

This study assesses the literature review of cost-benefit analyses from a tax-payers perspective of the labour market inclusion of persons with disabilities. It includes an extensive and structured overview of relevant global literature (studies and research) in a period of over 30 years. The main findings of this study on the impact of inclusive labour markets for persons with disabilities are the following: 1) Disabled people, government and taxpayers are likely to benefit financially in the long-term from greater investment in employment in the open labour market of persons with disabilities; 2) There is a large variety of models which support persons with disabilities in work, training and employment, working with different publics and different objectives; 3) In terms of models supporting access to the open labour market, supported employment and individual placement and support have proved to be effective in doing so and with high cost-benefit return for the tax payer.

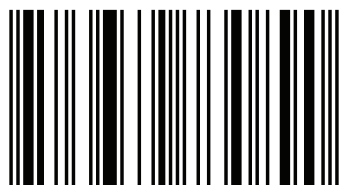


EASPD is the European Association of Service providers for Persons with Disabilities, and represents over 15.000 support services for persons with disabilities across Europe. The main objective of EASPD is to promote equal opportunities for people with disabilities through effective and high-quality service systems.



Stephen Beyer

Economic impact of inclusion of disabled persons in the labour market



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The economic impact of inclusion in the open labour market for persons with disabilities



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Researched and Written by
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Table of Content

	Page
Acronyms and Glossary	iii
Acknowledgements	iv
1. Background to inclusive employment policies in the E.U.	1
1.1. Active Labour Market Programmes	1
1.2. The failure of ALMPs for people with disabilities	3
2. Study methodology	6
2.1. Aims of the study	6
2.2. Literature Search	7
2.3. Limitations	7
3. Calculating financial costs and benefits	7
3.1. Cost: effectiveness and cost-efficiency	7
3.2. Employer perspective	9
4. Evidence that effective inclusive employment can be achieved for a variety of groups of people with disabilities	10
4.1. Inclusive employment models that we have	10
4.2. Current model performance	13
4.3. Taxpayer cost outcomes	14
4.3.1. Intellectual disabilities	14
4.3.1.1. Conclusions	19
4.3.2. Individual Placement with Support for people with psychosocial disabilities	20
4.3.2.1. Conclusions	27
4.3.3. Taxpayer outcomes for people with other disabilities	27
4.3.3.1. Conclusions	34
4.4. Cost comparisons with sheltered and enterprise models	35
4.4.1.1. Conclusions	42
4.5. Public authorities	42
4.5.1. Conclusions	44
4.6. Methodological issues impacting on net costs	44
4.6.1. Conclusions	48
5. Impacts on other stakeholders	48
5.1. Businesses	48
5.1.1. Conclusions	52
5.2. Individuals	52

5.2.1 Conclusions	57
6. Transition from education to inclusive employment	57
6.1. Job coach supported employment as an approach to VET	57
6.2. The particular role of internships in promoting inclusive employment	59
6.3. Evidence for costs of work-first and train-first approaches in inclusive jobs for young people with disabilities	61
6.4. Conclusions	62
7. Conclusions	63
References	69

Acronyms and Glossary

ALMP- Active Labour Market Programme

ASD- Autistic Spectrum Disorder

ACE- Adult Continuing Education

CBI- Confederation of British Industry, a UK employers forum

DPA - Diversified Placement Approaches

EASPD- European Association of Service Providers for Persons with Disabilities

GST- Group Skills Training

ICER- Incremental Cost-Effectiveness Ratios

Intellectual disability- Used as a preferred term for people who have significant limitations in intellectual functioning and adaptive behavior over a range of social and practical skills, originating before age 18. It is used here where previously mental retardation or learning disabilities would have been, even where other authors may have used the older terms in their reports and articles

IPE - Individual Plan for Employment

IPS- Individual Placement and Support, an employment support system for people with Psychosocial disabilities

IQ- Intelligence Quota, a summary statistic from an assessment of intelligence

LA- Local Authority, a Municipality

OECD- Organisation for Economic Co-operation and Development

MRDD- Mental Retardation and Developmental Disability Services in the US, relating to people with intellectual disabilities

NDDP- New Deal for Disabled People, a return to work programme in the UK

NAO - National Audit Office in the UK

NEET- A person “Not in Education, Employment or Training”

NGO- Non-Governmental Organisation

NI- National Insurance, a worker payment towards statutory pension in the UK

Psychosocial disabilities- Preferred term under the UNCRDP to describe people with impairments and participation restrictions related to mental health conditions. It is used here where previously mental illness or mental health problems would have been, even where other authors may have used the older terms in their reports and articles

QALY- Quality Adjusted Life Year

RCT- Randomised Control Trial

RTW- Return-to-Work

SCIE- Social Care Institute for Excellence

SSI - Supplemental Security Income (a US welfare benefit)

SSDI- Social Security Disability Insurance (a US welfare benefit)

SEP- Supported Employment Programme (a now defunct UK disability employment programme).

