

Munday, Max; Pickernell, David; Roberts, Annette

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The Effectiveness of Regional Grant Aid: A Welsh Perspective

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The Effectiveness of Regional Grant Aid: A Welsh Perspective

Max Munday*, David Pickernell[#] and Annette Roberts*

* Welsh Economy Research Unit, Cardiff Business School, 45 Park Place, Cardiff, UK,
E-mail **Error! Bookmark not defined., Error! Bookmark not defined.**

[#] Welsh Enterprise Institute, The Business School, University of Glamorgan, Pontypridd, UK.
E-mail **Error! Bookmark not defined..**

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Abstract

This paper examines the direction of Regional Selective Assistance (in terms of location, sector, and ownership) in Wales and reviews different measures of grant aid effectiveness, from "costs per job" measures to alternatives encompassing a wider range of costs and benefits. The paper then considers possible options to extend the analysis to incorporate the potential developmental benefits of regional aid, by including GDP measures in a broader evaluation framework.

The Effectiveness of Regional Grant Aid : A Welsh Perspective

1. Introduction

The post war Welsh economy has moved away from a dependence on mining and heavy industry to a more diverse industry mix, where 'lighter' manufacturing and service sectors support an increasing share of employment. During this period, which also saw the establishment of the Welsh Development Agency and a wide range of regional policy initiatives, the overall position of Wales in the UK economic prosperity league has changed little. The economic problems of Wales have been documented elsewhere (for example, Brand et al., 1997, Brooksbank and Pickernell, 1999), as have the well publicised successes of Wales. For example, Wales has attracted a disproportionately high share of inward investment, and Welsh manufacturing productivity levels have been on a par with some of the leading regions in Europe (Hill and Keegan, 1993; Hill and Munday 1994; Jones 1996). However, others have argued that the restructuring of the 1980s and 1990s, encouraged by development agencies, has neither been 'exceptional', nor had a particularly beneficial impact on the economy (Lovering, 1999). A lively debate on the trajectory of the Welsh economy provides an interesting context for an investigation of regional policy impacts.

Wales continues to receive a relatively large share of the UK regional policy budget, for example, in the period 1990-1997, Wales received an estimated £890m of government expenditure on regional preferential assistance to industry¹, which was around one third of the UK total (ONS, 1998). In terms of Regional Selective Assistance (RSA) specifically, Wales has regularly received around 20-25% of the UK budget (Industrial Development Act 1982, various years) despite only having around 5% of the total UK population.

A review and analysis of past and potential flows of grant aid in Wales is certainly required, particularly in the context of the real reduction in regional policy resources in Wales, and the new 'devolved' political environment. According to Raines (1998),

¹ Includes Regional Development Grants, Regional Selective Assistance, Regional Enterprise Grants and expenditure on land and factories by the WDA and DBRW.

devolution could give the National Assembly greater discretion over the resources available and the criteria by which incentives are offered to companies, such as costs per job limits (within EU limits). This potential flexibility could be of particular importance given the relatively large amounts of money spent on regional development across a wide range of schemes. Moreover an effective evaluation framework needs to be established which allows differences in the quality, longevity and wealth creating ability of different regional policy schemes to be taken into account.

The next section of this paper provides a brief overview of regional policy in Wales. The third section describes the flows of RSA in Wales by industry sector, nationality of recipient organisation, and by area. The fourth section reviews studies of the effectiveness of grant aid using conventional methodologies. The fifth section explores alternative methods of grant effectiveness that have been developed incorporating the principles of cost-benefit analysis. The final section explores some additional ways in which RSA in particular might be evaluated in a Welsh context.

2. Overview of Regional Policy in Wales

Regional policy aims to reduce economic and social disparities between regions. These disparities are usually defined in terms of unemployment rate and income per capita, and are aggravated by structural changes which can have social as well as economic consequences (Armstrong and Taylor, 1993). In such cases regional policy can help prevent large scale labour migration from peripheral to core areas. The UK was amongst the first European countries to adopt an official regional policy with the 1934 Special Areas Act (Alden and Boland, 1996), and 60 years on, there is still a UK regional policy aiming to address issues of uneven regional incomes and growth. The UK's policy traditionally involved "taking work to the workers" to obviate the need for the "workers to move to the work". This is seen not only with regard to the long-standing Regional Development Agencies (RDAs) in Scotland, Wales and Northern Ireland, but also in the more recent establishment of RDAs in the English regions.

Contemporary regional policy in Wales has been targeted at specifically designated areas, (ie the Assisted Areas), through discretionary policies such as regional selective assistance (RSA), and through Regional Development Grants (RDG). EU policies also

aim to reduce/remove disparities between regions/countries. For example, the EU project 2000+ aims to minimise risks arising from strengthening the core of the EU to the detriment of the periphery, a real fear in the wake of the general integration process (Alden and Boland, 1996). EU structural funds provide "grant aid for projects which facilitate economic regeneration and revival in areas where the decline of traditional industries has caused serious economic and social problems". The 'European' types of assistance available in Wales, and eligible areas are detailed below.

