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Citation for final published version:

Gooberman, Leon and Boyns, Trevor 2019. Public venture capital in a regional economy: The Welsh Development Agency 1976-1994. *Enterprise and Society* 20 (4) , pp. 978-1006. 10.1017/eso.2019.15

Publishers page: <http://dx.doi.org/10.1017/eso.2019.15>

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Public Venture Capital in a Regional Economy: The Welsh Development Agency 1976-1994

Abstract

Between 1976 and 1994 the UK Government's Welsh Development Agency made 2,304 loan and equity investments totalling £117.8 million. The agency aimed to address difficulties faced by firms in obtaining finance, and such intervention was justified by the market failure and spillover hypotheses. This article assesses the agency's investment activities against both justifications. It finds that while some investments succeeded, the portfolio's financial performance was poor and the agency did not address widespread market failure. Evidence of spillover returns existed, but cannot be quantified accurately across the portfolio. The article argues that the agency's two venture capital objectives: to assemble a profitable portfolio; and, to grow employment levels through boosting commercial activity, were incompatible within a poorly performing regional economy. Although spillovers can justify public venture capital in such economies, expectations as to financial performance should be realistic in the absence of an ecosystem that facilitates demand for capital.

Introduction

Difficulties faced by some viable small and medium sized firms in obtaining finance have long been central to debates on the UK's economic problems.¹ In 1930 Keynes described these companies as an "unsatisfied fringe of borrowers."² The problems this "fringe" faced in obtaining capital became known as the "Macmillan Gap" in 1931 after the government's Macmillan Review of Finance and Industry.³ Government reports returned to the topic over subsequent decades, recommending interventions to increase the flow of capital to small and medium sized businesses.⁴

The "Macmillan Gap" thesis proposes that capital markets are prejudiced against smaller companies for two reasons: the structural characteristics of equity; and information asymmetry leading to overly conservative perceptions of risk by financial institutions.⁵ In relation to the first explanation, Coase's analysis of transaction costs implies that the cost of raising equity creates a threshold level below which it becomes uneconomic.⁶ Debt is often more attractive for smaller businesses as it is cheaper than equity and does not usually involve loss of ownership or control.⁷ However, the second explanation applies to both debt and equity, as the cost to investors of obtaining information on small companies is high compared to the potential rewards. Not only must much data be collected on many prospective investments but, more crucially, businesses seeking finance are often start-ups without a track record to reassure investors. Stiglitz and Weiss argued that such asymmetry creates markets featuring imperfect information where companies with viable projects are either unable to obtain financing or must accept debt at high levels of interest.⁸

Information asymmetry also has regional dimensions. The decision-making functions of regional banks are closer to local business when compared to large national banks. This proximity enables regional banks to gather data on local applicants at a lower cost than that faced by national banks. Carnevali argued that the post-war lack of such banks in the UK's regions ensured that London clearing banks were the most important source of finance for smaller regional firms, but the scale and centralised structures of clearing banks hampered efficient risk assessment.⁹ Moreover, Berger et. al. argued that regional banks are locally embedded with greater access to "soft" information such as the character of managers within applicant companies.¹⁰ Carnevali tested this hypothesis by examining banks in the commercially successful region of northern Italy, finding that they used local knowledge to construct a mutually beneficial credit relationship with regional firms,¹¹ although such approaches required a pre-existing local stock of successful firms and individual entrepreneurs.

Government intervention that attempts to fill the "Macmillan Gap" has two justifications. The first is that the gap is caused by market failure. Governments can fill this gap with their own venture capital,¹² but Lerner noted how such programmes "far more often than not, have been failures."¹³ The second is the spillover hypothesis. This accepts that returns from rejected projects could be less than the opportunity cost of funding, but that government financing generates positive externalities.¹⁴ Spillover returns can include broader economic impacts including salaries, rates, rents and taxes, as well as expenditure on goods and services. Mazzucato placed spillover arguments in a broader context, proposing that intervention beyond that justified by market failure is crucial for the market shaping role of an "entrepreneurial state," if the short-termism of private finance is to be overcome for the public good.¹⁵

Despite the topic's continued salience, it has been little studied in relation to UK regions.¹⁶ In particular, the business history literature lacks such studies as part of a broader trend of what Wren called the "remarkable" lack of evaluation of financial support to UK industry.¹⁷ This article addresses this gap by examining the loan and equity investment activities of the government's Welsh Development Agency (WDA) between 1976 and 1994. Our research question is: can the WDA's activities be justified in terms of the market failure and/or spillover hypotheses?

This examination has two merits. One is that the agency was an example of government attempts to fill the "Macmillan Gap" in a peripheral and poorly performing economy. The other is that the market failure argument remains prominent within ongoing debates on venture capital and development finance. Internationally, the United Nations has argued that development banks can be "instrumental not only in addressing market failures [...] but as a critical tool in supporting a proactive development strategy."¹⁸ Nationally, Wales' percentage share of the UK's venture capital funding remains low.¹⁹ Following the cessation of the WDA's activities, the Welsh Government created Finance Wales in 2001 to increase the provision of business finance, subsequently folding it into a new Development Bank in 2016 to "support the economy [...] by making it easier for businesses to get the finance needed to start up, strengthen and grow."²⁰

The article uses three primary data sources to assemble its account. The first, and most important, are the WDA's board papers held by the UK's National Archives. The second is official documentation produced by the WDA and other bodies such as the Welsh Office, a territorial government department. Finally, the article draws on interviews with politicians and former managers at the agency. The article uses these data to assess the agency's activities

against the market failure and spillover hypotheses. In relation to the former, the Welsh Office instructed the agency in 1978 to measure the rate of return on capital employed by its investment portfolio, to be compared against targets. Although definitions of the rate of return changed over time, time-series data based on financial year-end reports are available. No data exist, however, on the proportion of investments that succeeded or failed although board papers and the WDA's annual reports contain data on the performance of some individual investments.

Little data exist by which to test the spillover hypothesis. While annual "forecast additional employment" expected to be created by the portfolio are available, those on employment achieved or data that eliminates double counting over time are not.²¹ Data on other spillover impacts such as salaries, rates, rents, taxes and expenditure on goods and services are also absent. The National Audit Office noted in 1985 that the Welsh Office (and its Scottish equivalent) "did not seek information [from their agencies] on jobs created, maintained or safeguarded by the investment function or other economic and social benefits arising."²² The only data on spillovers are contained within a 1993 evaluation of a sample of investments made by the agency between 1987-88 and 1990-91.²³

The article finds that although some of the WDA's investments were viable, based on commercial criteria, its portfolio performed poorly and an "unsatisfied fringe" of viable projects did not exist except at the margins. However, spillover returns, magnified by the depressed economic conditions of the time, did exist, making some non-commercially viable investments worthwhile in terms of their social rate of return. However, such returns are difficult, if not impossible to quantify due to the lack of appropriate data. The central problem faced by the agency was the incompatibility of its two investment objectives: to assemble a profitable portfolio (reflecting purely commercial considerations); and, to grow employment

levels through boosting commercial activity (reflecting a concern with social, rather than commercial, rates of return). The findings suggest that while scope exists for state-backed venture capital, obtaining a successful return requires an ecosystem across knowledge, technical skills, and financial support to facilitate demand for capital.²⁴ Crucially, creation of such ecosystem attributes, where some or all do not exist, is beyond the sole institutional capacity of most regional government bodies; they can only form part of a broader approach led by national governments that can deploy a full range of governance powers.

The remainder of this article is structured as follows. The next section discusses state provision of venture capital in Wales between the 1930s and the establishment of the WDA. The subsequent parts examine the agency's activities and achievements across four periods between 1976 and 1994. The final section assesses the extent to which these activities justified the market failure and spillover arguments, before concluding.

