wages that saw the greatest rise in entrepreneurship. If ‘more’ entrepreneurship is sought, it is these factors that merit attention rather than the use of public subsidies to directly raise business formation rates.

**Keywords** Entrepreneurship · Enterprise policy · Regional development · Self-employment · Rank mobility

**JEL classification** L26 · L53 · R10 · R58

## 1 Introduction

The expenditure by governments seeking to change the scale or nature of entrepreneurship is rarely made public but, where it is, the sums are considerable. Recently, Lundström et al. (2014), following a careful assessment, concluded that, in Sweden, annual public expenditure on SME and Entrepreneurship policy was SKK 46.5 billion. This is broadly in line, on a per capita basis, with earlier work for the UK showing that annual expenditure in this policy area was approximately £8 billion—so exceeding the amount provided by taxpayers at that time on either the Police Force or the Universities.

The scale of this expenditure makes it important to assess whether such public policies are cost-effective in achieving their specified aims. It is therefore a matter of concern that OECD (2007) found appraisals of the cost-effectiveness of Entrepreneurship and SME policies were undertaken less frequently, and with less analytical rigour, than those in many other areas of public expenditure. More recently, the UK’s National Audit Office (2013) also highlighted the weakness of evaluations in this area, compared with those conducted on other labour market interventions. Finally, similar sentiments were expressed by the US Government Accountability Office (GAO) report for 2012. It reviewed 53

---

G. Fotopoulos (✉)  
Department of Economics, University of Peloponnese,  
Tripolis 22100, Greece  
e-mail: gfotop@uop.gr

G. Fotopoulos  
University of Sheffield Management School, Sheffield, UK

D. J. Storey  
School of Business, Management and Economics, University of  
Sussex, Sussex, UK  
e-mail: D.J.Storey@sussex.ac.uk

entrepreneurship programmes in four different agencies—with an aggregate budget of 2.6 billion USDs—and found:

“for 39 of the 53 programs, the four agencies have either never conducted a performance evaluation or have conducted only one in the past decade. For example, while SBA [Small Business Administration] has conducted recent periodic reviews of 3 of its 10 programs that provide technical assistance, the agency has not reviewed its other 9 financial assistance and government contracting programs on any regular basis” (ibid. p. 56).

To address such lacunae, McCann and Ortega-Argilés (2016) critically discuss past entrepreneurship policies in the European Union (EU) context. Within the new EU smart specialisation framework, fostering entrepreneurship has become central to regional policy. They argue that a policy prioritisation framework (such as smart specialisation) characterised by outcome-orientated and results-oriented logic suggests itself as a policy framework for entrepreneurship that necessitates making the aims and objectives of the policy as clear as possible from the outset.

This combination of massive budgets and the patchy and selective evaluations of SME and Entrepreneurship policy initiatives constitute the central motivation for this paper. By drawing upon the formulation and articulation of theories from different countries, regions and economic circumstances, we make the case that effective SME and Entrepreneurship policy requires evidence of four links. The first is between changes in entrepreneurial activity and economic development. In other words, as a minimum, there has to be a correlation between, for example, more entrepreneurial countries or regions and those countries/regions where economic growth or job creation rates are highest. The second link is the direction of that correlation. It has to be shown that entrepreneurship causes the change, and it is not economic development that causes the increase in entrepreneurship. The third link is evidence of market failure, which, in principle, constitutes a rationale for government intervention. The final link is evidence that policy brings about identifiable changes in the metrics of policy—such as the creation of more new firms—which would not have occurred without the public funds and which does so at a socially acceptable cost.

This paper uses the Wales Entrepreneurship Action Plan (EAP) as a ‘worked example’ addressing the four links. Here, an expenditure of £245 million over 6 years

was expected to raise the rate of new business registrations by 50% within 7 years and, within a decade, to make Wales one of the most entrepreneurial countries in Europe.

We find a short-term rise in new business registrations during the years of the EAP, but one that evaporates in the medium term. We find no evidence of progress towards making Wales ‘one of the most entrepreneurial countries in Europe’. Instead, our findings are more in keeping with seeing entrepreneurship as a response to, rather than being a cause of, changes in economic development—reflecting issues relating to link two above.

The paper is structured as follows. It begins by reviewing the theory underpinning, and evaluations of, state interventions to promote entrepreneurial activity. Section 3 of the paper describes the Wales EAP. Section 4 draws upon the material reviewed in Section 2 to formulate tests to assess policy effectiveness. Section 5 undertakes those tests. Section 6 concludes by reviewing our findings so as to provide insights to scholars and guidance to public policy makers.

## 2 State interventions to promote entrepreneurship: making the case for intervention

This section argues that the case for using public funds to encourage entrepreneurship<sup>1</sup> has to draw upon evidence of four key links. The links—and the evidence for them—is set out below. Underpinning this review is the recognition that entrepreneurship lacks a common language and it is for this reason that a range of metrics—new firm formation, new firm growth, changes in self-employment rates—have to be used to capture the concept (Storey and Greene 2010).

### 2.1 Link 1: entrepreneurship and job/wealth creation

The case for the promotion of entrepreneurship has a history, which, in many countries, stretches back almost four decades to the seminal work by Birch (1981). He claimed to demonstrate that two thirds of new jobs in the USA between 1969 and 76 were in firms with less than

<sup>1</sup> Note we now focus on Entrepreneurship policy rather than Entrepreneurship and SME policy. Lundström and Stevenson (2006) were the first to emphasise that SME policy focussed on existing small and medium enterprises. Entrepreneurship policy was focussed on the creation of new enterprises.

20 workers and, of these, the bulk were in firms which did not exist in 1969. A second key relationship was the link between the entrepreneur and innovation, which, in turn, was linked to economic development by Acs and Audretsch (1987). This combination of roles became the basis of Porter's (1990, p. 125) assertion that "invention and entrepreneurship are at the heart of national advantage".

Unsurprisingly, given these attributes, governments, particularly in areas of economic disadvantage, sought to promote entrepreneurship as a means of achieving economic progress. The basic argument was that since entrepreneurs created wealth and jobs, it was a legitimate economic and political function of governments to use public funds to create more entrepreneurship. More was frequently equated with better.<sup>2</sup>

## 2.2 Link 2: increases in entrepreneurship cause increased employment and/or wealth creation

Although, for some years after the Birch finding, it was link 1 that was the subject of much debate, (Hirschberg 1999; Davis et al. 1996), now it is link 2—the direction of causation—that is also disputed. This is because elements of entrepreneurship are increasingly seen as *a response to* economic conditions and to changes in those conditions (Faria et al. 2010) rather than being *a cause of* change.

The model proposed by Ghatak et al. (2007) captures this issue. They explain changes in entrepreneurship as occurring in response to an exogenous rise in employee wage rates, combined with labour market imperfections such as discrimination. Their model crucially introduces the idea of a two-way interaction between the credit and labour markets, so questioning the direction of causation between entrepreneurship and economic development/job creation.

The empirical basis for a causative link between the two is also becoming less clear, as data becomes available over longer periods of time, so facilitating more sophisticated analysis. For example, Carree et al. (2015) find that, over the long period 1969–2009 in the USA, the positive relationship between lagged self-employment rates and job creation weakens

throughout the period and effectively disappears after 1994. In a study of 90 EU regions, Bruns et al. (2015) find that regional variations in entrepreneurship exert no statistically significant influence on regional growth rates, once physical capital and population growth are taken into account within a national context. They summarise their findings:

"We do not find an effect of regional entrepreneurship, but if a region finds itself in a country with high average entrepreneurship rates, this has a positive effect on regional growth." (ibid. p. 18).

In summary, both the theoretical and empirical case for link 2—that increases in entrepreneurship lead to (cause) economic development/job creation and are reflected in enhanced economic growth—seem to be becoming less clear. The alternative, that entrepreneurship is a response to economic change, certainly cannot be ruled out.

## 2.3 Link 3: evidence of market failure: why does government need to intervene?

The ambiguity of the relationship between entrepreneurship and measures of economic development has not inhibited governments from seeking to raise entrepreneurship rates through the use of public subsidies. The justification for such intervention is the presence of market failure. By this, we mean there is an a priori case for public intervention when there is evidence of imperfect information or the presence of externalities (Oh et al. 2009). However, it is not sufficient to make the case that there are public benefits from the implementation of a policy. Instead, there needs to be evidence of factors inhibiting the market from delivering the optimal quantity of entrepreneurship—conditions that are said to cause market failure.

## 2.4 Link 4: evidence that entrepreneurship policies are cost-effectively delivered

Entrepreneurship and SME policies can be delivered by governments either by macro or by micro instruments, but each requires very different approaches to assess their effectiveness.

*Macro policies* influence one or more entrepreneurship metrics by creating an economic and social environment in which entrepreneurship can thrive. Such policies include changes in the taxation or regulatory

<sup>2</sup> The literature on "ease of doing business" is an example. Peng et al. (2010, pp. 517–518) say "Market-friendly institutions generally facilitate more vibrant entrepreneurship development, which, in the aggregate would translate into economic development..."

environment, the legal framework, as well as conventional macro economic weapons such as interest rates. Their prime focus is to improve the economic environment in which enterprises of all sizes and ages operate.

*Micro policies*, in contrast, focus upon providing support, either for groups or for individuals, in order to address business-related problems or social concerns. Some individuals or groups, for example, may be entrepreneurially disadvantaged due to unemployment, by where they live, or by their ethnicity, age, gender or disability, so preventing them from starting or growing a business. For these groups, governments in many countries have programmes that provide advice, training, funding or some combination of all three (OECD 2007). In other cases, potential or existing business owners may have an imperfect knowledge of how to start or grow a business. Here, governments provide free or highly subsidised information and advice (Wren and Storey 2002). A third group of micro policies are those seeking to change attitudes, by alerting children and young adults to the option of becoming a business owner (ILO 2015; Eurofound 2016).