EU Structural Funds in Wales

- European Regional Development Fund (ERDF) which aims to reduce regional imbalances and assist disadvantaged regions;
- European Social Fund (ESF) which aims to improve employment opportunities in the EU through training;
- European Agricultural Guidance and Guarantee Fund (EAGGF) which assists in part financing national agricultural aid schemes and in developing and diversifying the Community's rural areas;
- Financial Instrument for Fisheries Guidance (FIFG) which assists in restructuring the fisheries sector.

As with UK policy the majority of these funds are focused on specific areas within the EU which fall under the following objective status :-

- Objective 1 status is given to those regions which have per capita of GDP of less than 75% of the EU average, where aid is to promote such regions' development and structural adjustment;
- Objective 2 status is accorded to those areas facing industrial decline, rural areas, urban areas and areas facing a decline in the fishing industry, with the population coverage for each member state decided by a range of cross-EU benchmarks rather than solely unemployment.
- Objective 3 status is given to assist education, training and employment through the European Social Fund.

Wales only had funding allocated under Objective 2 and 5B until 1999. Areas in Industrial South Wales and West Wales now qualify for Objective 1 funding for the period 200-2006. Between 1997 and 1999, the average annual allocation under Objective 2 and 5b was £48m and £23m respectively (1994 prices).

Table 1 provides an outline of spending on development, industry and training programmes in Wales.

Table 1: Expenditure Plans for Main Economic Development, Industry and Training Programmes 1998-99

Scheme	Planned Expenditure (£m)
WDA	113.8
DBRW	9.0
Wales Tourist Board	11.3
Cardiff Bay Development Corporation	44.9
ERDF	11.8
Strategic Development Scheme (delegated to LA's)	27
RSA	61.2
Regional Enterprise Grants	1.4
Innovation Support Schemes	2.2
Teaching Company Scheme	0.5
Training for Young People	61.4
Adult Training	15.6
Business Growth & Start Up and Local Initiatives	25.2
Training Enterprise & Enterprise Support	4.5

Source : Welsh Office (1998)

Administrative organisations which undertake regional development projects such as the Welsh Development Agency (WDA), Development Board for Rural Wales (DBRW – now incorporated into the WDA), Welsh Tourist Board and Cardiff Bay Development Corporation will have received an estimated £180 million in 1998-9. The more specific schemes are categorised into grant aid programmes, education and training and small business enterprise programmes. However, Table 1 shows the financial disparities between schemes. For example, whilst RSA was allocated over £60 million, regional enterprise grants and innovation support schemes received less than £4 million between them.

Other policies and funding options also exist at a sub-regional level, usually administered and wholly or partly funded by local authorities and enterprise agencies, although public and private intermediaries also administer types of regional assistance (eg the Business Connect Directory, 1998). These agencies' aims are to improve the performance of the sub-regional economy relative to Wales as a whole. Bristow and Munday (1997) argue that the Business Connect scheme may have allowed the services of other enterprise agencies to be more effectively targeted in meeting different needs of local Welsh areas. However, they also argue that effective monitoring of organisations and impacts was still needed, as existing performance data

on those in receipt of Welsh Office and EU funds was often limited to regional/local development agency estimates of jobs created/clients assisted and courses run. In summary, there are several levels of regional policy and a variety of sources of assistance and administration available, but with evaluation systems fairly limited.

Given the patchwork of areas designated for different levels of assistance which accompany regional policy, it is unsurprising that this has created various kinds of assistance packages, with different objectives accompanying the central aim of improving the employment/income position of the designated locality. For example, Begg and McDowell (1987) demonstrate that between 1972 and 1987 (and certainly since) there have been major expenditures on a variety of regional policy packages which have varied in their composition and in the intensity of their application. Although the primary aim of regional policy initiatives has been linked to employment and (to a much lesser extent until recently) income, they also point to allied objectives, such as land reclamation, urban regeneration, infrastructure improvement, factory creation, and encouraging clustering in growth industries. The literature also suggests a potential conflict in regional policy aims between regional and national gain, which make practical evaluation more difficult. Whilst recognising the national effects of regional policies, and the methodological difficulties of a regional approach (see later) this paper will explore the potential for evaluating the costs and benefits in a Welsh context, rather than for the UK or EU as a whole.

3. The Flows of RSA Grant Aid in Wales

The Welsh Office's Industry and Training department is responsible for the application and administration of RSA funds. RSA provides discretionary grants to businesses for investment projects that either create or safeguard employment in the designated Assisted Areas. Higher levels of assistance are available in the so called "Development Areas" than in "Intermediate Areas" to reflect their more severe economic and employment problems. RSA payments are typically made over three to five years, depending on progress towards job and capital expenditure targets agreed when the grant offer was made. Most recently, the Welsh Office (1998) set a 1998-99 provision at £61.3 million. The following tables provide summary information for the recent history of RSA spending in Wales.