Targeting the “Macmillan Gap” in Wales, 1936 - 1976

The industrial economy of Wales in the eighteenth and nineteenth centuries depended on coal mining and metal manufacturing. Large financial institutions did not emerge as entrepreneurs sourced funding from ploughed back profits or imported capital from England.²⁵ However, demand for primary products collapsed in the 1920s and Wales became mired in depression. Pressure mounted on the government and in 1934 it designated south Wales as a “Special Area.”²⁶ The Bank of England's Special Areas Reconstruction Association offered loans from 1936, joined from 1937 by HM Treasury's Special Areas Loans Advisory Committee, but total lending from both sources was small in volume.²⁷

Wartime necessity compelled the state to reconstruct Wales' industrial economy between 1939 and 1945, and its newly dominant role continued after the war's end. Post-war governments channelled intervention through the nationalised industries of coal and steel, as well as regional policy instruments that controlled industrial location, constructed factories and provided finance.²⁸ Finance played a small role initially and two funding mechanisms existed from 1945.²⁹ The first was HM Treasury's Development Areas Advisory Committee, but it financed only 99 companies in Wales between 1960 and 1966. Its loan criteria excluded start-up and high-risk projects,³⁰ and demand was low. Officers visited 174 companies in Wales in 1959 but only 13 would consider applying for loans.³¹ The other mechanism was the Industrial and Commercial Finance Corporation (ICFC), formed by clearing banks and the Bank of England. Although Wales had a 4.1 per cent share of the UK's employees in 1970,³² only 1.6 per cent of the ICFC's debt was held there, having fallen from 2 percent in 1960 and 2.7 per cent in 1951. The ICFC noted that although its Cardiff office did as "much [business] as we could expect" it was less profitable than other branch offices.³³ The corporation attributed low demand to an industrial structure in Wales that featured concentrations of heavy industry, implying that other activity had been crowded out.

In 1968 the Welsh Council, an advisory body to government, appointed a Finance Panel to explore problems faced by businesses seeking capital. The panel's majority report argued that "gaps in the financial structure" created market failure as clearing banks with "marginal" interests in Wales based lending policies on UK-wide conditions, creating a shortage of local risk capital. It proposed the creation of an investment bank with policies dictated by local conditions to address market failure, although a dissenting minority report was also published that argued the problem was demand, not supply.³⁴ A Cardiff financier, Julian Hodge, responded that Wales had no indigenous financial institutions except for his own small

merchant bank, in contrast to Scotland. He proposed a new bank to give “help and advice, and finance, to indigenous Welsh industry, to promote [its] development,” while “building up Cardiff as a financial centre.”³⁵ Hodge established the Commercial Bank of Wales in 1971 and although it was profitable the extent to which it fulfilled a developmental mission is unclear. The bank only approved 0.5 per cent of loan requests and a lack of “viable” Welsh projects (possibly reflecting the high interest rates charged) meant that its business was mostly outside Wales.³⁶

The continuation of government intervention in Wales in the 1970s and beyond was facilitated by an administratively devolved government department created in 1964, the Welsh Office. It was controlled by a Secretary of State for Wales, a cabinet minister with broad responsibilities.³⁷ From 1974 the Secretary of State was Labour’s John Morris, who noted that he was part of “an interventionist government.”³⁸ In 1975, the Labour government established the National Enterprise Board (NEB) to invest in industry in England, and the Scottish Development Agency (SDA). Echoing the latter’s inauguration, on 1 January 1976 the WDA was established as the most powerful agency in Wales, holding many of the powers exercised in England by the NEB and in Scotland by the SDA.³⁹ The WDA’s investment remit was set out in the Welsh Development Agency Act 1975 as including: acquiring, holding and disposing of securities; forming companies and partnerships; and, making loans and issuing guarantees.⁴⁰ The agency also constructed and let factories, cleared derelict land and provided business advice to companies as part of its broad mission to regenerate the Welsh economy.⁴¹

The WDA and venture capital

Between 1976-77 and 1993-94 the WDA made 2,304 loan or equity investments totalling £117.8 million.⁴² Annual expenditure fluctuated but peaked at £14.2 million in 1984-85 (see Graph 1). The number of companies receiving new support in each year reached 310 in 1989-90 (see Graph 2) and the number of firms in the portfolio peaked at 1,021 in 1990-91. The portfolio's value peaked at £35 million in 1988-89.

[Graph 1 here]

[Graph 2 here]

Between 1976-77 and 1993-94, the activities of the Welsh Office and the WDA were overseen by five different Secretaries of State: John Morris (1974-79); Nicholas Edwards (1979-1987); Peter Walker (1987-1990); David Hunt (1990-93) and John Redwood (1993-95). While the last four were Conservative politicians, they did not all have the same approach to addressing Wales' real and perceived problems.

By linking the time in office of the Secretaries of State with the data presented in Graphs 1 and 2, four periods are discernible. The first was 1976-77 to 1978-79 when the agency aimed to facilitate economic momentum by investing in large and small firms, including mounting rescue operations, an approach endorsed strongly by John Morris. The second period was 1979-80 to 1986-87 under Nicholas Edwards. Margaret Thatcher's Conservative Government initially curtailed activity but the WDA became an active venture capital investor to small firms and start-ups, although profitability concerns led to investment reducing after 1984-85. The

third and shortest period was 1987-88 to 1989-90 when Peter Walker spurred a short-lived expansion focused on high-risk start-ups. Activity began to decline in the final period from 1990-91, initially under David Hunt, and equity investments had almost ceased even before John Redwood instructed the agency to minimise its lending in 1994. We now examine agency activities across each period.

I. 1976-77 to 1978-1979

The WDA's ambitions were clear from the outset. Its chairman, Sir David Davies, informed the inaugural board meeting that the agency had an "important role to play in providing new industry and new employment opportunities."⁴³ Ambition was, however, tempered by the chairman's comments that "we have not been set up to bail out non-viable projects" and "we cannot achieve our objectives merely by pumping a great deal of money into industrial investment. Sound investment decisions need to be taken." This duality between creating employment and minimising risk was reflected in the guidelines for industrial investment issued by the Welsh Office. The WDA was authorised to take a shareholding of up to £2 million in, or loan up to £1 million to, any business, but was also to be subject to financial targets that would define and measure an "adequate return on capital employed."⁴⁴

The WDA scaled up investment rapidly from £705,000 in 9 companies in 1976-77 to £8.6 million in 143 companies by 1978-79.⁴⁵ It focused on manufacturing, and the service sector accounted for only two per cent of its portfolio in 1979-80.⁴⁶ The agency, like its Scottish counterpart, the SDA,⁴⁷ was initially expected to play a catalytic role as an industrial investment agency supporting large and small businesses,⁴⁸ as part of the Secretary of State's policy to "provide financial packages [to] help both the lame ducks and those who could

waddle.”⁴⁹ The WDA’s portfolio reflected this broad approach. Small companies dominated investments by number, 64 per cent of which were less than £50,000,⁵⁰ and 34 percent were start-ups.⁵¹ However, larger investments, generally in established firms, accounted for over 75 per cent of investment expenditure.

Investment policy focused on generating additional economic activity,⁵² spurring the WDA to take decisions “involving a degree of risk that the banks would not contemplate.”⁵³ This was typified by board decisions taken in October 1978. Having provided two tranches of equity and loans totalling £125,000 over the previous twelve months to Callbuoy Marine Electronics, just four months after the company received the latter the WDA appointed receivers. This decision was taken after new company managers revealed a worsening financial outlook, and efforts by the agency to attract commercial partners failed. At the same time, the WDA board also approved £200,000 for Newport Precision Engineering despite the company’s “somewhat uncertain proposal in a very difficult and high-risk market.”⁵⁴ This risk, however, proved to be justified as the company survived until the mid-1990s.

In December 1978 the agency approved its biggest investment to date: £2 million in the gelatine manufacturer, Leiner. The family-run company had performed well but internal disputes had left it in need of external management and financial support. It employed 530 people at Treforest on the largest industrial estate owned by the agency, where it was a major customer of the WDA’s steam generating plant powered by cheap gas from coking works linked to adjacent collieries. The agency was concerned that without a capital injection, the company would be taken over by a competitor which might close the factory. Closure would have imperilled the steam plant’s viability and although Leiner operated in an oligopolistic market featuring volatile price movements, the WDA’s investment in early 1979 aimed to enable the

company to commercialise a new photographic gelatine technology in a market considered to have great potential.