Although these policies are found in all developed economies, there is now an increasingly substantial body of work which questions whether they are cost-effective. Some empirical evidence on the impact of micro policies is set out in Table 1. The studies included are of micro policies that at least satisfy the ‘best practice’ step VI criteria specified by OECD (2007), which takes account of selection bias through the use of appropriate control groups. Because such studies are rare, the number included in the table is small.<sup>3</sup>

The topics or programmes included in Table 1 are micro policies, which, primarily or exclusively, deliver ‘soft’—non-financial—assistance to new or small firms. They include different forms of information and advice, delivered in a range of high-income countries over different time periods of time to different groups of individuals or new/small enterprises. With one exception, the sample sizes all exceed 400 and, in most cases, exceed 1000. For all these reasons, these studies can be considered as having considerably fewer limitations

than those relying on the self-reported views of small samples of programme participants.

Of the eight studies, only the German SUS programme and the Finland NIY growth programme find a clear and significant positive effect on participation—subject to reservations over the small sample sizes and short time periods for the Finland study. Of the remainder, one finds some sales, but no survival, impact (Denmark) and one finds some survival but partial sales impact (UK Marketing Initiative). Two other studies find either no impact on either a survival or a growth metric. In this context, the study by Yusuf (2014) is particularly relevant since it finds no impact for the US Small Business Development Programme. Its relevance is because this programme was assessed much more positively some years previously by Chrisman and McMullan (2000) but without addressing the control issues.<sup>4</sup> The other study finding no impact is provided by Georgiadis and Pitelis (2016). By taking advantage of a natural experiment that constituted a valid randomised trial, the authors examine a government programme that provided free general training for managers and non-managerial employees of SMEs in the UK accommodation and food service sector. They find a weak, or zero, effect of forms of managerial training on firm performance, although they do find some impact for non-management training. The US study on the Growing America through Entrepreneurship Programme (GATE), whilst identifying an entry effect, finds no performance effect. Finally, the table includes the findings from a German study of coaching (Loersch 2014). It examines two German programmes seeking to address the problems of limited skills and limited access to finance. The coaching programme addressing the issue of skills is ‘External Business Coaching Germany’ (EBCG) and the second focusing on unemployment: ‘External Business Coaching Germany for former unemployed individuals’. Despite – or perhaps due to—the use of the most statistically robust matching methods, the study found that the programmes had significant negative effects on a range of performance metrics. These include the survival of the entrepreneur in self-employment, their earned monthly net income, the probability of having employees, the number of employees and finally the reported

<sup>3</sup> The UK National Audit Office (NAO), for example, reported in 2014: “Only 14 evaluations (out of 34 examined) were of a sufficient standard to give confidence in the effects attributed to policy because they had a robust counterfactual. The evaluations we reviewed, covering spatial policy and business support, were generally weaker than some of those covering labour market and education policies” (para 13 p. 7).

<sup>4</sup> This is in line with the observations of OECD (2007), Bridge (2010), Greene (2009), and Eurofound (2016) that the reported impact of entrepreneurship policy initiatives is generally inversely proportional to the sophistication of the statistical methods employed.

**Table 1** Evaluations of micro policy initiatives: soft assistance

Policy	Authors	Country	Time period	Performance metric	Method	Sophistication level	Sample sizes	Impact	Comment
Subsidised Marketing Advice to established SMEs	Wren and Storey (2002)	UK	1988–1994	Survival Sales	Heckman adjustment for selection bias	6	4326	No survival impact Significant sales impact	There is a survival impact on mid size SMEs. A positive sales impact
Formal Training for SMEs	Georgiadis and Pitelis (2016)	UK	2002–2006	Sales Reported profit margins	Experimental randomised trial	7	430	No impact of management training on either sales or reported profit margins	A significant impact was found for workforce training
NiY Growth Programme	Autio and Rannikko (2016)	Finland	2008–2012	Sales growth	Heckman adjustment for selection bias Untreated are rejected programme applicants	6	64–66 treated; 54–64 untreated	Sales growth rates of treated firms doubles	Small sample sizes
Public funding of counselling and advice prior to start up	Pons and Rotger et al. (2012)	Denmark	2002–2006	Survival Sales Employment	Propensity score matching	6	859	Short-term survival is enhanced. Positive but weaker effects on sales and employment	
Coaching	Loersch (2014)	Germany	2007–2010	Survival Earned income Employee numbers	Propensity score matching	6	2936	Negative effect on survival, earned income and employment	Negative effect is attributed to the coaching reducing risk-taking
SBDC Assistance	Yusuf (2014)	USA	1998–2004	Starting to trade	Heckman selection	6	680	None	Other forms of business planning enhance likelihood of start-up.
Growing America Through Entrepreneurship (GATE)	Fairlie et al. (2015)	USA	2003–2005	Starting to trade; business performance	Experimental randomised trial	7	2094 Treated 2103 Control	Raises ownership rates. No performance effect	Short-term impact only. No long-run effect
New Start-up Subsidy (SUS)	Caliendo et al. (2016)	Germany	2007–2011	Income and employment	Propensity score matching	6	589 Treated 699 Control	Raises duration of self-employment by 8 months	Results are unaffected by inclusion of personality-related variables.



satisfaction of the participants. The author attributes this to several factors, but most notably to the quality and focus of the coaching.

The studies identified in Table 1 show impacts that vary from positive to negative, but the overall impression is of unpersuasive evidence that public programmes enhance the performance of new and small firms. This has been recently reinforced by policy reviews of start-up support for young people undertaken by Eurofound of (2016) and of Youth Enterprise Programmes by ILO (2015).<sup>5</sup>

Such studies have to be seen in the context of more general questions being raised over the effectiveness of policies seeking to foster entrepreneurship. There is a long history of studies suggesting that encouraging more people to become entrepreneurs is bad public policy because the vast majority of new businesses are wage-substitution enterprises found in sectors where entry barriers are low and exit rates are high (Greene et al. 2004). They have more in common with self-employment than with entrepreneurs seeking to build companies, which grow and create jobs and wealth. In a similar vein, Acs et al. (2016) argue that entrepreneurship policies “waste taxpayers’ money, encourage those already intent on becoming entrepreneurs and mostly generate one-employee businesses with low-growth intentions and few opportunities for meaningful economic innovation” (ibid. pp. 36–37).

To address these problems, the alternative case, made most recently<sup>6</sup> by Colombelli et al. (2016), is to shift policy attention away from start-ups in general and towards innovative start-ups. Whilst in principle desirable, this more selective policy is difficult to deliver because of both the low survival rates of new enterprises and the low predictability of the growth rates of new firms (Coad et al. 2016). These difficulties of a ‘picking-winners policy’, as it is often called, are increased because of errors made by policy makers. In many instances, they assume that high-growth firms are heavily—even exclusively—concentrated in high-tech sectors when this is clearly not the case, so excluding from support

businesses with growth potential but which are in more traditional sectors (Mason and Brown 2013; Brown et al. 2017). Two recent papers by Arshed et al. (2014, 2016) take a different approach to explaining the ineffectiveness of entrepreneurship policy. They see policy as characterised by contradictions between those formulating and those delivering policy.

Overall, therefore, for a variety of reasons, there is little evidence, satisfying the OECD best practice evaluation criteria, to demonstrate that public policy to promote entrepreneurship is cost-effectively delivered. With that background, we now undertake a case-study of a programme seeking to raise entrepreneurial activity in the country of Wales.

### 3 Wales Entrepreneurship Action Plan

The justification for an EAP for Wales is set out below:

“The most successful economies in the world are also the most entrepreneurial. International research demonstrates that as much as one third of growth in national income is due to entrepreneurial activity. On a number of measures Wales is not as entrepreneurial as it could be, or should be. For instance we are at least 30% behind the average for the UK in the rate at which we create new businesses”. (Entrepreneurship Action Plan for Wales-Strategy Document 1998, p. 8)<sup>7</sup>

The EAP strategy document went on to say:

“Our vision for Wales is to establish itself within a generation as one of the most entrepreneurial nations in Europe:  
A bold and confident nation where entrepreneurship is valued, celebrated and exercised throughout society and in the widest range of economic circumstances.” (ibid. p. 5)

Within this context, the EAP set out to:

- Increase the entrepreneurial opportunity recognition by seeking to change the attitude towards entrepreneurship, embed the entrepreneurial education within the educational system, widen the horizons of

<sup>5</sup> ILO (2015, p. 39) say “on the basis of the evidence and data reviewed, it is not clear that the self-employment and entrepreneurship schemes that have been tried actually created new jobs, nor is it clear whether these jobs are of sufficient merit to be worth creating”. Eurofound (2016, p. 2) say “The growing interest in youth entrepreneurship has not been matched by sound evaluations of the impact of specific initiatives”.

<sup>6</sup> But earlier by Storey (1994) and Vivarelli (2004).

<sup>7</sup> Available online: <http://www.arsyllfadysgu.com/uploads/publications/674.pdf>

potential and actual entrepreneurs, and stimulate entrepreneurial behaviour by encouraging participations from all parts of society

- Create more start-up businesses and more businesses with growth potential
- Increase the number of indigenous firms that grow to their full potential

This was an ambitious and overarching strategy, which is admittedly difficult to evaluate in its entirety. However, as pointed out by Rhisiart and Jones-Evans (2016) who also review the EAP, a total of £21 million was allocated to two projects to promote ‘entrepreneurial culture’ (increasing the likelihood of more people taking on new entrepreneurial activities and generating more positive attitudes towards entrepreneurship) and £13 million was allocated to the ‘Business Birth Rate Strategy’.

Rhisiart and Jones-Evans (2016) argue that:

“Over the following years [after the Plan was implemented] to 2005, entrepreneurial activity in Wales grew significantly, outpacing the UK as whole. However, a loss of focus on entrepreneurship in the years between 2005 and 2011, due to institutional factors and a lack of foresight renewal was accompanied by a decline in entrepreneurial activity...” (ibid. p. 112).

Our approach and conclusions are very different, in part because we focus on the quantitative targets in the EAP strategy document set out below:

[By the end of 2006] “positive attitudes to entrepreneurship as measured by Beaufort Research and GEM [Global Entrepreneurship Monitor] research studies, to be at least equal to the UK average” (Entrepreneurship Action Plan-Strategy Document, p. 33).