Table 2 : Regional Selective Assistance in Wales : Annual figures 1983-1998

Year	Value of Accepted Offers (£m)	Forecast New Employment	Forecast Safeguarded Employment	Total Forecast Employment	Gross Cost Per Gross job	
					in Nominal £000	Real terms (1990=100)
97-98	114.4	12001	2596	14597	7.8	6.2
96-97	106.9	11063	5811	16874	6.3	5.1
95-96	58.7	6694	3469	10163	5.8	4.8
94-95	38.2	4372	2228	6600	5.8	5.0
93-94	95.2	8354	4894	13248	7.2	6.3
92-93	72.8	7786	4722	12508	5.8	5.2
91-92	77.0	8316	4931	13247	5.8	5.5
90-91	79.4	9560	2572	12132	6.5	6.5
89-90	61.7	8168	3493	11661	5.3	5.6
88-89	81.0	11832	3013	14845	5.5	6.2
87-88	36.9	7552	3300	10852	3.4	4.1
86-87	36.5	5546	4139	9685	3.8	5.0
85-86	47.9	6697	5986	12683	3.8	4.9
84-85	38.3	10538	3632	14170	2.7	3.7
83-84	51.9	11846	8587	20433	2.5	3.7
88-98	785.4	88146	37729	125875	6.2	5.7

Source : Development Act 1982 Annual Reports: Various Years

Table 2 shows that almost £800m (current prices) of RSA has been offered and accepted (although not necessarily always taken up) over the last decade, with forecast employment created or safeguarded of almost 126,000. The gross cost per gross job figure, (adjusted for price effects), varies from year to year, ranging from £4,100 to £6,300 over the last 10 years. Note that these figures are not adjusted for job life, additionality etc and are derived simply by dividing the value of offers by total forecast employment. Care should also be taken these figures because of the impact of particularly large RSA offers, such as to LG (see later). These accepted offers have not been evenly spread across Wales, because of the designation of the Assisted Areas. Moreover, there has also been an uneven distribution of offers within these areas.

Table 3 Regional Selective Assistance by Location : 1988-1998, Total Offers Accepted (and first payment made)¹

Location ²	Offers		Amount of RSA Offered		Average amount of RSA per Offer		1996 GDP Per Head (Wales =100)
	N	(%)	Nominal £m	(%)	Nominal £000	(RSA/hd, nominal £)	
Gwent/S.Glam	288	33.5	217.9	35.6	756.5	251	119
Mid-West Glam	363	42.2	285.8	46.8	787.4	312	86
Dyfed/Powys	30	3.5	9.3	1.5	310.0	20	89
Clwyd	142	16.5	86.5	14.2	609.2	207	113
Gwynedd	37	4.3	11.7	1.9	316.0	49	86
Total	860	100	611.2	100	710.7	210	100

Notes

1. Table 2 shows all accepted offers in years shown, whereas Tables 3-5 exclude payments under the reporting threshold (£75,000 in the latest quarterly datasets) and offers where a first payment was not subsequently paid. Tables 3-5 vary in the total number of firms reported and total value of accepted offers because of a small number of unknown area, nationality or industry cases.

2. Areas are approximately based on old county boundaries. These may not exactly correspond to the Travel To Work Areas (TTWAs) used in the data set.

Source : Derived from Employment Gazette and Labour Market Trends Various Editions

Table 3 indicates that South Glamorgan, Gwent and Clwyd (North-East Wales) sub-regions have received nearly 50% of the total RSA, though the Korean firm LG's RSA offer (by far the largest single RSA offer) accounts for almost £70 million of the Gwent/South Glamorgan total. These are also the areas where historically GDP per capita has been relatively high in a Welsh context. East Clwyd also received a relatively large proportion of RSA. Following the closure of the Shotton Steel Works in the early 1980s, with the loss of 8,000 jobs, government and regional development agencies marketed the area hard to attract new inward investment, with some success, particularly in the Deeside and Wrexham areas. Mid and West Glamorgan, with relatively low GDP per head figures (an area which includes the industrial south Wales valleys), received nearly 47% of the RSA spend, with the rest of Wales receiving relatively little RSA spending. This picture is to some extent emphasised by the figures for RSA spend per head of population, where, for Mid and West Glamorgan, the spend is over £300 per capita. However, the Gwent and South Glamorgan area received around £250 per capita, compared to around £210 for Clwyd and just £20 for the rural Powys and Dyfed. Essentially RSA spending has been concentrated in areas adjacent to the A55, and M4 corridors. This may be because inward investments have clustered around new infrastructure developments. Equally, the infrastructure improvements

could partly be a result of the demands of new investors who have been tempted to these areas by grant aid. Overall, the sub-regional analysis shows that whilst there has been a concentration of resources in the disadvantaged areas of Industrial South Wales, a large proportion of the RSA resources have also been received by relatively prosperous areas of Wales, particularly South Glamorgan and Gwent. Again, the possible two-way causality make conclusions from this analysis difficult.