Despite the intensity of the agency's early investment activity, performance data are limited. In December 1977 central government set the NEB in England a target of achieving a 15 – 20 per cent return by 1981 on investment other than British Leyland and Rolls-Royce. The Welsh Office proposed a similar target for the WDA in 1978, but the agency instead suggested targets that measured the agency's success in promoting industrial efficiencies rather than “simply as a measure of the effectiveness of the agency as an investor.”⁵⁵

However, the Welsh Office was determined to measure the agency's overall financial effectiveness and subsequently instructed it to secure a portfolio rate of return of between 15 and 20 per cent by 1981–82.⁵⁶ The WDA did not report formally against this target until after 1978-79, but it calculated a rate of return of 6 percent at the end of that year and claimed that its investments would create some 3,000 jobs.⁵⁷ Despite setting a high target rate of return, the Secretary of State, John Morris, was keen to see the agency take risks to achieve higher levels of commercial activity, stating that “we wouldn't need the WDA” if it “operated as a sort of a trustee savings bank”.⁵⁸ However, while investments appeared promising, changing circumstances were to place these activities in jeopardy.

II. 1979-80 to 1986-87

After Margaret Thatcher's Conservative Government assumed office in 1979, agency investment fell from £8.6 million in 1978-79 to £0.9 million in 1980-81.⁵⁹ Although the new Secretary of State, Nicholas Edwards, was determined to use the WDA as an “instrument [...]

to address inherited [economic] problems,”⁶⁰ two factors combined to create this decline. The first was his decision to divert funds to a large-scale programme of factory construction to create jobs quickly during the deep recession of 1980-81. The other was the agency’s poor financial performance as it reported negative rates of return for 1979–80 (-15.25 per cent) and 1980-81 (-4.65 per cent).⁶¹

Much of this poor performance was caused by the failure of Leiner’s operations in Wales. The firm built up rent and utility debts to the agency of £1.2 million,⁶² before failing in 1980 forcing the agency to write off its investment. The scale of the failure was damaging, as was the fact that the agency’s Director of Industry and Investment, Jack Loveland, had joined Leiner as their Chief Executive after the WDA had approved its investment.⁶³ While the agency noted that Leiner’s aging leadership and history of internal conflict meant that new management was required, Loveland made his decision independently. Nevertheless the agency’s reputation was tarnished by this action and WDA board member Garel Rhys argued later that the Welsh Office “just didn't trust the WDA after Leiner.”⁶⁴

Tensions between the Welsh Office and the agency often flared, generally caused by differences between the former’s more cautious approach to the use of public funds, reflecting HM Treasury’s guidance, and the latter’s greater readiness to take risks. Senior civil servants within the Welsh Office’s Industry Division put such concerns to their Permanent Secretary in 1980: although the WDA “seemed to fancy themselves as merchant bankers,” in their opinion there was “no great funding gap, except of course for difficult projects, which [it] should not be involved in.”⁶⁵ The Welsh Office subsequently insisted on signing off investments over £1 million, and instructed the agency to invest only where sufficient finance was not available from the private sector on “appropriate terms.”⁶⁶

However, economic problems meant that investment soon re-emerged as a priority. Employment in manufacturing, coal and steel throughout Wales fell by 35.3 per cent between 1979 and 1985,⁶⁷ while unemployment remained at post-war peaks until 1985.⁶⁸ In response, David Waterstone, WDA Chief Executive between 1981 and 1990, was determined to “re-commercialise” and “empower” the Welsh people through taking risks and accepting losses.⁶⁹ In 1985 the Secretary of State set out an agenda for investment that characterised his period in office between 1979 and 1987. He drew on declinist concepts then present within historical scholarship to attack the “prejudice, ignorance, and striking lack of awareness” displayed by those in the City towards areas “outside their own experience,” before stating that his “central aim [was] to use the funds at our disposal to act as a lead and catalyst for the growing investment and participation of the private sector.”⁷⁰

Two perceived market imperfections drove strategy throughout the decade. The first was how the absence of local financial institutions created a finance gap, particularly for small and high-risk projects. Although the WDA was “dogged by a lack of projects” in the early 1980s as “the stratum of indigenous business [was] pretty thin,”⁷¹ it claimed to be an “established and successful merchant banker” and expanded its investment activities.⁷² New annual investment grew from £2.6 million in 56 companies in 1981-82 to £14.2 million in 87 companies by 1984-85, the largest sum invested in any one year (see Graph 1), although concerns as to profitability led to subsequent reductions.

Some investments produced high returns, with successful exits including W. Williams & Sons Holdings, an engineering specialist. The WDA had acquired a 28.4 per cent stake in 1979 for £307,000 and sold it in 1983 for £574,000.⁷³ However, 13 companies failed in that year and the agency lost most of the £800,000 it had invested.⁷⁴ The agency’s ambition was symbolised

by its 1984 investment in a “very ambitious but strategically important” start-up manufacturer of computer discs, Parrot PLC.⁷⁵ The WDA invested £1.5 million (followed by a £750,000 loan guarantee), while commercial sources provided £5.5 million. The agency proudly promoted the deal as one of the largest start-up venture capital deals of that year in either Europe or the United States,⁷⁶ although its eventual failure in the late 1980s was to equal Leiner in scale and impact (see below).

The second perceived imperfection was investors’ poor awareness of profitable opportunities in Wales.⁷⁷ The WDA noted later that it was influenced strongly by estimates that 78 per cent of venture capital investments were made within a two hour drive of a fund’s office but 73 per cent of the UK’s funds were based in London,⁷⁸ more than two hours drive from any part of Wales. While the agency had tackled this from 1976 by investing itself, it now sought to create new funds to produce a “distinct, local” financial services sector.⁷⁹ In 1982 it launched Hafren Investment Finance to invest in new technology and high-risk projects. A marketing campaign attracted 1,000 enquiries and 150 applications, and loans totalling £791,000 in 17 companies were approved. Another initiative, the Welsh Venture Capital Fund was launched in 1984-85, half of whose funds was raised in the City with the balance from local sources including the Church in Wales, local authorities and the WDA. However, difficulties were symbolised by the Cardiff Consortium project, launched in 1986 to market commercial funds. It received 844 enquiries, 144 of which became proposals but none were funded as their quality was “too low.”⁸⁰

Finally, between 1983 and 1987 the WDA supported some Welsh companies by underwriting their share issues and was similarly involved in underwriting UK wide privatisations. The agency committed £2.3 million in total and while the underwriting of companies including

Laura Ashley and the Trustee Savings Bank was profitable, gains were outweighed by losses. Notably, the agency lost money underwriting British Petroleum during 1987's "Black Monday" stock market crash. The WDA stopped underwriting in the same year, having lost £150,000 across all such activity.⁸¹

In 1986 the WDA, in the absence of official data, commissioned research that demonstrated its dominance of venture capital, the agency providing all such investments in Wales below £99,000 and a majority of larger investments. Overall, the agency claimed to have financed 90 per cent of venture capital investments in Wales by number and 65 per cent by value.⁸² Although the WDA was able to take risks and invest in volume, financial success was elusive. In 1981 the Welsh Office instructed the agency to achieve returns equivalent to the cost of government borrowing over a rolling five-year period, to ensure that the cost to the government of supplying funds was covered.⁸³ Agency investment managers briefed their board in 1982 that they intended to take "more risks" meaning that targets would be "elusive"; they were "putting the government on notice about this and asking for understanding when the time comes."⁸⁴ The WDA hoped that short-term losses would be offset by later surpluses but this did not happen.⁸⁵

While some investments were successful the portfolio performed poorly (see Table 1) and missed targets in all but one year between 1981-82 and 1986-87. Annual and cumulative returns were negative each year from 1983-84 to 1986-87, and its 1983-84 return was 22.4 percentage points below its target of 9 per cent.