“This strategy will deliver a 50% increase in new VAT registered business starts by the end of 2006, raising new VAT business starts from the current level of 6,300 to 9,300 per annum.” (ibid. p. 7)

#### 4 Justifying the four tests

Drawing upon the prior theoretical and empirical work reviewed in Section 2, we now set out the rationale for the tests used to review the impact of the EAP.

Test 1 is the simple metric specified in the EAP—a 50% increase in the number of VAT-registered business by 2006. This test has three benefits. It is simple; it is apparently unambiguous, because it specifies precisely the number of new businesses to be created in Wales by a given year. Finally, it is the one chosen by those responsible for the Plan. Hence, Test 1:

Test 1: To deliver a 50% increase in new VAT-registered businesses by the end of 2006, raising new business starts from the current level of 6300 to 9300.

Formulating a test to capture the medium-term aim of making Wales ‘one of the most entrepreneurial nations in Europe’ is more problematic for two reasons. The first is because the criteria for ‘most entrepreneurial’ were not specified in the Plan, but we will assume that New Business Registrations is the appropriate metric. A second problem was the need, as minimum, to hold constant two factors. The first is the macro economic conditions that affect Wales and the second is the size of the country.

We achieve the first factor by making a direct comparison with both England and Scotland on the grounds that all three countries are within the same currency union and that monetary policy is delivered for all three countries by the Bank of England. Although clearly not identical, the macro economic experience of the three countries can be considered as broadly similar. A further advantage of including Scotland is that it had a business birth rate policy, which began in 1993 until it was closed in 2001 after acknowledging it fell 90% short of its target (Fraser of Allander Institute 2001). Country-size differences between Wales, Scotland and England are addressed by expressing new business registrations, as well as business registration rates in each year as a ratio of the enterprise stock.

Our assumption is that if Wales was to become ‘one of the most entrepreneurial nations in Europe’, the EAP would have caused new business registration rates to have grown faster in Wales than in either Scotland or England and to continue to grow faster after EAP funding has ceased. Hence, Test 2:

Test 2: New business Registration rates in Wales will grow faster over time than in England or Scotland and continue once EAP funding has ceased.

A second type of test of whether the EAP had achieved its aim of making Wales ‘one of the most entrepreneurial nations in Europe’ is to compare the attitudes of people in Wales to starting a business with those in other countries. If there was evidence, over the lifetime of the Plan, that people in Wales said they were more likely to consider starting a business than, for example, those elsewhere in Europe then this also could be considered as positive evidence of impact. Data from the Global Entrepreneurship Monitor (GEM) could potentially offer helpful comparisons.

The core merit of GEM is its ability to estimate the scale and nature of early-stage entrepreneurship in a large number of countries across the world. Each year, it estimates the total number of individuals who say they are in the process of starting a business (nascent entrepreneurs) and those that say they have a newly established business. By combining the two groups, GEM estimates total early-stage entrepreneurial activity or TEA. It is then able to compare TEA rates across countries and, in principle,<sup>8</sup> within the same country over time. An appropriate test would therefore examine whether the GEM measures of entrepreneurship change in line with EAP. Hence, Test 3:

Test 3: Attitudes to Entrepreneurship in Wales will become more positive over time.

Our final test recognises that self-report data—such as that collected by GEM—has clear limitations of reliability and coverage (Bertrand and Mullainathan 2001). It also recognises, as Carree et al. (2015) point out, that “entrepreneurship is an ill-defined concept and, even when a definition is agreed upon, several measurement issues have to be solved” (ibid. p. 182). After a careful review, they argue, following Parker et al. (2012), that the one measure of entrepreneurship with the merits of inclusiveness and convenience, and which also captures the key concept of risk-bearing, is that of self-employment.

As well as providing a strong conceptual case for capturing entrepreneurship, self-employment data in the UK also has the overriding merit of reliability. This is because, in the UK it is Census data,

<sup>8</sup> GEM, however, is NOT a Panel in the sense of tracking the same individuals over time, so no verification is possible.

collected each decade, that is used to identify the proportion of the working population that is self-employed. This is then used, in conjunction with a range of controls, to reliably assess whether, in the medium term, entrepreneurship in Wales rose faster than in comparable areas of England following the EAP.<sup>9</sup> We take the medium term to be the 20 years from 1991 to 2011. Hence, Test 4:

Test 4: Self-employment rates in Wales will rise faster than in England 1991–2011.

## 5 Conducting the tests

5.1 Test 1: To deliver a 50% increase in new VAT-registered businesses by the end of 2006, raising new business starts from the current level of 6300 to 9300

There are two VAT registration data series available from NOMIS coming from the UK Department of Business, Enterprise and Regulatory Reform, which are required for this test. One covers the period 1980–1993 and the other covers 1994–2007. Unfortunately, these series are not directly comparable due to large increases in the compulsory VAT registration thresholds in 1991 and 1993.<sup>10</sup> The Office of National Statistics (ONS) Business Demography series starts from 2004 and covers VAT-registered and pay-as-you-earn (PAYE) businesses.

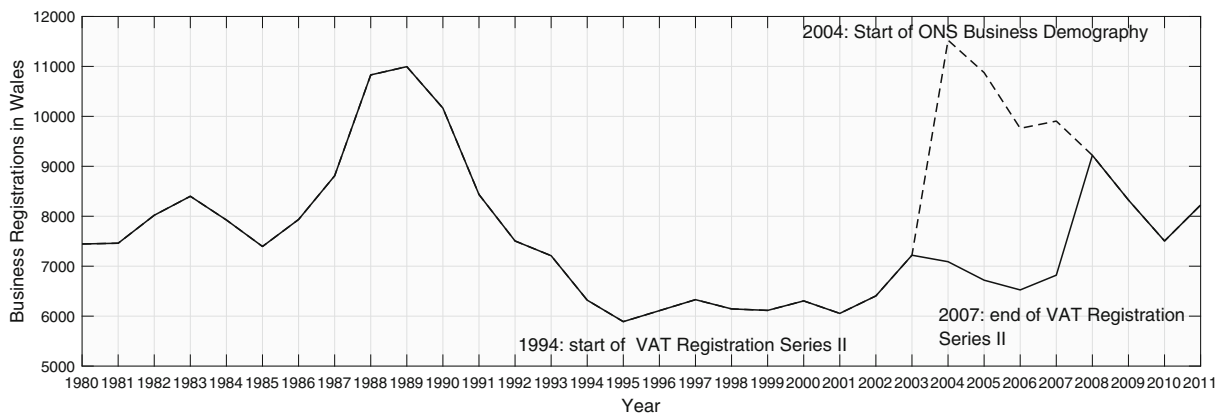
The data are shown in Fig. 1 with both series covering the years 2004–2007. Unfortunately, the scale, and even the direction, of the two series are so different that it prevents us from undertaking formal time-series analysis.

We therefore select the individual years shown in Table 2. 1997 is chosen because it is the EAP inception year and 2006 is chosen as the year when the Plan was fully implemented. In that year, the number of new registrations was 9760—exceeding the Plan total of 9300.

<sup>9</sup> The data also has other advantages in the current context. First, it is obtained directly from the Census, so it has strong reliability and coverage. Second, it does not rely on businesses being required to be above a minimum size, which is a requirement for government datasets. Third, government new registration data has been subject to changes in calibration, so there is no single and consistent time-series. Fourth, it is available at low spatial levels.

<sup>10</sup> (BIS, <http://aalookup.bis.gov.uk/ed/vat/VATGuidance2007.pdf>)





**Fig. 1** Business registration in Wales 1980–2011: VAT registration and ONS Business Demography series

However, this single year target in test 1 has the limitation that the number of new business registrations fluctuates considerably over time and is likely to be influenced by economic circumstances. This is reflected in the top row of Table 2 which shows that by 2011, new business registrations were 8225—lower than those in the final year of the Plan.

5.2 Test 2: new business registration rates in Wales will grow faster over time than in England or Scotland and continue once EAP funding has ceased

Row 2 of Table 2 shows the number of new registrations for England for 1980, 1990, 1997, 2006 and 2011, and row 3 shows the comparable data for Scotland. Rows 4 and 5 show the respective ratios and it is on these we will focus. The Wales/England ratio shows considerable variation over time, falling from 1980 until 1997 when the EAP is implemented; it then rises sharply during the years of the Plan, but falls back to an all-time low by 2011. This temporary peak is also evident when using the Wales/England ratio of business registration rates. The contrast with Scotland is, even more, stark. The Scotland/England ratio is broadly the same over more than 30 years and does not seem to have been influenced, even temporarily, by the Business Birth Rate Strategy.<sup>11</sup>

<sup>11</sup> Scottish business birth rate strategy was inaugurated in 1993. Although the total expenditure is unclear, it is in the range of £120 million to £175 million over a 7-year period. Its target was to close the gap in the business birth rate between Scotland and the rest of the UK by the year 2000 implying the creation of 25,000 new firms. The ex-post assessment by Fraser of Allander Institute (2001) concluded that, over the 6-year period until 1999, the number of new firms started that could be attributable to the programme was 2124. The programme clearly did not succeed.

In short, the (slightly) more sophisticated Test 2 implies that the EAP had a short-term impact upon new business registration but this was temporary and, within 15 years, Wales was, relative to England, in a considerably worse position than previously. Scotland, by contrast, which had dropped its policy several years previously, broadly retained its position relative to England.

Rhisiart and Jones-Evans (2016) report business birth rates for the period 2002–2010 using StatWales data originating from ONS Business Demography. The business birth rate of Wales, West Wales and the Valleys, and East Wales was higher than that of the UK as whole for the years of 2003 and 2004, but this cannot be confirmed using the VAT registration series available by NOMIS.<sup>12</sup>

5.3 Test 3: attitudes to entrepreneurship will become more positive over time

The GEM Wales report for 2011 (Levie and Hart 2011) produced bullish results. It found that the early-stage entrepreneurial rate amongst 18- to 29-year olds rose from 3.4% in 2002 to 9.7% in 2011, perhaps reflecting the £4 million that was spent annually on young business people in the EAP.