Table 4 : Regional Selective Assistance by Sector 1988-1998, Total Offers accepted (and first payment made)

	Sector	Offers		Amount of RSA Offered		Average amount of RSA per Offer	Disp Income/FTE	GDP/FTE	GDP Multiplier	Emp Multiplier
		N	(%)	nominal £m	(%)	Nominal £000	Wales =100	Wales=100		
1	Agriculture, Forestry and Fishing	3	0.4	0.2	0.0	65	57	54	1.61	1.38
2	Extraction	5	0.6	0.6	0.1	127	104	172	1.45	1.78
3	Food, Drink and Tobacco	73	8.5	31.6	5.0	433	82	170	1.48	1.98
4	Textiles and Clothing	31	3.6	11.0	1.8	355	73	83	1.33	1.29
5	Wood, Paper, Pulp, Publishing and Printing	96	11.2	47.6	7.6	495	99	110	1.55	1.63
6	Oil and Chemicals	66	7.7	35.4	5.6	537	137	266	1.50	2.32
7	Rubber and Plastic	106	12.4	53.8	8.6	508	96	97	1.43	1.44
8	Other Non Metals	17	2.0	14.2	2.3	834	102	126	1.50	1.64
9	Manufacture of Basic Metals	15	1.8	9.0	1.4	600	130	149	1.86	2.31
10	Metals, Mechanical Engineering & other Machinery	124	14.5	65.7	10.5	530	83	93	1.43	1.41
11	Electronic Engineering	130	15.2	192.2	30.6	1478	95	113	1.52	1.61
12	Automotive Components and Transport Equipment	60	7.0	109.5	17.4	1825	107	128	1.49	1.66
13	Other Manufacturing	23	2.7	17.0	2.7	738	92	78	1.60	1.50
14	Construction	5	0.6	0.8	0.1	162	74	52	1.70	1.43
15	Retail and Wholesale	30	3.5	12.7	2.0	422	82	68	1.47	1.33
16	Other Services	72	8.4	26.8	4.3	372	111	107	1.40	1.45
	Total	856	100.0	628.1	100.0	734	100	100		

Source : Derived from Employment Gazette and Labour Market Trends Various Editions, and Welsh Input-Output Tables for 1996

Table 4 shows a concentration of RSA in particular broad industrial sectors over the last decade, most notably in electronic engineering, automotive components and transport equipment, and metals, mechanical engineering and other machinery. These three sectors account for nearly 60% of the total RSA spend over the period. The Electronic Engineering sector has seen high levels of inward investment in what have often been comparatively large new developments, and equally significant expansions of existing projects. A large proportion of this spending has been directed to the Asian owned manufacturing sector. High levels of spending in automotive and other transport industries also reflect Welsh success in attracting inward investment in this sector. Large amounts of RSA in the period went to Ford (Bridgend), Toyota (Deeside), and General Electric (Engine Maintenance – Caerphilly) and British Airways (Maintenance - near Roose, in the Vale of Glamorgan). These sectors were also amongst the fastest growing sectors of manufacturing in the national (UK) economy in this period.

The final four columns of table 4 provide some sectoral economic indicators, derived from the 1996 Welsh Input-Output Tables (for a description of the I-O methodology see Brand, Hill and Roberts 1998). These indicators illustrate the differences between sectors, in terms of both their direct and indirect impact on the regional economy. Disposable income (gross wage cost less employer costs and employees income tax and National Insurance Contributions), and GDP/FTE both vary considerably by sector. There is broad correlation between these two measures, the first being a sub-set of the second, whilst in some sectors, such as food, drink and tobacco, the relatively high ‘other value added’ component (including profits) pushes the GDP/FTE index to 70% above the Wales average. The GDP/FTE index is highest in oil and chemical sectors, which are dominated in Wales by firms such as Texaco, Gulf, Dow Corning, BP, British Oxygen and Associated Octel, where high capital intensity means labour productivity is comparatively high (and direct employment per unit of output is low), partly accounting for the relatively high employment multipliers (ratio of ultimate to direct employment impact) in this sector. The GDP multipliers are much less variable, ranging from 1.33 in Textiles and clothing, where direct GDP/FTE is also relatively low, to 1.86 in basic metals where direct GDP/FTE is almost 50% above the Welsh average and where the employment multiplier is well above 2. The indicators shown in

Table 4 could then illustrate the income generating potential of particular new investments. Those sectors where income generating potential is high will also support higher fiscal revenues, partly or completely offsetting original grant aid costs, as incomes and profits are taxed.