[Table 1 here]

By mid-1984 the agency had to write to the Secretary of State to justify its investment activities and the WDA identified most of its portfolio in the following year as unsecured or low value, as its operating area was “one where other institutions would probably not enter.”⁸⁶ By 1986-87 the target was downgraded to breaking even but even this proved impossible to achieve. While commercial success continued to elude the WDA, there is some evidence of the existence of spillover effects despite the absence of specific data. In 1984, for example, the agency board was informed that poor financial performance was caused by the need to create employment “even at the cost of a bad investment.”⁸⁷

III. 1987-88 to 1989-90

The WDA’s focus on investment was temporarily revitalised in 1987 by the appointment of Peter Walker as Secretary of State, a firm supporter of government intervention.⁸⁸ Investment increased immediately from £5.2 million in 1987-88 to £8.4 million in the following year, and the annual number of investments made peaked at 310 in 1989-90 (see Graph 2). Activity was “intense” by mid-1988 and in the following year, average investment size was £40,000 in line with the agency’s new goal of 75 per cent of investments being under £100,000.⁸⁹ The WDA planned a second tranche of the Wales Venture Capital Fund and launched a financial services initiative to attract employers. The initiative addressed the perennial issue of what the agency described as “strong prejudice” in the City towards Wales, where the “most arrogant view [was] taken by merchant banks”, which saw relocations and investment in the principality as “a one way-ticket” to a “wilderness [of] slag heaps.”⁹⁰

However, greater activity was short-lived due to two circumstances. First, the Welsh Office was steering the agency towards a self-financing status, meaning that poorly performing

activities would be a future burden on its activities. The second was how poor financial performance was leading to waning political support. Problems were illustrated by later write-offs linked to £242,249 loaned to 47 small or start-up businesses in the late 1980s, £193,143 of which was unrecoverable.⁹¹ Details were available on 36 loan signatories, of whom 13 had moved abroad or disappeared while the remainder had insufficient assets to enable recovery. Failures forced the agency in 1988/89 to raise provision against investments at imminent risk of failure to 100 per cent, doubling such provisions from £3.032 million to £7.082 million.⁹²

Poor performance caused the agency in June 1988 to ask for a less onerous target of a compound rate of return of 2 to 3 per cent over 10 years, warning that without this, “consideration will need to be given to policy changes.”⁹³ Such policy changes became more likely in December 1988 when WDA executives met Peter Walker. A strong supporter of investment on his appointment as Secretary of State a year previously, he now queried the “agency’s minus 12 per cent return on investments [in 1985-86] and the zero percent target [from 1986-87],” before emphasising that “it should always be difficult to borrow money.”⁹⁴ Concerned officials within the WDA noted that the Welsh Office had “little sympathy” for “what they see as the provision of loans by the agency which are, or ought to be, available from the private sector.”⁹⁵ While loss-making investment activity was once justified by the argument that it raised levels of commercial activity and employment, economic recovery in the late 1980s and the absence of spillover data lessened this argument’s force, and equity support became reserved for very low-risk companies.⁹⁶

Welsh Office patience finally expired after the failure of one of the agency’s largest investments to date: Parrot. The company was an ambitious attempt to produce computer discs, but it mistakenly manufactured discs of a specification quickly made obsolete by advancing

miniaturisation. In 1988 the WDA planned to purchase additional shares as part of a rights issue to enable Parrot to develop more advanced discs. However, the Welsh Office unsurprisingly prevented this investment given the agency's admission that "Parrot has never met any of its forecasts, losses continue to be made and accumulated losses exceed £4 million."⁹⁷ The company entered receivership in 1989 and the agency lost much of its £1.5 million investment and £750,000 loan guarantee. The WDA was heavily criticised in the House of Commons over many occasions after 1987: its monitoring of the company was considered deficient; Neil Taylor, an agency employee instrumental in funding Parrot had subsequently worked for the company echoing events at Leiner; and, Frank E. Peters, recruited by the agency to lead Parrot, was charged with financial offences linked to misappropriation of public money although he was later acquitted.⁹⁸ In response, the agency tightened its procedures to prevent a recurrence of the overly close relationship with Parrot, and never again undertook an investment of the same scale and ambition.

The Parrot debacle presaged a final attempt by the Welsh Office to stem the WDA's losses. In 1989 it set new annual targets for the agency of a real rate of return of 6 per cent over 10 years for new equity investments, and a separate target for those made before 31 March 1989.⁹⁹ Although the WDA did achieve a small overall profit "for the first time ever" in 1989-90,¹⁰⁰ it failed again to meet its targets. Importantly, the WDA's flagship attempt to offset information asymmetry, the Welsh Venture Capital Fund, was closed in 1990 as it had "not done well commercially" with losses of £700,000 linked to investments of £5.6 million.¹⁰¹

By 1990 the WDA accepted that it was "difficult, if not impossible" to invest in start-up or early stage businesses and "make a positive return."¹⁰² Its broader remit was moving away from

investment and factory construction towards assisting business through advisory services, and the agency accepted that its previous status as a “lender of last resort” would no longer apply.¹⁰³

IV. 1990-91 to 1994-95

The agency’s commitment to investment reduced steadily throughout the early 1990s as the Welsh Office, under Secretary of State David Hunt, questioned the rationale for such activity. Expenditure fell from £7.7 million on 200 projects in 1990-91 to £3.3 million on 102 projects in 1992-93 (see Graphs 1 and 2). While the WDA still sought to attract venture capital funds and supported a new Welsh Enterprise Fund, it was only prepared to invest the relatively small sum of £500,000 in total.¹⁰⁴ The Welsh Office enforced a £100,000 limit per single business on equity and tightened monitoring to avoid the losses of the 1980s.¹⁰⁵ Organisational downgrading began in 1990 when investment lost its departmental status and was subsumed into a Business Services division.¹⁰⁶ By 1992 the “whole rationale” of the function was under review,¹⁰⁷ and investment was no longer a mainstream activity. While the Welsh Office had long been sceptical, the difficulty of building a large-scale portfolio had discredited investment within the agency itself. Disillusionment was symbolised by Brian Morgan, its Chief Economist from 1991, who stated later that the WDA was once keen to “invest more in winners [...] putting a lot of money in new areas” but companies receiving investment were often “completely hopeless and couldn’t make it in the market. And the agency lost lots of money.”¹⁰⁸

Pressure intensified in 1993 following John Redwood’s appointment as Secretary of State for Wales. He opposed intervention,¹⁰⁹ remarking that “development agencies have been necessary bandages [...] but the healing comes from within from the talents, energies and ideas of people and the businesses they set up or attract.”¹¹⁰ He drew support from unemployment in Wales

dropping below UK averages in 1993 for the first time since records were available. This success was due in part to the efforts of the WDA's activities within property, finance and marketing which attracted large volumes of manufacturing inward investment to Wales, a leading UK region for such investment in the late 1980s and early 1990s.¹¹¹

Political pressure translated into three administrative actions. First, the Welsh Office instructed the WDA to concentrate on assisting companies to obtain finance from other sources.¹¹² Second, the agency's delegated ability to make equity investments of less than £100,000 was removed,¹¹³ and board member Garel Rhys noted that "taking equity in companies, it just wasn't on the agenda by the mid-1990s."¹¹⁴ Finally, and despite twenty years of activity, in 1994 the Welsh Office began to question the legality, under the 1975 Welsh Development Agency Act, of the use of government grant-in-aid for investment purposes and instructed the agency to pause all new investments.¹¹⁵ While the WDA was eventually allowed to retain two schemes, a Technology Growth Fund and a Wales Development Loan, individual loans were not to exceed £150,000 and total expenditure was capped at low levels,¹¹⁶ meaning that the agency largely withdrew from investment and ran down its portfolio.

Ironically, the agency's financial performance finally showed some improvement in the first half of the 1990s. From 1990-91 to 1994-95 performance was largely in line with, or better than, targets (see Table 2) albeit achieved on a rapidly falling turnover of low risk projects and attributable to occasional successes such as selling two stakes in 1992 for a profit of £705,000.¹¹⁷ However, performance disappointed as the portfolio was further run down with, for example, losses of £808,397 written off in 1997.¹¹⁸ Monetary cash receipts for 1995-96 and 1996-97 proved to be less than half of the annual targets set, before such monitoring was discontinued in 1997.¹¹⁹

[Table 2 here]

While the WDA had long neglected to gather spillover data, it finally commissioned an evaluation in 1993. The study focused on investments made between 1987-88 and 1990-91 and the researchers interviewed representatives of 85 companies (some 8.5 per cent of investments). They identified 37 per cent of projects as “fully additional,” as they would not have proceeded without agency support, while 44 per cent were classified as “partially additional” since they would either have gone ahead but on a smaller scale or been delayed. It was estimated that the 85 companies had created employment of 6,367 “net additional job years” and value added of £123.3 million. Sampled firms also agreed that agency support had contributed to new technology (36 per cent), increased exports (28 per cent), enhanced skills (28 per cent) and better management (27 per cent).¹²⁰ These results demonstrated the effectiveness of at least some of the agency’s investments in creating spillover impacts, although they covered but a fragment of such activity and could do little at this late stage to offset the long-gestating disillusionment as to financial performance.