TJTC- Targeted Jobs Tax Credit.

UNCRDP- United Nations Convention on the Rights of Disabled People

VB- Voluntary Body, Third Sector Organisation

VET- Vocational Education and Training

VR- Vocational Rehabilitation, a process and also a US government funded programme to help disabled people into work

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The Authors

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1. Background to inclusive employment policies in the E.U.

1.1. Active Labour Market Programmes

People with disabilities have been eligible for both Mainstream, and Specialist, Active Labour Market Programmes (ALMP) over the years. In Mainstream ALMP terms, the Organisation for Economic Co-operation and Development (OECD) have shown that many countries have made good greater use of “Work-first” approaches to getting unemployed people into to work over the first decade of the 2000s (OECD, 2010). These have involved activation/mutual-obligation strategies, where re-employment services are offered to unemployed people such job search, training or employment programmes, underpinned by the threat of benefit sanctions. Job-search assistance has been important during recession as even here jobs are being created by some companies and employment services can help people and companies by fill these vacancies quickly. Activation approaches include mandatory registration, intensive interviews, individual action plans, proof of job search and work placements (National Institute for Adult Continuing Education (NIACE 2012; Dolton and O’Niell 2002). These work-first approaches have delivered good employment outcomes during the period. However, job-search support may not of itself be enough to gain employment when people do not have the skills needed to find jobs or when they have low productivity. They can have limited relevance to people with disabilities, particularly those with more complex disabilities such as intellectual disabilities, severe psychosocial disabilities and autism. Specialist ALMPs have been made available meet this gap and have been categorised (Thornton and Lunt 1997; EIM Business and Policy Research 2002) and include:

- Intensive counselling and job-search assistance: This includes programmes that assist disabled people in the job search process through intensive, individualised counselling.
- Vocational rehabilitation: These help disabled people to get, keep and advance in suitable employment, by providing vocational guidance and vocational training.
- Subsidised employment: Programmes that partially subsidise the employment of disabled people.

- Supported employment: These provide adaptations and personal assistance through job coaches at the workplace for employed disabled people.
- Sheltered employment: This includes specially organized workplaces that employ disabled people primarily (See Section 4.4, page 25 for a more detailed discussion).
- Incentives for starting enterprises by disabled people: These include programmes promoting entrepreneurship by encouraging unemployed disabled people to start their own business, and include social enterprises, social firms, and co-operatives.
- Combined measures: a combination of several instruments, which can be placed into different categories.

In reaction to this, resources within the E.U. have been shifted from the work-first to “train-first” approaches (OECD, 2010). This shift to train-first partly reflects the impact of the economic crisis on the structure of work within countries. Adult Continuing Education (ACE) and Vocational Education and Training (VET) approaches to skill development have had an important role in ensuring workers have the appropriate skills for emerging jobs. It also reflects the fact that each year more than 20% of jobs are created and/or destroyed on average in the OECD countries, and around one third of all workers are hired and/or separate from their employer, this varying considerably across OECD (and therefore E.U.) countries. Poor job match and poor skills, combined with this job turnover, are the drivers for work-first approaches leading to rising unemployment rates around 2 years after intervention. As jobs turnover, low skill workers find it difficult to become re-employed. This said, train-first approaches have themselves been found to have broadly a 2-year lag in improved employment rates, this being delayed by the need to engage in train-first approaches then to maintain higher employment rates. For more skilled workers, further skills training is also seen to improve the quality of jobs obtained, with earnings as well as other employment outcomes being greater over time than for lower skilled workers. However, engaging people with disabilities in VET schemes, either after basic education or as adults, has also proved difficult.

In reality, employment interventions often offer a combination of job-search support and participation in training. These “mixed” approaches provide case managers with the option

of presenting training to jobseekers along with regular employment, and to blend the most effective approaches for each person. However, even where ALMPs set out to provide a combination of work-first and vocational training approaches the implementation can be far from effective, even for non-disabled unemployed people. In the UK, for example, skills provision for unemployed adults has been found to be *“patchy and often transient”* (NIACE 2012, p 15). Provision of skills programmes have been geographically limited and dependent on government provider agencies (operating under the UK’s Work Programme) being learning providers themselves or where learning providers have strong non-contracted relationships with Work Programme providers. Overall progress on linked job finding and skills input to jobseekers remains limited (CBI, 2012). This is no-doubt the case in other countries also.