Table 5 RSA Grants accepted by UK and overseas companies : offers accepted and payments made 1 January 1988- December 1998

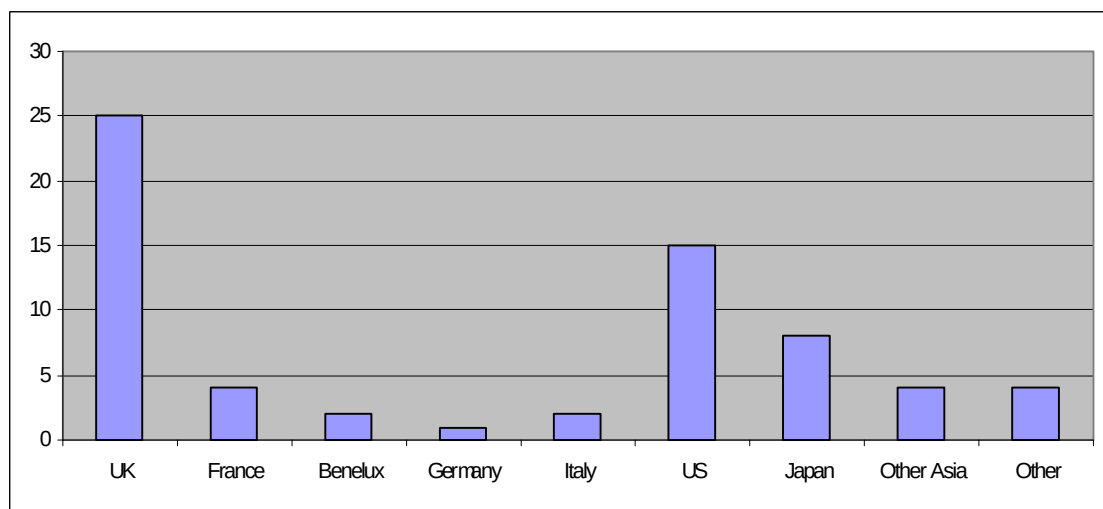
Nationality	Number of Offers	%	Amount of RSA Offered, nominal £m	%	Average RSA per Offer, Nominal £000s
UK	561	65.2	269.3	42.8	480.0
France	21	2.4	24.0	3.8	1143.9
Germany	29	3.4	15.5	2.5	535.5
Other Europe	52	6.0	32.1	5.1	617.6
North America	111	12.9	110.6	17.6	996.8
Japan	49	5.7	52.4	8.3	1069.0
Other Asia	8	0.9	94.5	15.0	11813.1
Others	30	3.5	30.7	4.9	1023.6
Total	861	100.0	629.2	100.0	730.8

Source : Employment Gazette and Labour Market Trends Various Editions

Table 5 indicates that only 43% of the value of offers made (where a first payment was made), but 65% of the number of offers between 1988-98 were to UK owned companies. North American firms accounted for a large proportion of inward investment inflows into Wales during the period and were offered just over £110m – once again much of the RSA was actually to expansions projects as opposed to new developments. The average offer to North American firms was £1m. Over the same period Japanese firms were offered just over £52m. Wales saw a boom in inward Japanese investment during the late 1980s, reflecting in particular expansions amongst existing investors such as Sony, Matsushita, Sharp and Brother, as well as smaller new investments by firms producing electronic and automotive components for the original equipment manufacturing sector, and the for the major Japanese car assemblers located in England. The total amount offered to Japanese firms in the period was smaller than the amount offered to ‘other Asian firms’. Eight offers here, made in the period after 1995, amounted to just under £95m, with LG accounting for around two-thirds of this, and much of the remainder going to two companies Newport Wafer Fab, and Halla. Each of these three companies were experiencing severe problems during 1998-1999, with Halla closing during January 1999, and Newport Wafer Fab going into administration in December 1998.

On a smaller scale French owned companies were offered £24m, with German companies receiving £16m. The average offer to French firms was twice that to German firms, while the average offer for French, North American and Asian firms was over twice the amount offered to UK firms. Moreover, larger grants have tended to be offered to foreign firms. Figure 1 shows that of the 65 RSA offers which exceeded £2m in the period 1988-1998, 25 were to UK firms. However, of the eight largest grants, (exceeding £6m), only two were to 'domestic' firms, of which over £36m was offered to British Airways Engine Maintenance. These eight grant offers represented around £160m during the period, approximately one quarter of the total number of offers (where a first payment was made). Of this total, over two thirds of the cash amount was to foreign firms, including Ford, Sony, General Electric, Newport Wafer Fab and LG.

Figure 1 Number of RSA Offers Exceeding £2m (1988-1998), by Ownership.



Source: Derived from Employment Gazette, various years.

In summary, almost £800m of RSA has been offered to companies in Wales over the past decade, a large proportion of which has gone to the foreign owned sector in relatively prosperous parts of Wales. The electronic engineering and automotive components and transport equipment sectors have received the highest share of total RSA offers, and the largest amount of RSA per offer (reflecting larger plant size).