However, by 2014, matters had changed radically. The GEM reports for Wales (Levie and Hart 2012; Levie et al. 2014) found rates of TEA in Wales fell to 7% in 2012 and fell again to 5.4% in 2013. The observations made in the GEM report, when discussing young people, are in line with Ghatak et al. (2007). They say:

<sup>12</sup> These results are available from the authors upon request.

**Table 2** New business registrations: Wales, Scotland and England, selected years

	1980	1990	1997	2006*	2011*
Wales	7445	10,165	6330	9760	8225
England	138,550	208,430	158,975	159,335	232,460
Scotland	10,565	16,210	12,305	11,755	16,940
Reg. Wales/reg. England	0.053	0.049	0.040	0.061	0.035
Reg. Scotland/reg. England	0.076	0.077	0.077	0.074	0.073
Reg. rate Wales/reg. rate England	0.807	0.803	0.695	0.932	0.796
Reg. rate Scotland/reg. rate England	0.829	0.917	0.882	0.921	0.950

\*Data from ONS Business Demography

“It suggests that the decline may in fact be a consequence of improving economic conditions, with the perception of increased availability of jobs no longer necessitating entry into self-employment amongst the young due to lack of employment opportunities.”

Overall, the GEM reports point in a broadly similar direction to the official data suggesting that, although there was some acceleration in entrepreneurial activity in Wales in the first decade of the new millennium, these had evaporated by 2011.

#### 5.4 Test 4: self-employment rates in Wales will rise faster than in England 1991–2011

The break in the series caused by the shift to ONS Business Demography and the discrepancies between the later and the VAT registration series necessitates the use of alternative entrepreneurship definitions. This test therefore uses Census data to examine self-employment change in Wales. Given that the key years of operation of the EAP were around the millennium, the Census of 2001 can be considered as the policy period, with 1991 being the pre-policy, and 2011 the post-policy, Census.

Our test seeks evidence of the EAP changing self-employment rates in Wales over a 20-year period. For this, we require a metric that captures how a region/country fares within a wider system of regions. Given that our concern is with relative changes, we examine changes in regional self-employment rate rankings between different points in time in areas of Wales, compared with areas of England. Our chosen spatial unit is local authority districts (LADs).

To capture changes in rank mobility of over time, we begin by using a simple scatter plot. Here, the base year

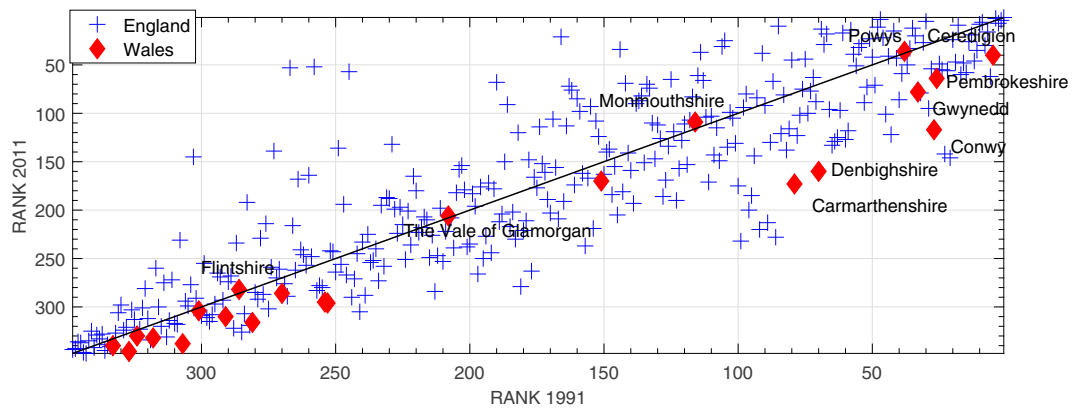
rank is shown on the horizontal axis and the end year rank is shown on the vertical axis. This implies that LADs above the 45-degree line ‘improve’—rise up the rankings—and those below the 45-degree line go down the rankings. LADs on the 45-degree line are unchanged in terms of rank position.

Figure 2 is a scatter plot of rank changes in self-employment rates between 1991 and 2011. The vast majority of Welsh LADs lose rank position, with these losses being more substantial at the top (LADs with high self-employment rates) than those at the lower end of the distribution. Ceredigion, for example, ranked 5th in 1991, falls 35 places; Pembrokeshire falls almost 40 places to 64th position, whilst Gwynedd slips 45 places to position 78 in 2011. However, these losses are modest compared with those in Conwy which falls 80 places, Denbighshire which falls 90 places and Carmarthenshire where the fall was close to 100 places. Overall, only four Wales LADs improved their rank positions—and in all four cases, the gains were modest.

A more general observation relating to Fig. 2 is that extreme movements are primarily associated with London (moving up) and coastal areas (moving down) the ranks.

To determine whether these changes occurred in the decade prior to, or post, the EAP period, Fig. 3 shows changes from 1991 to 2001, whilst Fig. 4 shows changes from 2001 to 2011. Figure 3, covering, the pre-EAP period, shows there were five Welsh LADs that improved their position. These improvements were very small; the largest were Powys and Cardiff, of 15 and 12 places, respectively. Figure 4 shows that, in the post-EAP decade, only four Welsh LADs improved; only Monmouthshire rose by more than 10 places.

Using the pre- and the post-plan decades, it is difficult to observe an improvement in the relative position of the LADs in Wales associated with the EAP.



**Fig. 2** Rank changes in self-employment rates between 1991 and 2011: 2011 Census LADs geography

These visual presentations provide a big picture of the changes in self-employment rank positions, but we now undertake an econometric analysis that formally make these comparisons, whilst holding constant a range of factors which might influence these rank positions.

Table 3 defines the dependent and the independent variables to be used in the analysis. In addition, it provides a rationale for the choice of independent variables to be included based upon prior work. The reader's attention is drawn to the LONDON and COASTAL variables which were shown to exert a significant influence on self-employment on the rank mobility index (RMI).<sup>13</sup> The former has a positive, and the latter has a negative, influence on RMI. Two other variables emerge from the model of Ghatak et al. (2007) which sees changes in the scale of entrepreneurship as a response to wage changes. These are MEANPAY and PAYINEQ. Although variables that account for interregional wage differentials have previously been used in the regional entrepreneurship literature (see for example Georgellis and Wall 2000), the variability of the regional average gross annual pay, as captured by PAYINEQ, is used for the first time to capture the greater variance of earnings from entrepreneurship.

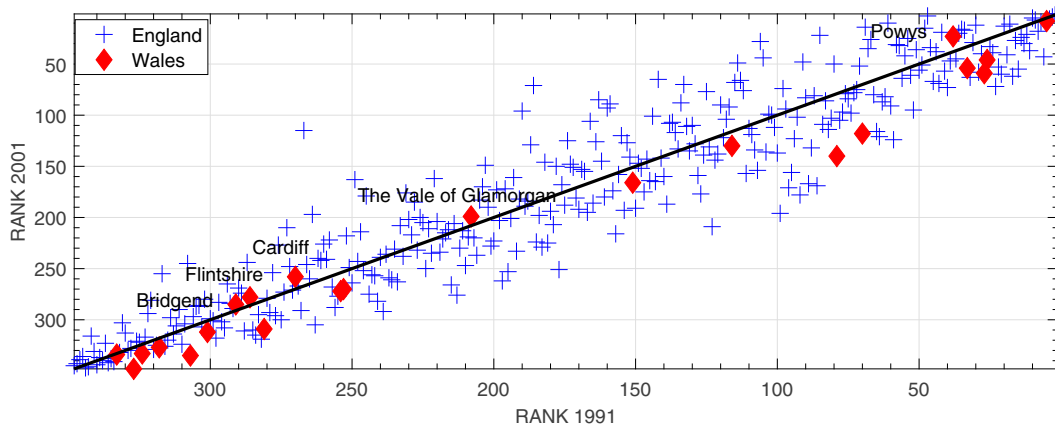
<sup>13</sup> An alternative rank mobility index to the one used in the present study following Fotopoulos and Storey (2017) could have been  $RMI = \frac{RANK_{t-1} - RANK_t}{RANK_{t-1} + RANK_t}$  ([https://en.wikipedia.org/wiki/Rank\\_mobility\\_index](https://en.wikipedia.org/wiki/Rank_mobility_index)). This is confined in the  $(-1, 1)$  interval; however, a different value of the index is obtained when an equal number of places increase (or decrease) is initiated in different parts of the initial distribution. For example, going from the 348th position to the 342th yields a value of  $RMI = 0.008696$ . Whereas going from the 7th to the 1st place yields  $RMI = 0.75$ . This index is biased in favour of changes initiated at the top of the distribution. In contrast, the RMI used here is symmetrical in the sense that an equal amount of ranking positions changes results in the same index value independently from the initial rank position.

The results of the econometric analysis are presented in Table 4. Columns (1) and (2) show the equations seeking to explain RMI in both the decade prior to Wales EAP (1991 to 2001) and the decade following the EAP (2001 to 2011) using a restricted variable set. At the bottom of Table 4, the average variance inflation factor ( $\overline{VIF}$ ) corresponding to each of the different estimated models is given. In all cases,  $\overline{VIF}$  is not considerably larger than 1. In addition, the highest VIF corresponding to an individual independent variable<sup>14</sup> is below the usual cut-off value of 10 (see Chatterjee and Hadi 2012, pp. 250–251) and even smaller than the less tolerant thresholds such as 5 (Rogerson 2001, p. 136). Based on these commonly accepted VIF thresholds, multicollinearity should not be a major cause for concern.<sup>15</sup>

Table 4 shows that, using self-employment persistence and the LONDON and COASTAL variables alone, all variables are significant in Eq. (2) and all variables, with the exception of WALES are significant, and with the expected sign, in Eq. (1). RMI is raised in a LONDON location and is lowered by a COASTAL location and by higher prior self-employment rate. From the viewpoint of the Wales EAP, we see that, although WALES exerted a negative but non-significant influence on RMI in the decade prior to the EAP, this changed to a significantly negative relationship in the decade following the EAP.

<sup>14</sup> The variable with the highest VIF has been the one accounting for changes in immigration in all model permutations estimated, ranging from 3.07 to 3.55.