Conclusion

The market failure hypothesis argues that deficiencies in the provision of regional capital can be explained by the existence of high transaction costs and information asymmetry. The WDA sought to offset both by delivering investment and, from the 1980s, attracting venture capital. However, it struggled to achieve positive returns and meet Welsh Office targets. While the targets set for the agency in the late 1970s were harsher than for the NEB, which could exclude two of its largest and poorest performing investments, targets thereafter were more lenient. They were linked to the cost of government borrowing, falling to zero per cent in 1986-87

before low, long-term, targets were set. Despite the relative leniency of these targets, the agency failed to perform at or near them apart from during the 1990s when activity was winding down and investments were few in number and low-risk.

Crucially, the agency spared no effort to improve returns and constantly changed its approaches across debt and equity. It targeted: start-ups, growth and large companies in the late 1970s; high-risk start-ups and smaller companies in the 1980s; high-risk companies in the late 1980s; and low-risk established companies in the early 1990s. The agency's efforts to attract greater levels of private sector venture capital through joint ventures also met with little success, as funds were unable to build profitable portfolios. Although some investments were successful, these were overwhelmed by failures. Overall, if a substantial "unsatisfied fringe" of viable investment projects existed that had been overlooked by commercial providers such as the Commercial Bank of Wales or the clearing banks, the scope and scale of WDA activity was such that it seems highly likely they would have been identified to form an eventually profitable portfolio for the agency.

However, the WDA saw its role as far more than building a profitable portfolio, given its broader mission of boosting employment and prosperity. Wales suffered economic upheaval in the 1970s and 1980s as manufacturing declined and the coal and steel industries shed tens of thousands of jobs. Public discourse on economic issues was notably negative and demoralised. In 1990 the WDA discussed how it had combated the "total collapse of business and personal morale in the face of the rundown of the coal and steel industries" through activities such as investment to persuade people that "there was hope and it was worth making an effort to try to pull Wales together."¹²¹ Similar justifications were also made of attempts to create venture capital funds. The agency's Chief Executive, David Waterstone, claimed in 1990

that although the Wales Venture Capital initiative “failed commercially,” it “succeeded in bringing home to our supporters that venture funding activities are a vital element in the regeneration of the economy.”¹²²

The central problem was that the agency’s objectives of assembling a profitable portfolio and raising commercial activity were incompatible. Moretti notes the importance of a supportive ecosystem of specialised local expertise in locations where venture capital funds are successful.¹²³ However, Wales had low levels of entrepreneurship and lacked an ecosystem to facilitate demand for capital;¹²⁴ it was a difficult environment for venture capital. Lerner notes that failure in such circumstances is common; “serving the main course before setting the table [is] unlikely to lead to a successful dinner party.”¹²⁵ While the agency attempted to create an ecosystem through providing business advisory services and supporting access to technology, the scale of the challenges faced by a deindustrialising economy meant that, according to board member Garel Rhys, it “never found the silver bullet [...] to engage the SMEs [small- and medium-sized enterprises] in what was happening or to really increase the numbers.”¹²⁶ Crucially, the Welsh Office had no responsibility over broader policies such as taxation, regulation, monetary or trade. This lack of power meant that investment could not form part of Mazzucato’s all-encompassing “entrepreneurial state” or the “developmental state” described by Wade as having created “Tiger” economies in East Asia.¹²⁷

Within the WDA, it was recognised that a narrow focus on commercial rates of returns was inappropriate in the context of Wales in the final quarter of the twentieth century, but it failed to persuade its political masters of this. More specifically, the WDA attempted, without success, to persuade the Welsh Office that if investment activities focused on raising levels of employment and commercial activity, this would carry disproportionate overheads that should

be excluded from agency balance sheets.¹²⁸ It also claimed that equity was a form of repayable grant and thus a cost effective way of providing grant support even when losses were incurred.¹²⁹ However, the agency mistakenly neglected to collect evidence as to the additional impacts of its activity over time with which to persuade the Welsh Office as to the merits of venture capital and Brian Morgan, WDA Chief Economist in the 1990s, remarked that monitoring and evaluation was “haphazard.”¹³⁰ This lack of evaluation was far from unique, as econometric techniques were barely used by economic development organisations in the UK until the mid-1990s.¹³¹ Despite this reluctance, the belated 1993 econometric evaluation of the agency’s venture capital activities identified a high level of additional outputs between 1987-88 and 1990-91,¹³² and it is likely that comparable outputs were generated in previous years. While spillover impacts are often estimated within contemporary projects including those funded by the European Union to assess performance,¹³³ the data-sets necessary to estimate such impacts of the WDA’s activities do not exist and cannot be reassembled retrospectively.¹³⁴

In the absence of comprehensive spillover data, the Welsh Office focused on the market failure justification and refused to accept a loss-making portfolio, despite the difficulty of profitably operating venture capital schemes within a poorly performing, peripheral economy. Once the economy began to recover from the turbulence of the late 1970s to the mid-1980s, the unquantified spillover rationale lost force and the agency was unable to continue to justify its engagement with unprofitable activities regardless of occasional successes.

The article’s overall finding is that market failure, in terms of the availability of investment funds for viable (commercially profitable) business opportunities, was not widespread and did not by itself justify intervention. However, the WDA created much-needed spillover benefits in a deindustrialising economy that lacked many of the attributes necessary for self-sustaining

regeneration. While spillover benefits can justify public venture capital in underperforming regional economies, this article's findings on market failure stress the need for a realistic assessment of the financial risks compared to the social benefits linked to such investments. A methodology which simply highlights opportunities presented by market failure does not necessarily distinguish those investments which could yield a positive social rate of return from those that will not. Hence, only a robust approach to gathering, evaluating and publicising spillover data can properly justify the provision of public venture capital.

Despite much activity since, many of the problems identified in Wales in the late 1960s by the Welsh Council and Julian Hodge remain, and the extent to which lessons have been learnt from the WDA's difficulties in creating a profitable portfolio is debatable. Moreover, despite the Welsh Government's provision of public venture capital through Finance Wales being loss making,¹³⁵ such activities have now been subsumed into a much larger government-owned Development Bank for Wales. The mixed record of public venture capital in Wales implies that successful provision requires an ecosystem supportive of entrepreneurship across knowledge, technical skills and financial support to facilitate demand for capital,¹³⁶ but developing such an ecosystem is often beyond the institutional capability of regional government bodies.

Bibliography of Works Cited

Books

Carnevali, Frances. *Europe's Advantage: Banks and Small Firms in Britain, France, Germany, and Italy Since 1918*. Oxford: Oxford University Press, 2005.

- Cole, David (ed.). *The New Wales*. Cardiff: University of Wales Press, 1990.
- Collins, Michael and Mae Baker. *Commercial Banks and Industrial Finance in England and Wales, 1860–1913*. Oxford: Oxford University Press, 2003.
- Coopey, Richard and Donald Clarke. *3i: Fifty Years Investing in Industry*, Oxford: Oxford University Press, 1995.
- Deacon, Russell. *The Governance of Wales-the Welsh Office and the Policy Process 1964–99*. Cardiff: Welsh Academic Press, 2002.
- Gooberman, Leon. *From Depression to Devolution, Economy and Government in Wales, 1934 to 2006*. Cardiff: University of Wales Press, 2017.
- Griffiths, Dylan. *Thatcherism and Territorial Politics*. Aldershot: Avebury, 1996.
- Humphrys, Graham. *Industrial Britain, South Wales*. Newton Abbot: David and Charles, 1972.
- Johnes, Martin. *Wales since 1939*. Manchester: Manchester University Press, 2012.
- Keynes, John Maynard. *The Collected Writings of John Maynard Keynes, A Treatise on Money, 1 The Pure Theory of Money*. London: Macmillan, 1971.
- Lerner, Josh. *Boulevard of Broken Dreams, Why Public Efforts to Boost Entrepreneurship and Venture Capital have failed – and what to do about it*. Princeton: Princeton University Press, 2009.
- McCrone, Gavin. *Regional Policy in Britain*. London: George Allen, 1971.
- Moretti, Enrico. *The New Geography of Jobs*. New York: Houghton Mifflin Harcourt, 2012.
- Morgan, Kevin and Andrew Sayer. *Microcircuits of Capital*. Cambridge, Polity Press, 1988.
- Morris, John (Lord Morris of Aberavon). *Fifty Years in Politics and the Law*. Cardiff: University of Wales Press, 2011.
- Nicholas, Edwards. *Westminster, Wales and Water*. Cardiff: University of Wales Press, 1999.