4. The Effectiveness of Grant Aid

Measuring Effectiveness

A number of academic studies examining the effectiveness of regional policy have concentrated on the influence of regional investment incentives on investment behaviour in Assisted Areas. According to Begg and McDowell (1987), following Moore and Rhodes (1973), research has largely used shift-share methodologies and has suggested that extra amounts of employment, industrial investment, and capital stock in the Assisted Areas has been generated. These impacts could then be attributed to the effect of regional policy or regional investment incentives (Moore and Rhodes, 1976; Ashcroft and Taylor, 1977; Tyler, 1980; Mackay and Thomson, 1979; Twomey and Taylor, 1989). Rees and Miall's (1981) evidence for RDG and RSA suggested there had been a small shift in manufacturing stock into the Assisted Areas, but they found no evidence that regional incentives affected more capital intensive industries, or influenced the capital intensity of existing firms in the assisted areas. Other research has used regression analysis to examine the impact of regional policy instruments, and to estimate the cost effectiveness of these schemes (Wren and Waterson, 1991).

Evidence on the impact of regional policy in attracting inward investment is mixed. Shepherd et al (1985) said the evidence was negligible for attracting foreign investors to the UK, whilst Dunning (1986) found a modest impact on location decisions of Japanese owned industries. Taylor (1993) identified the importance of assisted area status in explaining the location decisions of Japanese investors in the UK, whilst Hill and Munday (1992) found a significant relationship between relative regional inward investment success and the availability of financial incentives for inward investors. See Christodoulou (1996) for a review of the role of financial incentives in inward investment location decisions.

Studies of regional policy undertaken by government agencies, departments (or by consultants on their behalf) have generally focused on cost effectiveness of financial assistance, using cost per job measures. This is unsurprising given their primary

objective to create or safeguard employment. However, regional financial assistance also has subsidiary objectives, which can make comparative analysis more difficult. Table 6 outlines a selection of studies, in terms of the assistance scheme(s) analysed, the measure(s) used, methodologies, and estimated outcomes. These studies have attempted to generate either crude gross costs per job figures or to develop measures incorporating (i) additionality (proportion of additional jobs created by assistance which would not have been created without the assistance); (ii) dead-weight (amount paid in excess of that necessary for project to proceed); (iii) displacement (proportion of jobs directly created by aid lost in other parts of the economy); and (iv) supplier effects (multiplier effects of jobs created by assistance in the supply chain).

The first three studies detailed in Table 6 relate to UK wide assessments of RSA (King, 1990, PACEC, 1993) and of Regional Enterprise Grants (REGs, Segal Quince Wickstead, 1992,1993). The remaining studies in Table 6 relate to various Welsh investment programmes. The different objectives of particular schemes, and the different methodologies and measures used make comparison of results extremely difficult. Thus, table 6 is intended to provide an illustration of these complexities, rather than a comprehensive review.

The significance of factors such as additionality, displacement, supplier effects, timings and lifetime of jobs, as well as the various adjustments to cash amounts for discounting, illustrate the importance of these estimates for successful evaluation. However, even these measures are incomplete, as the benefits of jobs created or safeguarded are not fully incorporated into the evaluation framework. For example, King (1990) and PACEC (1993) in their cost-per-job measures, adjusted gross jobs to allow for the lifetime and timing of created or safeguarded jobs to be incorporated, and used measures such as present value job years, and permanent job equivalents, whilst on the cost side, the RSA payments were reduced by the estimated direct tax flowback (in extra corporation tax paid on the RSA receipt, and/or income tax paid). Other benefits, such as the quality of jobs directly or indirectly supported, tax flows from indirect employment and output, or GDP generated could also be included, alongside a range of further costs of RSA. A review and critique of the measures used to estimate

the cost-effectiveness of RSA is provided by Swales (1997a, 1997b), who proposed an alternative cost-benefit approach to evaluation.