<sup>15</sup> Appendix Tables 5 and 6 give the partial correlation coefficients for the independent variables used in the estimations presented in Table 4. Despite the high correlation coefficient between the  $\Delta HUMANCAP$  and  $\Delta IMMIGR$  variables, both retain their expected sign and statistical significance.



**Fig. 3** Rank changes in self-employment rates between 1991 and 2011: 2011 Census LADs geography

Although LONDON and COASTAL are two mutually exclusive categories, WALES and COASTAL are not. So, when only WALES and LONDON are included in the regressions, the reference category is English LADs outside London. Here, the WALES effect is a comparison that excludes the best performing areas of London. It therefore provides a conservative estimate.<sup>16</sup> When, however, the WALES and COASTAL dummies are both included, the WALES effect should be seen as the one that emerges once the COASTAL effect has been controlled for. That is, it produces an effect that is above and beyond that of simply being coastal.

Columns (3) and (4) supplement the analysis by also including five additional variables that have been shown to affect RMI in prior work (Fotopoulos and Storey 2017). In Eq. (3), covering the 1991–2001 period, their inclusion does not influence the non-significant WALES sign.

In Eq. (4) covering the 2001–2011 period, four controls are significant and all in the expected direction. We see that RMI is higher in LADs where there is a rise in human ( $\Delta$ HUMANCAP) capital, increased immigration ( $\Delta$ IMMIGR), an increase in small firm presence ( $\Delta$ SMFP)<sup>17</sup> and in the proportion of the working age population above the age of 55 years ( $\Delta$ AGES\_5564).

<sup>16</sup> The results obtained for WALES were further scrutinised in permutations (not shown but are available upon request) that excluded the London LADs altogether. The conclusions drawn for WALES hold in the face of exclusion of London observations.

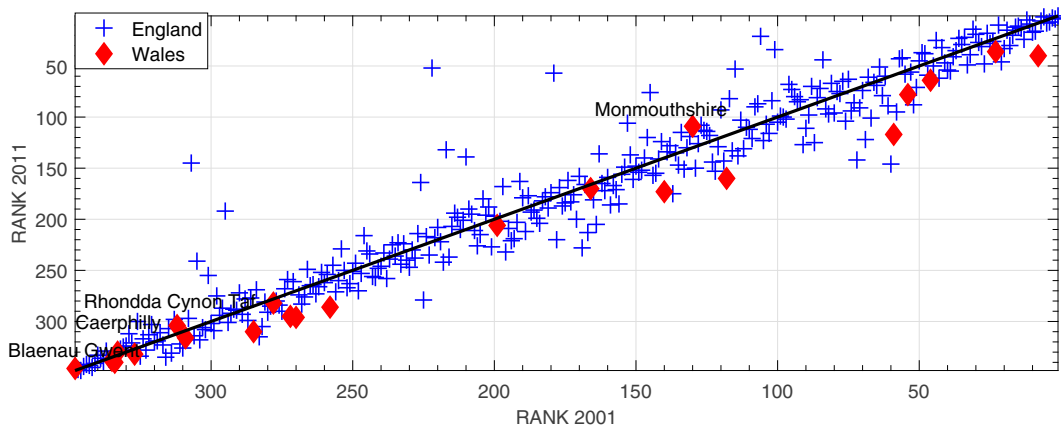
<sup>17</sup> Due to its construction, this variable was further tested for possible endogeneity. There is the possibility that there are unaccounted for factors that affect both the change in small firm presence and self-employment-based changes in regional entrepreneurship rank mobility. Thus,  $\Delta$ SMFP was instrumented by taking two lags (each lag results going back 10 years to the previous census), and the hypothesis of this variable being exogenous could not be rejected.

The effect of introducing these additional variables is that, post-EAP, the WALES variable is no longer significant. The VIF for WALES reported at the bottom of the relative column of Table 4 is very close to 1 (1.09) suggesting that only about a 10% of the variation in this variable is collectively accounted for by the other explanatory variables in this model. This suggests that the significance level of the WALES variable depends on the inclusion/exclusion of the COASTAL variable. Dropping the latter increases the significance level of the negative effect of the WALES variable to 5%,<sup>18</sup> an effect observed in other model permutations that exclude COASTAL.

The final set of columns (5) to (8) shows the effect of including the pay-related variables. As argued earlier, higher wages represent an opportunity cost for becoming self-employed, whereas higher wages also capture stronger demand conditions (Georgellis and Wall 2000). On the other hand, higher local wages improve the quality of the pool of local entrepreneurs additionally resulting in the improvement of their financing conditions (Ghatak et al. 2007). This improvement in the quality of entrepreneurs has, in turn, positive supply side effects on economic development, and through that, on further increasing entrepreneurship rates (Fritsch 2011).

Unfortunately, data on pay at a district level are only available for 2001–2011. In Eq. (5), the inclusion of the MEANPAY variable does provide modest support for the thesis that self-employment is higher in high wage areas, but there is no evidence that

<sup>18</sup> This is not surprising to the extent that, as it was explained earlier, WALES and COSTAL do not represent mutually exclusive categories. For brevity, these results are not presented but are available upon request.



**Fig. 4** Rank changes in self-employment rates between 2001 and 2011: 2011 Census LADs geography

PAYINEQ exercises a significant influence. However, from our perspective, the inclusion of these variables once again leads to the WALES variable for 2001–2011 becoming negatively significant.

Overall, depending on the specification of the equation, the WALES coefficient when the EAP was being implemented is persistently negative and, in some instances, significantly negative. It is therefore difficult to make the case that the trajectory of entrepreneurship in Wales changed during the period in which the EAP was being implemented or in the period when its impact might have been expected to appear.

As a robustness test, we examined if the results for Wales were sensitive to the level of spatial aggregation by using two other dummy variables in the place of WALES, one for unitary authority areas belonging to West Wales and the Valleys and one for West Wales (both at the NUTS 2 level). These results are presented in Appendix Table 7 and show West Wales and the Valleys are negative and statistically significant in most model permutations. For East Wales, the effect is always insignificant and negative in the 2001–2011 period.<sup>19</sup> All in all, the results suggest that a significantly positive effect could not be obtained for Wales irrespective of the spatial level used for constructing the relative dummy variables.

Taking the longer-term view, Figs. 3 and 4 point to a striking stability in the ranking of self-employment rates in the LADs of England and Wales, so confirming

<sup>19</sup> An even higher level of spatial aggregation would result in only one observation for Wales. In contrast, a more disaggregated level would entail mean using very small areas such as electoral wards, communities which would not capture labour markets. It should also be noted that West Wales and the Valleys primarily consist of coastal areas, save for Central and Gwent Valleys.

earlier work on the UK by Fotopoulos (2014), on Germany by Stuetzer et al. (2016) or Sweden by Andersson and Koster (2011). Some attribute this stability to ‘entrepreneurship culture’ (Fritsch and Wyrwich 2014), whereas others place more emphasis on the determinants of regional entrepreneurship themselves being time-persistent (Fotopoulos 2014).

These determinants of regional entrepreneurship do however change, albeit slowly, and our case is that it is these changes in population age structure, immigration, wages, home ownership and small firm presence, rather than the EAP, which influenced self-employment rate-based rank mobility. Amongst the human capital variables, we see evidence of a shift in self-employment amongst older individuals ( $\Delta$ AGES\_55-64) perhaps reflecting older people’s better-developed social networks or better access to funding than younger or middle-aged people (Blackburn et al. 1999).

A second key change is the role played by immigration. It was positive and statistically significant for the post-EPA period, perhaps reflecting its role in widening cultural diversity and so stimulating entrepreneurship (Rodríguez-Pose and Hardy 2015).<sup>20</sup> However, its non-significance in the pre-EPA period suggests that its impact on entrepreneurship has to take account of the ‘type’ of immigration and prevailing labour market conditions. Fotopoulos and Storey (2017) find that the immigration sign moves from significantly negative to significantly positive over 40 years in England and Wales.

<sup>20</sup> Note the high positive correlation-coefficient between  $\Delta$ IMMIGR and  $\Delta$ HUMANCAP-see appendix Tables 5 and 6.



**Table 3** Variable names, definitions and sources

Variable name	Definition	Expected relationship	Source
RMI	Rank mobility index, RMI		Census 1991, 2001, 2011
RMI_91-01			
RMI_01-11	$RMI = \frac{RANK_{i,t} - RANK_{i,t-1}}{n-1}$ <p>The numerator counts the rank change in positions for each Local Authority District. The numerator adjusts the index by using the number of observations (<math>n</math>) minus 1 so as to confine the index in the <math>(-1, 1)</math> interval. The index is symmetrical in the sense that an equal number of places increase or decrease results in the same, in absolute value terms, value of the index. A value of 0 indicates no change in the ranking of a LAD between two points in time. RMI_91-01 accounts for ranking changes between 1991 and 2001. RMI_01-11 accounts for ranking changes between 2001 and 2011.</p>		
Independent variable			
WALES	Dummy; Wales = 1; England = 0	If the EAP is successful, Wales coefficient will improve significantly 2001–2011 compared with the prior decade.	Census 1991, 2001, 2011
SELFR_base year	Self-employment rate in District $i$ in prior census year	Long-run persistence (Fritsch and Wyrwich (2014) implies a positive sign on self-employment rates. However, as here the dependent variable is that of rank mobility, the sign of the effect remains indeterminate.	Census 1991, 2001, 2011
LONDON	Dummy; London = 1; Else = 0	It controls for the existence of outliers that appear in Figs. 2, 3 and 4. Fotopoulos and Storey (2017) report the districts (boroughs) in LONDON improve RMI.	Census 1991, 2001, 2011
COASTAL	Dummy; Coastal = 1; Else = 0. Coastal is defined as District with coastline to the Sea.	It controls for the existence of outliers that appear in Figs. 2, 3 and 4. Fotopoulos and Storey (2017) report the COASTAL towns have falling RMI.	Census 1991, 2001, 2011
$\Delta$ HUMAN-CAP	Change in Human Capital over a decade. The definition of human capital is based on the regional share of those in employment with a degree or higher qualification.	Knowledge created by human capital is both a source of entrepreneurship opportunities and a contributor to regional entrepreneurship absorptive capacity (Qian and Acs 2013), implying a positive sign for this effect	Census 1991, 2001, 2011
$\Delta$ IMMIGR	Change in the share of non-UK-born over resident population.	Different ethnic groups vary considerably in their likelihood of choosing self-employment (Clark and Drinkwater 1998). Fotopoulos and Storey (2017) find a positive effect.	Census 1991, 2001, 2011
$\Delta$ HOMEOWN	Change in the regional home ownership ratio	The regional rate of home ownership has been used to proxy access to capital as houses can be used as collateral (Black et al. 1996). A positive effect is expected.	Census 1991, 2001, 2011
$\Delta$ SMFP	It is the change in local small firm presence, the latter being measured as	Regions dominated by small firms are more conducive to entrepreneurship	Census 1991, 2001, 2011