1.2. The failure of ALMPs for people with disabilities

As far as qualification training is concerned, young people with disabilities are still more likely to leave school with few or no formal qualifications. With VET/ACE they are often less likely to be motivated to, or have the skills to, manage their own adult continuing education or vocational training. They are more reliant on public sector policy to provide them with supported options to improve their skills and to increase their chances of paid work. Even with this, young people with disabilities are less likely to have access to vocational training as young adults, post-school education. For example, the Papworth Trust (2013) estimates that less than one third of people with intellectual disabilities in the UK take part in some form of education or training. Townsley et al. (2014) found that only 50% of work-based VET providers in Wales worked with people who had ASD, and of these only 37% felt confident in working with young people with ASD.

Young people with disabilities are particularly disadvantaged in accessing appropriate forms of ACE and VET, and they are represented in high numbers in the population who are “Not in Education, Employment or Training (NEETs). Not all young people with disabilities are disadvantaged by having low levels of literacy or few qualifications. People with high functioning ASDs can gain degree level education, but can still struggle to acquire the core skills needed to get, learn and keep a paid job subsequently. This is especially true of young

people who have communication disabilities and who struggle to cope socially in work even though they may have good cognitive skills and educational qualifications.

Data from Eurostat shows a similar picture across many States in 2011 reporting that the percentage of people aged 25-64 participating in formal or informal education and training ranged from 1.6% in Rumania to 32.3% in Denmark, with an E.U. average of 6.4%. This suggests that there is significant scope for people with disabilities to fall outside of ACE and VET in many part of E.U.

It is notoriously difficult to gain accurate, direct, statistics at State level for the employment levels of people with a range of disabilities. The application of these Specialist ALMPs has varied greatly across the E.U. and, along with data collection and evaluation problems, this has left some holes in our knowledge. *“It is difficult to shed light on the overall impact of ALMP for disabled people, and few countries reveal robust data. If data does exist, it consists predominantly of the number of participants and expenditure. Both labour market barriers and failure to activate disabled people into employment interact in outcomes. So, even if effective ALMP are in place this alone may not produce results”* (Greve, 2009).

By 2002 the estimate was that *“less than a third of the population of disabled people is in paid employment”* (EIM Business and Policy Research 2002; p 20). More recently, there has been a reliance on use of Labour Force Surveys which have included questions on disability. Greve (2009) reviewed this data, and policies relating to disability, and identified average employment rates for E.U. countries as 28.3% for disabled people who are *“considerably restricted”* and 61.7% for those who are *“restricted to some extent.”* The overall rate for E.U. (25 countries) was 65.0%¹. He concludes that: *“This data provides a clear indication of national variation in relation to employment, and demonstrates that disabled people experience considerable difficulties in entering and remaining in the labour market. Disabled people maintain lower participation rates and higher levels of unemployment than non-disabled people, indicating that there is much to do to achieve full participation and equality in employment.”* Eurostat figures² estimate that only 47.3% of people with a disability *“with*

¹ Extract from EUROSTAT Database. Bulgaria, Poland and Latvia were not covered in this Labour Force Survey.

²http://ec.europa.eu/eurostat/statistics-explained/index.php/Disability_statistics_-_labour_market_access

basic activity difficulties” were employed (E.U.-28), 20% lower than non-disabled adults. Using the definition of the employment rate decreases to 38.1%, 30% below that for non-disabled adults. The gap between the employment rate of people with, and without, disabilities ranged from 8% (France) to 40% (UK, Ireland, Romania, the Netherlands, Hungary and Bulgaria). Further, in 14 countries more than 50 % of those with basic activities difficulties were economically inactive in 2011, this figure being reached by 22 countries using the second definition (See above).

Differences in employment rates between people with different types of disability are even more difficult to establish. Samoy et al. (2016) has provided an analysis of the LFS for disability type. In addition to people’s disability, there is also whether people experience “work limitations” such as being hampered in daily activities by experiencing at least one problem in the amount or the type of work they can do or in getting to and from work. The authors reported the following differences in employment rates for different disorders: mental and behavioural issues (with disability 40.9%, with and having limitations, 25.6%, without 69.2%); musculoskeletal disorders (with 58.1%, with and having limitations, 43.2%, without 69.9%); metabolic disorders (with 52.8%, with and having limitations, 32.1%, without 68.8%); cardiovascular diseases (with 49.8%, with and having limitations, 29.1%, without 69.3%); and respiratory diseases (with 58.4%, without 68.5%).