Table 6: Studies of Regional Assistance Programmes

Study	Assistance Scheme Analysed (Period covered)	Measure(s) Used	Methodological Points	Results
King (1990)	RSA GB wide (1980-84)	Gross Costs per job; Net Costs per job;	Survey based methodology. Gross costs adjusted for price effects, and direct taxes, then discounted to reflect opportunity cost of capital to give net costs. Further estimates were then made for 'deadweight'. Gross jobs adjusted for additionality, displacement and supplier effect; further adjustments were made to reflect the timing and lifetime of jobs created or safeguarded – for example to 'job years', 'present value job years' and 'permanent job equivalents'.	Comparative results (with PACEC 1993 – see below) Additionality ratio 62 - 64% ; Displacement = 27% Linkage ratio = 1.13 Net Cost per net job year = £653-676 (1990 prices)
PACEC (1993)	RSA GB wide (1985-88)	As above	Broadly similar methodology to King (1990) – some results adjusted to allow comparisons with previous study.	Using same methodology as above Additionality ratio 50-64% ; Displacement = 30-31% Linkage ratio = 1.19-1.22 Net Cost per net job year = £522- £661 (1990 prices)
Segal Quince Wickstead (1992, 1993) for Scottish Office, Welsh Office and DTI	Regional Enterprise Grants (REGs) UK wide (1988-1991). REGs were split into Regional Investment Grants (RIGs) and Regional Innovation Grants (RIN).	RIG - Turnover increase; exchequer cost per net job year; RIN - Technical Success of Project; Exchequer cost per net job year;	RIG results generated from surveys of 74 RIG firms in 1988 (55 interviewed again in 1990) and 100 firms in 1989. RIN results generated from survey of 45 RIG firms in 1989 (27 interviewed again in 1991) and 50 RIN firms in 1990. Results based on 1990/1991 interviews.	RIG- threefold increase in average turnover attributable to RIG; Cost of RIG expenditure = £1240 per net job year; RIN - 96% of firms had technically successful project. Exchequer cost per net job year = £1050-£1650
National Audit Office (1990)	Mid Wales Development Grant (1982-89)	Gross costs per job		Gross Costs per gross job = £1179
National Audit Office (1990)	DRIVE (1988)	Gross costs per job; Net cost per job;	Net cost per job took account of dead-weight, displacement and supplier effects	Gross cost per gross job = £4103 (out-turn prices); Net cost per net job = £11,495 (out-turn prices)
National Audit Office (1990)	DBRW Factory Building (1981-1985)	Gross cost per net job	Takes account of additionality only	Additionality = 62% of additional jobs; Gross cost per net job = £10,300 to £11,500 (at 1986 prices)
National Audit Office (1990)	WDA Factory Building (1989)	Gross costs per job; Net jobs created	Gross costs in terms of construction costs only; Net jobs created took account of additionality' displacement and supplier effects; Analysis generated from a survey of 40 firms utilising factory building programme, from which displacement effects were estimated. Supplier effects were estimated by dividing value of supplies from Welsh suppliers to surveyed firms divided by turnover per employee in 100 firms involved in NAO (1990) surveys of WDA factory building and investment programmes (see below)	Gross costs per gross job = £11,250 (1989 prices); Additionality = 90%; Displacement = 6% of additional jobs; Supplier effect = 5% of additional jobs Net jobs = 89% of gross jobs
National Audit Office (1990)	WDA Investment (1989)	Gross costs per job; Net costs per job;	Net jobs created took account of additionality' displacement and supplier effects; Analysis generated from a survey of 60 firms utilising investment programme, from which displacement effects were estimated. Supplier effects were estimated by dividing value of supplies from Welsh suppliers to surveyed firms divided by turnover per employee in 100 firms involved in NAO (1990) surveys of WDA factory building and investment programmes. Net costs excluded financing costs, dividend and realised value of assets.	Gross costs per gross job = £5,449; Additionality = 69% ; Displacement = 29% of additional jobs; Supplier Effects = 30% of additional jobs Net Cost per net job = £7,756
Welsh Office (1998)	Strategic Development Scheme: Factory Building (1998-99); Grants and Loans (1997-98)	Gross costs per job		Gross costs per job:- Factory Building = £7222 Grants and Loans = £2621
Welsh Office (1998)	Wales Tourist Board Capital Programme (1997/98)	Gross costs per job		Gross costs per job = £7000

5. Alternative measures of RSA effectiveness

Swales (1997a, 1997b) further developed the 'official' RSA analysis (King 1990, PACEC, 1993) to provide a technique which can be used in both the *ex-ante* assessment of the viability of projects and the *ex-post* assessment of the scheme in general. Swales argued that the additionality and national efficiency criteria of RSA create the possibility for developing a potentially coherent cost benefit appraisal scheme using shadow prices (taking overall costs and benefits into account) rather than market prices. The additionality criterion requires that the project would not go ahead without the assistance, whilst the national efficiency rule requires that, after all inputs and outputs have been valued and discounted, the project should have a positive net present value. Thus the aid should be given to those projects which the market would not deem viable (ie projects which fail to meet the required rate of return), but which are calculated as being so when all the costs and benefits are taken into account.

The cost benefit system developed by Swales attempts to provide a method to assess projects by examining their actual or potential impacts on the 'public purse'. The resultant equation generates the maximum proportion of grant aid which should be given for each job so that over a particular time horizon (in this case 10 years) the effect of giving the grant is fiscally neutral. Therefore, in addition to the actual cost of the grant, the cost of raising the money from taxpayers, of assessing and monitoring the projects, and of the firms in complying with the grant conditions are also incorporated. Furthermore, issues of additionality, displacement, multiplier effect on suppliers and consumers, and shadow wages, which take account of the real as opposed to the market situation, are incorporated into the evaluation framework. This measure allows a more complete range of costs and benefits to be considered and estimated than the previously used in costs per job calculations.

Swales (1997a) estimated that the maximum cost per job that should be paid in grant/subsidy in the UK is 2.45 times the annual wage for a job that will operate unchanged for 10 years. The model used was most sensitive to the number of years over which the project is set to run and the value of the shadow wage. Individual parameter values will vary from project to project, hence the general model results only offer a guide to project or firm specific evaluation. A broad cost-benefit

methodological framework could be generated, if project sensitive variables could be estimated. This system also presents a relatively short term measure of the fiscal neutrality without allowing comparisons to be made across schemes in terms of their longer term effects on the economy.