**Table 3** (continued)

Variable name	Definition	Expected relationship	Source
	the ratio of employers and managers in small establishments over the corresponding figure for large establishments. <sup>a</sup>	because their employees and entrepreneurs-to-be get to experience in a wider spectrum of operations (Storey 1982), have direct contact with the business proprietor who can serve as role model and possibly reflect lower entry barriers at the local level.	
$\Delta$ AGES _55-64	Change in population share of the 55–64 age group	On the positive side, older people are likely to have more and better human and physical capital, better social and business networks as well as easier identification of business opportunities due to experience. On the negative side, older age might be characterised by higher risk aversion, diminishing information gains over time in relation to the business (Parker 2009). Bönthe et al. (2009) find a positive effect on regional self-employment rates.	Census 1991, 2001, 2011
MEANPAY	Average gross annual pay	On the positive side, higher wages may reflect the higher level of aggregate demand facing entrepreneurs (Georgellis and Wall 2000). Furthermore, the improved quality of the pool of entrepreneurs (Ghatak et al. 2007) might have positive supply side effects (Fritsch 2011) fostering economic growth and further increasing entrepreneurship rates. On the negative side, higher wages reflect a higher opportunity cost for becoming an entrepreneur.	Annual Survey of Hours and Earnings. Note these data are only available for the 2001 to 2011 period.
PAYINEQ	Is the ratio of the 75% over the 25th percentile of the annual gross pay per LAD. Missing values have been imputed by using data of the next higher available level of spatial aggregation or by taking and using averages of values neighbouring LADs.	The expectation is that higher pay inequality increases uncertainty around average pay and erodes the possible negative effect that higher wages, as self-employment opportunity cost, may have on entrepreneurship.	Annual Survey of Hours and Earnings. Note these data are only available for the 2001 to 2011 period.

<sup>a</sup> For 2001 and 2011, the definition of this variable is based on the ratio of small employers and own account workers over large employers and higher managerial and administrative occupations

Change in home ownership is also consistently positive, although its statistical significance varies with the period and the specification used. It traditionally captures the ability of people to access finance by using their homes as collateral (Black et al. 1996).

The variable  $\Delta$ SMFP, small firm presence, is argued to have a positive and significant effect on regional entrepreneurship. This is because employment in a small firm constitutes a seed-bed for individuals by providing them with an awareness of business opportunities and a confidence in their ability to implement

them. It may also reflect a more ‘entrepreneurial atmosphere’ in the area, so increasing the local pool of ‘role models’. Its inverse—large firm dominance—is argued by Stuetzer et al. (2016) to reflect a culture that is, at best, indifferent to entrepreneurship. Our findings are that small firm presence has a positive effect on entrepreneurship-related regional rank mobility, particularly between 2001 and 2011.

However, the overall picture that emerges is that the EAP was unable to shake-off the legacy of low prior rates of entrepreneurship. This contrasts with London

Table 4 Ordinary Least Squares Econometric Analyses of Rank Changes in Regional Self-Employment Rates: 2011 Census LADs Geography

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	RMI_91-01	RMI_01-11	RMI_91-01	RMI_01-11	RMI_01-11	RMI_01-11	RMI_01-11	RMI_01-11
WALES	-0.0094 (0.0136)	-0.0250** (0.0104)	-0.0134 (0.0141)	-0.0180 (0.0121)	-0.0272** (0.0127)	-0.0275** (0.0125)	-0.0176 (0.0127)	-0.0269** (0.0129)
SELFR_base year	-0.2648** (0.1317)	-0.3605*** (0.1116)			-0.0518 (0.1546)			
LONDON	0.1069*** (0.0189)	0.1234*** (0.0236)	0.0660*** (0.0235)	0.0827*** (0.0189)		0.0763*** (0.0200)		
COASTAL	-0.0522*** (0.0107)	-0.0259*** (0.0071)	-0.0350*** (0.0106)	-0.0248*** (0.0084)				
ΔHUMANCAP			1.0087*** (0.2234)	0.8970*** (0.2912)	0.8207** (0.3621)	0.8996*** (0.3112)	-0.0246*** (0.0085)	0.7964** (0.3370)
ΔIMMIGR			-0.7995 (0.5187)	0.6921** (0.2842)	1.1463*** (0.3389)	0.7808** (0.3090)	1.0745*** (0.3421)	1.1492*** (0.3348)
ΔHOMEOWN			0.6880*** (0.1914)	0.2738 (0.1818)	0.3867* (0.2049)	0.3613* (0.1916)	0.3169 (0.2002)	0.38987** (0.2047)
ΔSMFP			-0.0032 (0.0022)	0.0250** (0.0124)	0.0264** (0.0132)	0.0257** (0.0124)	0.0265* (0.0140)	0.0269** (0.1331)
ΔAGES_55-64			0.1061 (0.2173)	0.6852* (0.3914)	0.9115*** (0.4520)	0.7408** (0.4137)	0.9360** (0.4238)	0.8838*** (0.4266)
MEANPAY					0.0024* (0.0013)	0.0008 (0.0012)	0.0019* (0.0011)	0.0023* (0.0012)
PAYINEQ					-0.0430 (0.0273)	-0.0271 (0.0239)	-0.0398 (0.0261)	-0.0426 (0.0273)
CONSTANT	0.0332** (0.0141)	0.0407*** (0.0135)	-0.0461*** (0.0152)	-0.1467*** (0.0322)	-0.1253** (0.0601)	-0.1218* (0.0583)	-0.1181 (0.0618)	-0.1287** (0.0632)
N	348	348	348	348	348	348	348	348
$\bar{R}^2$	0.2095	0.3175	0.2833	0.4208	0.3465	0.3983	0.3651	0.3481
F-test	21.6738***	15.0309***	15.2061***	10.8965***	7.3201***	7.6565***	8.8686***	8.17***
VIF	1.11	1.09	1.90	1.78	1.72	1.81	1.68	1.71
VIF (WALES)	1.08	1.09	1.17	1.13	1.09	1.08	1.14	1.08

Heteroscedasticity robust standard errors in parentheses \*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$

and the coastal towns where there were considerable changes in self-employment rates were brought about, we suggest, not by policy but instead by exogenous shocks. In London, these were wage rises—possibly combined with labour market imperfections—and in coastal towns by a collapse in demand for services provided by the self-employed.

## 6 Conclusions and implications

This paper has discussed both the theory and prior work on the effectiveness of policies to promote entrepreneurship. It then makes an assessment of the impact of the Wales EAP—the cost of which was £245 million.

Cost-effective policy in this area requires evidence of four links. The first is a correlation between entrepreneurship indicators and measures of economic development. Our view is that, although the evidence is not wholly consistent, this link can be accepted. The second link implies that it is entrepreneurship that brings about causes/improvements in economic development. Our review questions this link by drawing upon influential theories and empirical analysis which suggests the relationship maybe in the opposite direction. This implies that public policies, such as the EAP, seeking to raise entrepreneurship with the expectation that they will enhance economic development risk are ineffective. They risk treating the symptoms rather than the causes.

The case for link 3 is based upon information imperfections on the part of individuals, but much less clear is support for link 4—that public intervention can enhance this knowledge and ensure it is delivered in a cost-effective manner. To date, there is considerable evidence that those policies that have been subject to careful reliable evaluation have been either ineffective or have had only a short-lived effect.

Our findings for the Wales EAP are therefore in keeping with much prior work using robust statistical analysis on large randomised samples that minimise the use of self-report data. The ineffectiveness of policy we see strongly reflects the role played by link 2—the direction of causation between entrepreneurship and economic development but also by the methods and data used.

Another possible explanation for this modest impact may be that changes are difficult to engineer. Recent findings for the UK (Fotopoulos 2014), Germany (Fritsch and Wyrwich 2014) and Sweden (Andersson and Koster 2011) point to considerable persistence in interregional differences in entrepreneurship over often long periods of time. The favoured explanation offered in these studies is that the regional determinants of entrepreneurship are also strongly time-persistent and that many areas have deeply rooted cultures which are difficult to change. The inference is that if the culture in the low enterprise areas were to be changed by policy, then this would subsequently yield positive economic change.

However, this explanation is unattractive to policy makers for two reasons. The first is because the impact of any policy is likely to take several decades to emerge, and when it does, it is likely to have been influenced by a range of influences external to the policy. The second problem is that the theoretical foundation for such policies is increasingly questioned. In particular, there is now an increased awareness that entrepreneurship is a response to, perhaps as well as a cause of, economic change. So, if cultural institutions and attitudes primarily reflect the scale of prior entrepreneurial activity, then seeking to raise rates would be to treat the symptom rather than the cause.

Our findings suggest that, in a low-enterprise country such as Wales, the use of considerable public funding to directly raise enterprise rates has not been effective in the medium term. Instead, the geographical areas in England that have seen marked rises in enterprise rates are where employee wages are high and have (probably) risen rapidly, are attractive to immigrants and generally have higher levels of human capital. It is these influences that merit further attention rather than the use of public subsidies to promote ‘more’ entrepreneurship or to change the attitudes of the current population.

**Acknowledgments** Earlier versions of the paper were presented at the Oslo Workshop on Self-employment, Entrepreneurship and Public Policy. We appreciate all comments received, but particularly those provided by our discussant Jarle Moen. A second presentation was made at Trinity College Dublin, which also helped us considerably, but we alone remain responsible for the views expressed.