- O'Sullivan, Timothy. *Julian Hodge – A Biography*. London, Routledge & Kegan Paul Books, 1981.
- Parsons, Wayne. *The Political Economy of British Regional Policy*. London: Routledge, 1988.
- Redwood, John. *Views from Wales*. London: Conservative Political Centre, 1994.
- Wade, Robert. *Governing the Market. Economic Theory and the Role of Government in East Asian Industrialisation*. Princeton: Princeton University Press, 2004.
- Walker, Peter. *Staying Power—An Autobiography*. London: Bloomsbury, 1991.
- Wiener, Martin, *English Culture and the Decline of the Industrial Spirit 1850–1980*. Cambridge, Cambridge University Press, 1980.
- Williams, Hywel. *Guilty Men: Conservative Decline and Fall 1992–1997*. London: Aurum Press, 1998.
- Williams, L.J. *Digest of Welsh Historical Statistics, 1974-1996*. Cardiff: Welsh Office, 1998.
- Wren, Colin. *Industrial Subsidies*. Basingstoke: Macmillan, 1996.

Articles, dissertations, book chapters

- Baber, Colin and Jeffrey Dessant. “Modern Glamorgan: Economic Development after 1945.” In *Glamorgan County History, Volume 5*, edited by Arthur John and Glanmor Williams, 581-658. Cardiff: University of Wales Press, 1980.
- Berger, Allen, Nathan Miller, Mitchell Petersen, Raghuram Rajan and Jeremy Stein. “Does function follow organizational form? Evidence from the lending practices of large and small banks.” *Journal of Finance Economics*, 76, 2 (2005): 237-269.
- Carnevali, Frances and Peter Scott. “The Treasury as a Venture Capitalist: DATAC Industrial Finance and the Macmillan Gap, 1945-60.” *Financial History Review*, 6 (1999) 47-65.

- Carnevali, Frances. *British and Italian Banks and Small Firms: a study of the Midlands and Piedmont, 1945-1973*. Unpublished PhD thesis: London School of Economics, 1997.
- Coase, Ronald. H. "The Problem of Social Cost." *Journal of Law & Economics*, 3, (1960): 1–44.
- Cosh, Andy and David Hughes. "Size, Financial Structure and Stability: UK Companies in the 1980s." In *Finance and the Small Firm*, edited by Alan Hughes and David J. Storey, 18–63. London: Routledge, 1994.
- Evans, Neil. "Two Paths to Development: Wales and the Northeast of England" in Pat Hudson (ed.). *Regions and Industries: A Perspective on the Industrial Revolution in Britain*. Cambridge: Cambridge University Press, 1989, 201–227.
- Gooberman, Leon. "Welsh Office Exceptionalism, Economic Development and Devolution, 1979 to 1997." *Contemporary British History* 30:4 (2016), 563-583.
- Hood, Neil. "Public venture capital and economic development: The Scottish experience." *Venture Capital* 2:4 (2000), 313-341.
- Jones, Calvin. "Comparative Disadvantage? The Industrial Structure of Wales." In *Wales in the 21st Century*, edited by Jane Bryan and Calvin Jones, 11–24. Basingstoke: Macmillan, 2000.
- Mason, Colin and Richard Harrison. "Closing the Regional Equity Gap? A Critique of the Department of Trade and Industry's Regional Venture Capital Funds Initiative." *Regional Studies*, 37:8 (2003), 855-868.
- Mazzucato, Mariana and C. R. P. Caetano. "Beyond market failures: the market creating and shaping roles of state investment banks." *Journal of Economic Policy Reform*, 19, 4(2016), 305-326.
- McNabb, Robert and John Shorey. "The Labour Market." In *The Welsh Economy*, edited by Kenneth D. George and Lyn Mainwaring, 111–132. Cardiff: University of Wales Press, 1988.

Morgan, Kevin and Dylan Henderson. "The Fallible Servant: Evaluating the Welsh Development Agency." In *Nationality and Planning in Scotland and Wales*, edited by Huw Thomas and Roderick Macdonald, 77-98. Cardiff: University of Wales Press, 1997.77-98.

Morgan, Kevin. "The Regional Animator: Taking Stock of the Welsh Development Agency." *Regional & Federal Studies*, 7:2 (1997), 70-94.

Munari, Federico and Laura Toschi. "Assessing the impact of public venture capital programmes in the United Kingdom: Do regional characteristics matter?" *Journal of Business Venturing*, 30 (2014), 205-226.

Perchard, Andrew and Niall G. MacKenzie. "Too much on the highlands? Recasting the economic history of the highlands and islands." *Northern Scotland*, 4 (2013), 3-22.

Pugh, Rhiannon, Niall G. MacKenzie and Dylan Jones-Evans. "From 'Techniums' to 'emptiums': the failure of a flagship innovation policy in Wales." *Regional Studies*, 52:7 (2018), 1009-1020.

Robertson, Lewis. "The Scottish Development Agency." In *Scottish Government Yearbook for 1978*, 21-31
http://www.scottishgovernmentyearbooks.ed.ac.uk/record/22762/1/1978_2_Scottishdevelopmentagency.pdf (accessed 1 October 2018)).

Ross, Duncan. "The 'Macmillan Gap' and the British Credit Market." In *Finance in the Age of the Corporate Economy*, edited by Philip L. Cottrell, Alice Teichova and Takeshi Yuzawa, 209–226. Aldershot: Ashgate, 1997.

Stiglitz, Joseph and Andrew Weiss. "Credit Rationing in Markets with Imperfect Information." *American Economic Review* 3 (1981): 393–410.

Zacharakis, Andrew, Dean Shepherd and Dean Coombs. "The development of venture-capital-backed internet companies, An ecosystem perspective." *Journal of Business Venturing* 18 (2003): 217–231.

Official documents

Central Statistical Office. *Abstract of Regional Statistics No. 7*. (1971)

House of Commons. *Committee on Finance and Industry, Report*, Cmd. 3897 ('Macmillan Report,' 1931)

House of Commons. *Committee of Public Accounts, Appraisal of Investment Opportunities and Monitoring of Investment, Investment in P. Leiner and Sons Ltd*, HC 782, 1980.

House of Commons. *Committee on the Workings of the Monetary System*, Cmd. 827 ('Radcliffe Report,' 1958-59)

House of Commons. *Report of the Committee of Inquiry on Small Firms*, Cmd. 4811 ('Bolton Report,' 1971)

House of Commons. *The Financing of Small Firms, Interim Report of the Committee to Review the Functioning of Financial Institutions*, Cmd.7503 ('Wilson Report,' 1979)

National Audit Office. *Investment Activities of the Scottish Development Agency, Welsh Development Agency and the Highlands and Islands Development Board*, London: National Audit Office, 1985.

United Nations Conference on Trade and Development, *The Role of Development Banks in Promoting Growth and Sustainable Development in the South*. New York and Geneva:

United Nations, 2016.

WDA. *Annual Report*, Various Editions.

WDA. *Annual Accounts*, Various Editions.

WDA. *The First Five Years*, 1981.

Welsh Council, *The Availability of Capital for Small Firms in Wales*, Cardiff: 1969.

Welsh Office. *Welsh Economic Trends*, Various Editions.

Archives and newspapers

The National Archives, Kew (TNA): WDA Board Papers (WA 8), Welsh Office (BD/41)

The National Library of Wales (NLW), Crickhowell Papers.

The Western Mail

¹ Collins and Baker, *Commercial Banks and Industrial Finance*, 1-23, surveys these debates.

² Keynes, *Treatise on Money*, 190.

³ The Macmillan Report stated that 'it has been represented to us that great difficulty is experienced by the smaller and medium-sized businesses in raising [...] capital [...] even when the security offered is perfectly sound.' *Committee on Finance and Industry, Report*, para. 404, 173.

⁴ *Committee on the Workings of the Monetary System*, ('Radcliffe Report', 1958-59); *Report of the Committee of Inquiry on Small Firms*, ('Bolton Report', 1971); *The Financing of Small Firms* ('Wilson Report', 1979).