The House of Commons Report (1995) recommended that 'the DTI make the promotion of competitiveness in the Assisted Areas the principal aim of regional policy', whilst more recent government papers also illustrate a focus on industrial competitiveness issues (DTI, 1998). The adoption of competitiveness as a long term regional policy objective suggests that schemes such as RSA could be guided or targeted to improve the relative competitiveness of the region, so that the long term GDP per capita improving qualities of alternative funding options could, for example, be used for evaluation purposes. Cost-benefit measures could then be adjusted to provide longer term estimates of, for example, effects on GDP per head. As noted earlier individual projects would have different payback periods, costs and benefits, depending on the industry and region/firm being assessed. This may also hold for different schemes. For example, grant aid to a company might on average create a job which lasted on average 10 years. Therefore the project's costs and benefits must be assessed against that time frame when determining the maximum grant aid that could be offered. However, a training grant which improves skills might have a different time frame, whilst the likely increase in wages as a result of the new skill could be estimated. A grant which allowed a student to obtain a degree may expect a considerable pay back (for example, private rates of return to higher education have been estimated for the UK, where the 'premiums' to higher education may be measured over the working lifetime, see NCIHE 1997), whereas other skills may only be relevant for fewer years. The time frame and the 'premium' can therefore be different when assessing the maximum assistance which should be allocated. Labour market and skills surveys could help define the variables. Similarly a grant which improves a small firm's survival rate will have a different but potentially measurable time frame of effect (i.e. extra years of survival * wages for employees). Different schemes will also have different administration costs, different industries/firms will have different multiplier effects and different areas will have different shadow wages

(depending on local labour structure, inactivity etc.). Potentially these differences are all quantifiable or estimable, and could be incorporated into an evaluation.

6. Conclusions: RSA evaluation in Wales

Previous sections of this paper have described the sectoral and geographical history of RSA in Wales, alongside comment which has illustrated the different economic characteristics of these sectors or areas. This suggests that variables such as additionality, supplier effects and wages would differ significantly by sector and location.

However, there are methodological difficulties in examining the fiscal neutrality of RSA in a regional context. The structure of the UK fiscal system would create a need for adjusting the fiscal neutrality rule, as the tax benefits of a successful regional policy would flow back into the central exchequer, whilst the costs of assistance are largely paid from Wales's block grant. In addition, the Treasury's 100% employment displacement assumption (ie that regional policy merely redistributes economic activity, with no national expansionary impact) presents further difficulties, although Gillespie et al (1999) challenge this assumption, by identifying national (UK) expansionary effects of Scottish regional policies. They then suggest that the fiscal benefits of this expansion should be offset against subsidy payments. As an alternative or addition to this, assessment of RSA awards could be made against a more explicit, GDP raising threshold, since GDP convergence is the ultimate aim of regional policy.

The House of Commons report (1995) outlined the economic (and social) case for regional policy, and recognised the need for a long term approach. The principal objective of RSA is job creation. However, ideally this would involve creating a mix of job types to meet the current and desired labour market and economy-wide needs, as well as other long term benefits to the economy. The current RSA qualifying criteria, and limited policy objective (job creation) have encouraged narrow approaches to evaluation, and hence may have restricted flows of money to areas where it is most needed. Broader policy objectives, and criteria that focus on economy wide impacts of schemes, would facilitate a move to a wider, more systematic evaluation of policies.

An evaluation approach need to be developed to help regional development bodies in their resource allocation decisions, including RSA. These levels could vary depending on sector and location within the region. There is for example, already an explicit policy by the WDA to achieve inward investment job growth in less prosperous parts of Wales, aiming for 50% of new jobs outside South East Wales. Ultimately an evaluation framework should guide policy towards investments that would achieve desired long-term economic or social outcomes. The RSA offered to companies should then depend less on the number of additional jobs created or safeguarded and more on the potential wider impacts of the scheme. As an indication of these potential impacts, measures such as relative 'quality' of additional jobs (as measured by wage rates or value added per job), or their GDP creating potential (perhaps using sectoral GDP multipliers), and on the actual or anticipated sector growth (these factors would also have implicit tax implications).

This paper has sought to explain the significance and distribution of RSA spending in Wales, and to demonstrate the need for an effective evaluation tool. This is illustrative of a wider need in Wales and elsewhere for effective policy evaluation. For example, the impact of the WDA on the Welsh Economy has recently been estimated (Cambridge Econometrics, 1998), and the activities of Scottish Enterprise have been evaluated at the regional and national level (Gillespie *et al* 1999). The potential for extending existing Welsh economic models for local evaluation purposes has been explored (Roberts *et al* 1999), with work still on-going towards wider evaluation approaches.

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