## Appendix

**Table 5** Correlation coefficients matrix of variables for models having 1991 as a base year

Variables	1	2	3	4	5	6	7	8	9	10
1 RMI_91-01	1.00									
2 WALES	-0.11	1.00								
3 LONDON	0.38	-0.08	1.00							
4 COASTAL	-0.33	0.25	-0.19	1.00						
5 SELFR_91	-0.15	-0.03	-0.01	0.28	1.00					
6 ΔHUMANCAP_91-01	0.44	-0.05	0.74	-0.25	0.03	1.00				
7 ΔIMMIGR_91-01	0.30	-0.15	0.76	-0.23	-0.05	0.76	1.00			
8 ΔHUMANCAP_91-01	0.20	-0.05	-0.14	-0.25	-0.23	-0.08	-0.23	1.00		
9 ΔSMFP_91-01	-0.21	0.13	-0.15	0.36	0.49	-0.23	-0.21	-0.08	1.00	
10 ΔAGES_5564 (91-01)	0.01	-0.25	-0.16	-0.17	0.39	-0.14	-0.19	0.03	0.05	1.00

**Table 6** Correlation coefficients matrix of variables in models having 2001 as base year

Variables	1	2	3	4	5	6	7	8	9	10	11	12
1 RMI_01-11	1.00											
2 WALES	-0.15	1.00										
3 LONDON	0.51	-0.08	1.00									
4 COASTAL	-0.29	0.25	-0.19	1.00								
5 SELFR_01	-0.11	-0.08	0.13	0.15	1.00							
6 ΔHUMANCAP_01-11	0.01	-0.10	-0.16	-0.05	0.38	1.00						
7 ΔIMMIGR_01-11	0.49	-0.13	0.60	-0.24	-0.20	-0.23	1.00					
8 ΔHOMEOWN_01-11	-0.28	0.19	-0.35	0.06	0.09	0.15	-0.64	1.00				
9 ΔSMFP_01-11	0.41	-0.03	0.28	-0.07	-0.37	-0.33	0.47	-0.46	1.00			
10 ΔAGES_55-64	-0.28	0.18	-0.45	0.22	0.19	0.21	-0.73	0.55	-0.29	1.00		
11 MEANPAY	0.27	-0.15	0.48	-0.27	0.14	0.06	0.44	-0.24	0.00	-0.44	1.00	
12 PAYINEQ	-0.08	0.02	-0.06	0.02	0.01	0.00	-0.02	-0.06	-0.01	-0.02	0.17	1.00

**Table 7** Ordinary least squares econometric analyses of rank changes in regional self-employment rates: 2011 Census LADs

	(1) RMI_91-01	(2) RMI_01-11	(3) RMI_91-01	(4) RMI_01-11	(5) RMI_01-11	(6) RMI_01-11	(7) RMI_01-11	(8) RMI_01-11
WEST WALES & VALLEYS	-0.0251* (0.0145)	-0.0336*** (0.0109)	-0.0225 (0.0158)	-0.0259* (0.0142)	-0.0327** (0.0159)	-0.0348** (0.0160)	-0.0237 (0.0147)	-0.0326** (0.0162)
EAST WALES	0.0247 (0.0209)	-0.0066 (0.0198)	0.0048 (0.0233)	-0.0019 (0.0204)	-0.0161 (0.0190)	-0.0128 (0.0173)	-0.0052 (0.0220)	-0.0155 (0.0190)
SELF91	-0.2582** (0.1314)	-0.3606*** (0.1117)			-0.0489 (0.1548)			
LONDON	0.1068*** (0.0189)	0.1234*** (0.0237)	0.0667*** (0.0235)	0.0830*** (0.0189)		0.0767*** (0.0200)		



**Table 7** (continued)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	RMI_91-01	RMI_01-11	RMI_91-01	RMI_01-11	RMI_01-11	RMI_01-11	RMI_01-11	RMI_01-11
COASTAL	-0.0526*** (0.0107)	-0.0260*** (0.0071)	-0.0358*** (0.0106)	-0.0249*** (0.0084)			-0.0247*** (0.0085)	
$\Delta$ HUMANCAP			1.0041*** (0.2237)	0.8866*** (0.2912)	0.8119** (0.3625)	0.8904*** (0.3115)	0.7364** (0.3339)	0.7888** (0.3374)
$\Delta$ IMMIGR			-0.8184 (0.5192)	0.6852** (0.2859)	1.1433*** (0.3403)	0.7747** (0.3106)	1.0707*** (0.3439)	1.1460*** (0.3363)
$\Delta$ HOMEOWN			0.6742*** (0.1932)	0.2871 (0.1840)	0.3975* (0.2072)	0.3746* (0.1942)	0.3280 (0.2025)	0.4092** (0.2071)
$\Delta$ SMFP			-0.0030 (0.0022)	0.0252** (0.0125)	0.0266* (0.0133)	0.0259** (0.0125)	0.0265* (0.0142)	0.0271** (0.0134)
$\Delta$ AGES_55-64			0.0832 (0.2211)	0.6749* (0.3920)	0.9023* (0.4527)	0.7299* (0.4144)	0.9277** (0.4242)	0.8760** (0.4272)
MEANPAY					0.0024* (0.0013)	0.0008 (0.0013)	0.0019* (0.0012)	0.0023* (0.0013)
PAYINEQ					-0.0428 (0.0273)	-0.0267 (0.0239)	-0.0395 (0.0261)	-0.0423 (0.0273)
CONSTANT	0.0326** (0.0141)	0.0408*** (0.0135)	-0.0463*** (0.0152)	-0.1451*** (0.0321)	-0.1248** (0.0600)	-0.1208** (0.0582)	-0.1172* (0.0617)	-0.1280** (0.0631)
<i>N</i>	348	348	348	348	339	339	339	339
<i>R</i> <sup>2</sup>	0.2223	0.3272	0.3009	0.4356	0.3646	0.4155	0.3829	0.3643
$\bar{R}^2$	0.2110	0.3174	0.2823	0.4206	0.3452	0.3977	0.3641	0.3469
<i>F</i>	18.2200***	13.4301***	13.7658***	9.9472***	6.6114***	6.9029***	8.1664***	7.2635***
$\sqrt{\text{VIF}}$	1.09	1.07	1.82	1.70	1.65	1.73	1.62	1.64

Heteroscedasticity robust standard errors in parentheses

\* significant at 10%, \*\* significant at 5%, \*\*\* significant at 1%

## References

- Acs, Z. J., & Audretsch, D. B. (1987). Innovation, market structure, and firm size. *Review of Economics and Statistics*, 69(4), 567–574. <https://doi.org/10.2307/1935950>.
- Acs, Z., Åstebro, T., Audretsch, D., & Robinson, D. T. (2016). Public policy to promote entrepreneurship: a call to arms. *Small Business Economics*, 47(1), 35–51. <https://doi.org/10.1007/s11187-016-9712-2>.
- Andersson, M., & Koster, S. (2011). Sources of persistence in regional start-up rates—evidence from Sweden. *Journal of Economic Geography*, 11(1), 179–201. <https://doi.org/10.1093/jeg/lbp069>.
- Arshed, N., Carter, S., & Mason, C. (2014). The ineffectiveness of entrepreneurship policy: is policy formulation to blame? *Small Business Economics*, 43(3), 639–659. <https://doi.org/10.1007/s11187-014-9554-8>.
- Arshed, N., Mason, C., & Carter, S. (2016). Exploring the disconnect in policy implementation: a case of enterprise policy in England. *Environment and Planning C: Government and Policy*, 34(8), 1582–1611. <https://doi.org/10.1177/0263774X16628181>.
- Autio, E., & Rannikko, H. (2016). Retaining winners: can policy boost high-growth entrepreneurship? *Research Policy*, 45(1), 42–55. <https://doi.org/10.1016/j.respol.2015.06.002>.
- Bertrand, M., & Mullainathan, S. (2001). Do people mean what they say? Implications for subjective survey data. *American Economic Review*, 91(2), 67–72. <https://doi.org/10.1257/aer.91.2.67>.
- Birch, D. (1981). Who creates jobs? *The Public Interest*, 65(Fall), 3–14.
- Black, J., de Meza, D., & Jeffries, D. (1996). House prices, the supply of collateral and the enterprise economy. *Economic Journal*, 106(434), 60–75. <https://doi.org/10.2307/2234931>.
- Blackburn, R. A., Mackintosh, L., & North, J. (1999). *Entrepreneurship in the third age*. Kingston Upon Thames: Small Business Research Centre, Kingston University.
- Bönte, W., Falck, O., & Heblich, S. (2009). The impact of regional age structure on entrepreneurship. *Economic Geography*, 85(3), 269–287. <https://doi.org/10.1111/j.1944-8287.2009.01032.x>.
- Bridge, S. (2010). *Re-thinking enterprise policy: can failure trigger new understanding?* Basingstoke: Palgrave. <https://doi.org/10.1057/9780230289833>.
- Brown, R., Mawson, S., & Mason, C. (2017). Myth-busting and entrepreneurship policy: the case of high growth firms.