⁵ Carnevali, *British and Italian Banks and Small Firms*, 35.

⁶ Coase, 'The Problem of Social Cost', 15-16.

⁷ Cosh and Hughes, 'Size, Financial Structure and Stability: UK Companies in the 1980s', 30.

⁸ Stiglitz and Weiss 'Credit Rationing in Markets with Imperfect Information', 393–410.

⁹ Carnevali, *Europe's Advantage*, 127

¹⁰ Berger, Miller, Petersen, Rajan and Stein. 'Does function follow organizational form? Evidence from the lending practices of large and small banks', 239.

¹¹ Carnevali, *British and Italian Banks and Small Firms*, 59.

¹² Welfare economics argues that markets are the most efficient resource allocators when three conditions are met; first, a complete set of markets featuring publicly known prices for traded items; second, all traders and consumers are price-takers and; third, equilibrium.

Market failures exist when the first and/or second conditions are missing. Such failures lead to inefficient resource allocation, but this can be offset by state intervention. See Mazzucato and Caetano, ‘Beyond market failures’, 305-326.

¹³ Lerner, *Boulevard of Broken Dreams*, 7, 69.

¹⁴ Munari and Toschi, ‘Assessing the impact of public venture capital programmes in the United Kingdom: Do regional characteristics matter?’, 207.

¹⁵ Mazzucato, *The Entrepreneurial State*, 25, 27.

¹⁶ Hood ‘Public venture capital and economic development: The Scottish experience’, 313-341; Mason and Harrison, ‘Closing the Regional Equity Gap? A Critique of the Department of Trade and Industry's Regional Venture Capital Funds Initiative’, 855-868. For assessments of the WDA (focussing on business support and foreign direct investment), see: Morgan and Henderson, ‘The Fallible Servant: Evaluating the Welsh Development Agency’, 77–98; Morgan, ‘The Regional Animator: Taking Stock of the Welsh Development Agency’, 70-94.

¹⁷ Wren, *Industrial Subsidies*, xv.

¹⁸ United Nations Conference on Trade and Development (2016) *The Role of Development Banks*. United Nations: New York and Geneva, 7.

¹⁹ Companies in Wales secured some 2 per cent of the UK’s venture capital investments between 2006 and 2016, while Wales had 4.2 per cent of the UK’s workforce jobs in 2016. See: Western Mail, *Why Wales Needs a revolution in its approach to venture capital*, 20 January 2017.

²⁰ Welsh Government, Development Bank of Wales.

<https://businesswales.gov.wales/businessfinance/types-finance-and-how-apply/development-bank-wales> [accessed on 02 July 2018]

²¹ The National Audit Office also noted that the WDA did not ‘maintain sufficient performance statistics to enable a comparison to be made between actual investment

performance and projections made by the applicants at the time of appraisal.’ National Audit Office, *Investment Activities*, 6.

²² National Audit Office, *Investment Activities*, 9.

²³ TNA, WA 8/202, *WDA Board Papers, 20 July 1993*; TNA, WA 8/211, *WDA Board Papers, 1 June 1994*.

²⁴ Zacharakis, Shepherd and Coombs, *The development of venture-capital-backed internet companies*, 219-221, provide an overview of these ecosystems. See also Moretti, *The New Geography of Jobs*, 132-133.

²⁵ Evans, ‘Two Paths to Development: Wales and the Northeast of England’, 221.

²⁶ Goberman, *From Depression to Devolution*. 15-16. South Wales was one of a number of ‘Special Areas.’

²⁷ Ross, ‘The ‘Macmillan Gap’ and the British Credit Market’, 217; Wren, *Industrial Subsidies*, 24.

²⁸ South Wales in 1970 was described as the ‘closest to a nationalised region that existed in Britain, Humprys, *Industrial Britain*, 64. Also see Johnes, *Wales since 1945*, 66-73; Goberman, *From Depression to Devolution*, 51-83; Baber and Dessant, *Modern Glamorgan*, 636-640.

²⁹ McCrone, *Regional Policy in Britain*, 110-111.

³⁰ Carnevali and Scott, ‘The Treasury as a Venture Capitalist: DATAC Industrial Finance and the Macmillan Gap, 1945-60’, 55.

³¹ The National Archives (Hereafter TNA), BD 41/238, *DATAC Loans in Wales*, 10.

³² Central Statistical Office, *Abstract of Regional Statistics*, No. 7, 23.

³³ Coopey and Clarke, *3i: Fifty Years Investing in Industry*, 438.

³⁴ Welsh Council, *The Availability of Capital for Small Firms in Wales*, 4-8.

³⁵ O’Sullivan, 1982, 105, 108.

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- ³⁶ The Commercial Bank of Wales' operations were opaque but were detailed by *Rebecca*, a local current affairs magazine, most notably in its Spring 1977 edition.
- ³⁷ Deacon, *The Governance of Wales*. The Welsh Office's responsibilities grew over time, but excluded legislation, taxation and monetary policy.
- ³⁸ Morris, *Fifty Years in Politics and the Law*, 143.
- ³⁹ TNA, WA 8/1, *WDA Board Papers, 1 January 1976*.
- ⁴⁰ *Welsh Development Agency Act 1975. Section 1 (3)*. Available at: <https://www.legislation.gov.uk/ukpga/1975/70/section/1> [accessed on 10 April 2018]
- ⁴¹ Goberman, 'Welsh Office exceptionalism', 566-567.
- ⁴² Number of companies not available but is fewer due to an unquantifiable number of repeat investments.
- ⁴³ TNA, WA 8/1, *WDA Board Papers, 2 January 1976*.
- ⁴⁴ TNA, WA 8/1, *WDA Board Papers, 2 January 1976*.
- ⁴⁵ WDA, *The First Five Years*, 14.
- ⁴⁶ Welsh Office, *Welsh Economic Trends* 7, 59.
- ⁴⁷ See Robertson, *The Scottish Development Agency*.
- ⁴⁸ Morgan and Sayer. *Microcircuits of Capital*, 185.
- ⁴⁹ Lord Morris of Aberavon, *Fifty Years in Politics and the Law*, 143.
- ⁵⁰ WDA, *The First Five Years*, 14.
- ⁵¹ House of Commons, *Committee of Public Accounts, P. Leiner and Sons Ltd*, 8.
- ⁵² WDA, *Annual Report 1978-1979*, 19.
- ⁵³ TNA, WA 8/41, *WDA Board Papers, 21 May 1979*.
- ⁵⁴ TNA, WA 8/34, *WDA Board Papers, 16 October 1978*.
- ⁵⁵ TNA, WA 8/30, *WDA Board Papers, 19 June 1978*.
- ⁵⁶ TNA, WA 8/34, *WDA Board Papers, 18 September 1978*.

⁵⁷ WDA, *Annual Report 1978-79*, 17, 19.

⁵⁸ Author's interview with Lord Morris, Secretary of State for Wales (1974–1979), 21 March 2012.

⁵⁹ WDA–*The First Five Years*, 14.

⁶⁰ Author's interview with Lord Crickhowell (Nicholas Edwards), Secretary of State for Wales, 1979-1987, 14 December 2011. Edwards, *Westminster, Wales and Water*, 34.

⁶¹ WDA, *Annual Report 1980–81*, 39.

⁶² TNA, WA 8/50, *WDA Board Papers, 11 February 1980*.

⁶³ TNA, WA 8/40, *WDA Board Papers, 23 April 1979*.

⁶⁴ Author's interview with Garel Rhys, WDA Board Member (1994–1998), 5 November 2011.

⁶⁵ TNA, BD 40/232, *Welsh Office–Notes on Points of Interest for Permanent Secretary's Meeting with the WDA*, 10 June 1980. Civil servants attempted to use Leiner as a pretext to remove the agency's Chief Executive, Ian Gray, but were unsuccessful after the WDA's chair, Sir David Davies, threatened resignation. Goberman, *From Depression to Devolution*, 133.

⁶⁶ House of Commons, Committee of Public Accounts, *P. Leiner and Sons Ltd*, 2.

⁶⁷ Williams, *Digest of Welsh Historical Statistics, 1974-1996*, 138.

⁶⁸ McNabb and Shorey, 'The Labour Market', 122-123.

⁶⁹ Author's interview with David Waterstone, WDA Chief Executive (1983–1990), 6 January 2012.