- Entrepreneurship & Regional Development*, 29 (5-6), 414–433. <https://doi.org/10.1080/08985626.2017.1291762>.
- Bruns, K., Bosma, N., Sanders, M., Schramm, M. (2015). Entrepreneurship, institutions and growth in European regions: a uniform mechanism? Tjalling C. Koopmans Research Institute, Utrecht School of Economics, Discussion Paper Series 15-02.
- Caliendo, M., Künn, S., & Weissenberger, M. (2016). Personality traits and the evaluation of start-up subsidies. *European Economic Review*, 86, 87–108. <https://doi.org/10.1016/j.eurocorev.2015.11.008>.
- Carree, M., Congregado, E., Golpe, A., & van Stel, A. (2015). Self-employment and job generation in metropolitan areas, 1969–2009. *Entrepreneurship and Regional Development*, 27(3–4), 181–201. <https://doi.org/10.1080/08985626.2015.1025860>.
- Chatterjee, S., & Hadi, A. S. (2012). *Regression analysis by example*. New Jersey: Wiley.
- Chrisman, J. J., & McMullan, W. E. (2000). A preliminary assessment of outsider assistance as a knowledge resource: the longer-term impact of new venture counselling. *Entrepreneurship Theory and Practice*, 24(3), 39–53.
- Clark, K., & Drinkwater, S. (1998). Ethnicity and self-employment in Britain. *Oxford Bulletin of Economics and Statistics*, 60(3), 383–407. <https://doi.org/10.1111/1468-0084.00105>.
- Coad, A., Frankish, J. S., Roberts, R. G., & Storey, D. J. (2016). Predicting new venture survival and growth: when does the fog lift? *Small Business Economics*, 47(1), 217–241. <https://doi.org/10.1007/s11187-016-9713-1>.
- Colombelli, A., Krafft, J., & Vivarelli, M. (2016). To be born is not enough: the key role of innovative start-ups. *Small Business Economics*, 47(2), 277–291. <https://doi.org/10.1007/s11187-016-9716-y>.
- Davis, S. J., Haltiwanger, J., & Schuh, S. (1996). Small business and job creation: dissecting the myth and reassessing the facts. *Small Business Economics*, 8(4), 297–315. <https://doi.org/10.1007/BF00393278>.
- Entrepreneurship Action Plan for Wales-Strategy Document. (1998) <http://www.arsyllfadysgu.com/uploads/publications/674.pdf>. Accessed 7 Dec 2016.
- Eurofound (2016). Start-up support for young people in the EU: from implementation to evaluation, Dublin.
- Fairlie, R. W., Karlan, D., & Zinman, J. (2015). Behind the GATE experiment: evidence on effects of and rationales for subsidized entrepreneurship training. *American Economic Journal: Economic Policy*, 7(2), 125–161. <https://doi.org/10.1257/pol.20120337>.
- Faria, J. R., Cuestas, J. C., & Mourelle, E. (2010). Entrepreneurship and unemployment: a nonlinear bidirectional causality? *Economic Modelling*, 27(5), 1282–1291. <https://doi.org/10.1016/j.econmod.2010.01.022>.
- Fotopoulos, G. (2014). On the spatial stickiness of UK new firm formation rates. *Journal of Economic Geography*, 14(3), 651–679. <https://doi.org/10.1093/jeg/lbt011>.
- Fotopoulos, G., & Storey, D. J. (2017). Persistence and change in interregional differences in entrepreneurship: England and Wales, 1921–2011. *Environment and Planning A*, 49(3), 670–702. <https://doi.org/10.1177/0308518X16674336>.
- Fraser of Allander Institute (2001). Promoting business start-ups: a new strategic formula; stage 1: progress review; final report. Fraser of Allander Institute for Research on the Scottish Economy. Glasgow: University of Strathclyde.
- Fritsch, M. (2011). The effect of new business formation on regional development; empirical evidence, interpretation, and avenues for further research. In M. Fritsch (Ed.), *Handbook of research on entrepreneurship and regional development: national and regional perspectives* (pp. 58–106). Cheltenham: Edward Elgar.
- Fritsch, M., & Wyrwich, M. (2014). The long run persistence of regional levels of entrepreneurship. *Regional Studies*, 48(6), 955–973. <https://doi.org/10.1080/00343404.2013.816414>.
- Georgellis, Y., & Wall, H. J. (2000). What makes a regional entrepreneurial? Evidence from Britain. *Annals of Regional Science*, 34(3), 385–403. <https://doi.org/10.1007/s001689900014>.
- Georgiadis, A., & Pitelis, C. N. (2016). The impact of employees' and managers' training on the performance of small- and medium-sized enterprises: evidence from a randomized natural experiment in the UK service sector. *British Journal of Industrial Relations*, 54(2), 409–421. <https://doi.org/10.1111/bjir.12094>.
- Ghatak, M., Morelli, M., & Sjöström, T. (2007). Entrepreneurial talent, occupational choice and trickle up policies. *Journal of Economic Theory*, 137(1), 27–48. <https://doi.org/10.1016/j.jet.2006.02.007>.
- Government Accountability Office (2012). Opportunities to reduce duplication, overlap and fragmentation, achieve savings, and enhance revenue. Washington DC.
- Greene, F. J. (2009). Assessing the impact of policy interventions: the influence of evaluation methodology. *Environment and Planning C*, 27(2), 216–229. <https://doi.org/10.1068/c07103b>.
- Greene, F. J., Mole, K., & Storey, D. J. (2004). Does more mean worse? Three decades of enterprise policy in the Tees Valley. *Urban Studies*, 41(7), 1207–1228. <https://doi.org/10.1080/0042098042000214752>.
- Hirschberg, D. (1999). *The job generation controversy: the economic myth of small businesses*. New York: M.E. Sharp.
- International Labour Office (2015). Self-employment programmes for young people: a review of the context, policies and evidence. Employment Policy Department, Employment and Labour Market Policies Branch, ILO, Geneva.
- Levie, J., & Hart, M. (2011). GEM UK: Wales Report 2011. <http://gov.wales/docs/det/publications/121109gemen.pdf>. Accessed 7 Dec 2016.
- Levie, J., & Hart, M. (2012). GEM UK: Wales Report 2012. <http://gov.wales/docs/det/publications/140612gem12en.pdf>. Accessed 7 Dec 2016.
- Levie, J., Hart, M., & Bonner, K. (2014). GEM UK: Wales Report 2014. <http://gov.wales/docs/det/publications/160506-gem-report-2014-en.pdf>. Accessed 7 Dec 2016.
- Loersch, C. (2014). *Business start-up and the effect of coaching programmes*. University of Potsdam.
- Lundström, A., & Stevenson, L. (2006). *Entrepreneurship policy: theory and practice*. Dordrecht: Kluwer.
- Lundström, A., Vikström, P., Fink, M., Meuleman, M., Glódek, P., & Storey, D. J. (2014). Measuring the costs and coverage of SME and entrepreneurship policy: a pioneering study. *Entrepreneurship Theory and Practice*, 38(4), 941–957. <https://doi.org/10.1111/etap.12037>.

- Mason, C., & Brown, R. (2013). Creating good public policy to support high-growth firms. *Small Business Economics*, 40(2), 211–225. <https://doi.org/10.1007/s11187-011-9369-9>.
- McCann, P., & Ortega-Argilés, R. (2016). Smart specialisation, entrepreneurship and SMEs: issues and challenges for a results-oriented EU regional policy. *Small Business Economics*, 46(4), 537–552. <https://doi.org/10.1007/s11187-016-9707-z>.
- National Audit Office. (2013). *Evaluation in government*. London: National Audit Office.
- OECD (2007). OECD framework for the evaluation of SME and entrepreneurship policies and programmes. Paris: OECD.
- Oh, I., Lee, J.-D., Heshmati, A., & Choi, G.-G. (2009). Evaluation of credit guarantee policy using propensity score matching. *Small Business Economics*, 33(3), 335–351. <https://doi.org/10.1007/s11187-008-9102-5>.
- Parker, S. C. (2009). *The economics of entrepreneurship*. Cambridge: Cambridge University Press.
- Parker, S. C., Congregado, E., & Golpe, A. A. (2012). Is entrepreneurship a leading or lagging indicator of the business cycle? Evidence from UK self-employment data. *International Small Business Journal*, 30(7), 736–753. <https://doi.org/10.1177/0266242612437560>.
- Peng, M. W., Yamakawa, Y., & Lee, S. H. (2010). Bankruptcy laws and entrepreneur-friendliness. *Entrepreneurship Theory and Practice*, 34(3), 517–530. <https://doi.org/10.1111/j.1540-6520.2009.00350.x>.
- Pons Rotger, G., Gørtz, M., & Storey, D. J. (2012). Assessing the effectiveness of guided preparation for new venture creation and performance: theory and practice. *Journal of Business Venturing*, 27(4), 506–521. <https://doi.org/10.1016/j.jbusvent.2012.01.003>.
- Porter, M. E. (1990). *The competitive advantage of nations*. New York: Free Press.
- Qian, H., & Acs, Z. J. (2013). An absorptive capacity theory of knowledge spillover entrepreneurship. *Small Business Economics*, 40(2), 185–197. <https://doi.org/10.1007/s11187-011-9368-x>.
- Rhisiart, M., & Jones-Evans, D. (2016). The impact of foresight on entrepreneurship: the Wales 2010 case study. *Technological Forecasting and Social Change*, 102, 112–119. <https://doi.org/10.1016/j.techfore.2015.03.010>.
- Rodríguez-Pose, A., & Hardy, D. (2015). Cultural diversity and entrepreneurship in England and Wales. *Environment and Planning A*, 47, 392–411. <https://doi.org/10.1068/a130146p>.
- Rogerson, P. A. (2001). *Statistical methods for geography*. London: Sage.
- Storey, D. J. (1982). *Entrepreneurship and the new firm*. London: Croom Helm.
- Storey, D. J. (1994). *Understanding the small business sector*. London: Thompson-Learning.
- Storey, D. J., & Greene, F. J. (2010). *Small business and entrepreneurship*. London: Pearson/FT.
- Stuetzer, M., Obschonka, M., Audretsch, D. B., Wyrwich, M., Rentfrow, P. J., Coombes, M., et al. (2016). Industry structure, entrepreneurship and culture: an empirical analysis using historical coalfields. *European Economic Review*, 86, 52–72. <https://doi.org/10.1016/j.euroecorev.2015.08.012>.
- Vivarelli, M. (2004). Are all potential entrepreneurs so good? *Small Business Economics*, 23(1), 41–49. <https://doi.org/10.1023/B:SBEJ.0000026023.11752.a9>.
- Wren, C., & Storey, D. J. (2002). Evaluating the effect of soft business support upon small firm performance. *Oxford Economic Papers*, 54(2), 334–365. <https://doi.org/10.1093/oep/54.2.334>.
- Yusuf, J.-E. (2014). Impact of start-up support through guided preparation. *Journal of Entrepreneurship and Public Policy*, 3(1), 72–95. <https://doi.org/10.1108/JEPP-01-2012-0004>.