⁷⁰ National Library of Wales, Crickhowell Papers 2/9. *Speech by Nicholas Edwards to Cardiff Business Club*. Edward's son was reading history at Cambridge and gave Wiener's declinist book, *English Culture and the Decline of the Industrial Spirit, 1850-1980* to his father, who stated; 'I'd been rather impressed by it [the book] and I thought it would make

some very good points. And it seemed to me the basis of a rather good speech.” Author’s interview with Lord Crickhowell, 14 December 2011.

⁷¹ TNA, WA 8/75, *WDA Board Papers*, 20 April 1982; TNA, WA 8/77, *WDA Board Papers*, 22 June 1982.

⁷² WDA, *Annual Report 1982-83*, 18.

⁷³ WDA, *Annual Report, 1982-83*, 20.

⁷⁴ WDA, *Annual Report 1983-84*, 15.

⁷⁵ TNA, WA 8/90, *WDA Board Papers*, 15 August 1983.

⁷⁶ WDA, *Annual Report 1983-84*, 13.

⁷⁷ TNA, WA 8/139, *WDA Board Papers*, 21 December 1987.

⁷⁸ TNA, WA 8/168, *WDA Board Papers*, 23 July 1990.

⁷⁹ WDA, *Annual Report 1984-85*, 12.

⁸⁰ TNA, WA 8/126, *WDA Board Papers*, 17 November 1986.

⁸¹ *Western Mail*, 12 January 1995

⁸² TNA, WA 8/119, *WDA Board Papers*, 17 March 1986.

⁸³ National Audit Office, *Investment Activities*, 10. This report also queried the efficacy of indicators used by the WDA, leading to later revisions.

⁸⁴ TNA, WA 8/75, *WDA Board Papers*, 20 April 1982.

⁸⁵ TNA, WA 8/96, *WDA Board Papers*, 20 February 1984.

⁸⁶ TNA, WA 8/120, *WDA Board Papers*, 21 April 1986.

⁸⁷ TNA, WA 8/104, *WDA Board Papers*, 19 November 1984.

⁸⁸ Walker, *Staying Power*, 202; Griffiths, *Thatcherism and Territorial Politics*, 78.

⁸⁹ TNA, WA 8/156, *WDA Board Papers*, 19 June 1989; TNA, WA 8/145.4, *WDA Board Papers*, 20 June 1988.

⁹⁰ TNA, WA 8/140, *WDA Board Papers*, 18 January 1988.

⁹¹ TNA, WA 8/189, *WDA Board Papers*, 27 May 1992. Data on successful applicants are not available.

⁹² TNA, WA 8/155, *WDA Board Papers*, 15 May 1989; WDA, *Annual Report 1988-89*, 12.

⁹³ TNA, WA 8/145.1, *WDA Board Papers*, 20 June 1988.

⁹⁴ TNA, WA 8/150, *WDA Board Papers*, 19 December 1988.

⁹⁵ TNA, WA 8/160, *WDA Board Papers*, 27 November 1989.

⁹⁶ In 1990 the WDA produced an edited volume, 'The New Wales' that discussed 'a general sense of revival' and 'an exciting future' Cole, *The New Wales*, 10; TNA, WA 8/166, *WDA Board Papers*, 30 May 1990.

⁹⁷ TNA, WA 8/145.2, *WDA Board Papers*, 20 June 1988.

⁹⁸ For example, House of Commons (debates), 2 March 1987, vol. 111, col. 647. The alleged misappropriation related to a £2 million loan from the European Coal and Steel Community being placed with a bank in the United States as a loan guarantee, in breach of the loan conditions and without the WDA's knowledge. TNA, WA 8/155, *WDA Board Papers*, 15 May 1989.

⁹⁹ WDA, *Annual Report 1990-91*, 50.

¹⁰⁰ TNA, WA 8/166, *WDA Board Papers*, 30 May 1990.

¹⁰¹ WDA, *Annual Report 1984-85*, 12; TNA, WA 8/166, *WDA Board Papers*, 30 May 1990.

¹⁰² TNA, WA 8/166, *WDA Board Papers*, 30 May 1990.

¹⁰³ WDA, *Annual Report 1989-90*, 12.

¹⁰⁴ TNA, WA 8/179, *WDA Board Papers*, 24 June 1991.

¹⁰⁵ TNA, WA 8/162, *WDA Board Papers*, 22 January 1990.

¹⁰⁶ TNA, WA 8/162, *WDA Board Papers*, 22 January 1990.

¹⁰⁷ TNA, WA 8/196, *WDA Board Papers*, 26 January 1993.

¹⁰⁸ Author's interview with Brian Morgan, WDA Chief Economist (1991–1997), December 2011.

¹⁰⁹ Williams, *Guilty Men: Conservative Decline and Fall*, 52.

¹¹⁰ Redwood, *Views from Wales*, 21.

¹¹¹ Goberman, *From Depression to Devolution*. 168

¹¹² TNA, WA 8/209, *WDA Board Papers*, 22 March 1994.

¹¹³ TNA, WA 8/220, *WDA Board Papers*, 29 March 1995.

¹¹⁴ Author's interview with Garel Rhys, 5 November 2011.

¹¹⁵ WDA, *Annual Accounts 1994-95*, 25.

¹¹⁶ TNA, WA 8/227, *WDA Board Papers*, 20 November 1995.

¹¹⁷ TNA, WA 8/193, *WDA Board Papers*, 26 October 1992.

¹¹⁸ TNA, WA 8/244, *WDA Board Papers*, 18 April 1997.

¹¹⁹ WDA, *Annual Report 1997-98*, 24.

¹²⁰ TNA, WA 8/202, *WDA Board Papers*, 20 July 1993; TNA, WA 8/211, *WDA Board Papers*, 1 June 1994. Net additional job years: a measure of job losses which considers the actual or expected duration of jobs. Net of displacement effects but include indirect effects.

¹²¹ TNA, WA 8/168, *WDA Board Papers*, 23 July 1990.

¹²² TNA, WA 8/166, *WDA Board Papers*, 30 May 1990.

¹²³ Moretti, *The New Geography of Jobs*, 132-133. Lerner, *Boulevard of Broken Dreams*, 16

¹²⁴ Explanations focus on the legacy of Wales' historic industrial structure of large units that featured limited levels of local management control or ownership, within an overly concentrated industrial structure. See: Jones, *the Industrial Structure of Wales*, 17-18.

¹²⁵ Lerner, *Boulevard of Broken Dreams*, 109.

¹²⁶ Author's interview with Garel Rhys, 5 November 2011.

¹²⁷ Mazzucato, *The Entrepreneurial State*; Wade, *Governing the Market*.

¹²⁸ See Mazzucato's arguments that it is unfair to directly compare public venture capital returns with their private sector equivalents. Mazzucato, *The Entrepreneurial State*, 25.

¹²⁹ TNA, WA 8/104, *WDA Board Papers*, 19 November 1984.

¹³⁰ Author's interview with Brian Morgan, 1 December 2011.

¹³¹ For example, the Highlands and Islands Development Board in Scotland lacked a paper trail for grants. The lack of data led the Board to rely on general demographic data when assessing its performance. Perchard and Mackenzie, 14, 17.

¹³² TNA, WA 8/202, *WDA Board Papers*, 20 July 1993; TNA, WA 8/211, *WDA Board Papers*, 1 June 1994.

¹³³ Pugh, MacKenzie and Jones-Evans, 1015.

¹³⁴ A rough assessment of direct spillovers accruing from venture capital would require data on the number of companies supported and their: numbers employed and their salaries; taxes and rates paid, and; rent and other expenditure such as that on goods and services. A fuller estimate would include adjustment for additionality and displacement, before the application of multipliers derived from econometric models based on contemporary data to identify indirect and induced spillover impacts.

¹³⁵ Western Mail, *Development Bank for Wales to Plug Small Business Funding Gap is Recommended*, 10 March 2015.

¹³⁶ Data are available on the investment performance of the Scottish Development Agency (SDA), operating in an area whose ecosystem supporting entrepreneurship was more advanced than in Wales. While methodological differences preclude direct comparisons with the WDA, the SDA recorded annualized internal rates of return of 9.8 per cent between 1982 and 1991, and 22.6 per cent between 1991 and 1999. Hood, *Public Venture Capital and Economic Development*, 331.