There is further controversy, however, over the levels of employment experienced by disabled people in different States and those classified as “not economically active.” The classification of not economically active is heavily dependent on State level employability criteria, legal definitions of who can be employed, and the level of investment in employment support strategies. Some people have been regarded as unemployable by virtue of their status as being in legal guardianship. Where States have pursued active welfare to work policies, as in the UK, we have seen people regarded long-term as economically inactive moving into employment with the appropriate support. With proportion of economically inactive disabled people capable of employment with the right support and resources, the current employment statistics may well over-estimate the percentage of disabled people in employment.

These figures indicate that much more is needed to ensure our ALMPs are effective in delivering more equitable employment rates for people with disabilities compared to the general population. Clearly those people with work limiting mental and behavioural disorders (intellectual disabilities and psychosocial disabilities) fare worse in employment than people with other disabilities and are likely to need more intensive interventions than are currently delivered by ALMPs. The balance in investment between Specialised ALMPs that focus on inclusive jobs, and those that focus on sheltered jobs, is a core concern of this paper.

2. Study methodology

2.1. Aims of the study

This study was commissioned by EASPD to assist it in its understanding of the employment situation of people with disabilities in Europe and the strength of the financial case for inclusive employment. The remit was to provide an extensive overview of studies and research on the economic impact inclusion in the open labour market for persons with disabilities can have for governments and public authorities and a more general overview assessing impact on businesses and individuals.

This study provides a structured (but not a systematic³) review of the relevant literature. Using standard methods, relevant articles in the English language (or with English language abstracts) were identified, published between 1980 and 2016, from Search Engines using an inclusive keyword based search strategy. These were then screened for relevance before being sorted, evaluated and the themes from them drawn together along with specific data on costs.

³ A systematic review attempts to collate all empirical evidence that fits pre-specified eligibility criteria in order to answer a specific research question. The key characteristics of a systematic review are: a clearly stated set of objectives with pre-defined eligibility criteria for studies; an explicit, reproducible methodology; a systematic search that attempts to identify all studies that would meet the eligibility criteria; an assessment of the validity of the findings of the included studies; a systematic presentation, and synthesis, of the characteristics and findings of the included studies.

2.2. Literature Search

Searches were made of the following databases: NAHL Complete, EconLit, MEDLINE Complete, ERIC, Embase, PsycINFO. Further references have been generated from searches of bibliography and Google Scholar.

2.3. Limitations

There are of course caveats to our findings. The resources and time available restricted our searches to English language articles and chapters, and to a broad search strategy. Some of the literature is not peer reviewed and not fully amenable to a systematic review methodology. Some relevant papers were not publicly available and could not be included here. We do feel however that the study provides a good level of information on which to make some judgements about the economic value of inclusive (community-based) employment for people with disabilities.

3. Calculating financial costs and benefits

3.1. Cost: effectiveness and cost-efficiency

Any intervention will impact on different segments of society in different ways (Schalock and Butterworth 2000). In any employment intervention aimed at getting people with disabilities into paid work, the individual with a disability will be the primary beneficiary. All other stakeholders can be represented by the “taxpayer” perspective. The individual and the taxpayer perspectives are mutually exclusive groups that, together represent all of “society,” another important perspective.

In any benefit:cost calculations, different costs and benefits (or savings) will be relevant, depending on the perspective taken. In relation to employment and the individual

perspective, benefits to the person will include gross wages received, any benefits in kind from a job, and any non-means tested welfare benefits received when in work. The costs incurred by the person when in employment would include any reduction in welfare benefits received, lost wages from any previous employment and any tax paid on income.

From the taxpayer perspective the benefits of a disabled person entering employment would include reductions in the cost of other day activities or sheltered work they did before, additional income taxes received from the employee when entering paid work and any reduction in welfare benefits paid to them by the government before entering employment. Cost to taxpayers would include the cost of any service supporting people with disabilities into employment, payments to help employers with work-based adaptations, special equipment or accommodations to help the person to be mobile and to work, and any wage subsidies or tax credits paid by the government. The taxpayer perspective tells us where investment by government might be regarded as better placed in one method of delivery than another.

It is clear that some things that are benefits from one perspective (e.g. reduced taxes paid to taxpayers by employees) can be a cost from another perspective (e.g. increased tax paid from salary by the individual worker). These can be called “transfer costs” as they move from one part of society (from the individual) to another part (to the taxpayer). The “society” perspective captures the overall effect of the programme in question on the overall total resources of society. Only those benefits (or costs) that accrue to one group within society with no equal balancing cost (or benefit) to the other group will remain in the social perspective. As a result, the net cost of the programme to society will only include the value of outcomes that affect the total amount of resources available to society.

We can breakdown benefit:cost analyses further by using additional perspectives, each of which will generate specific costs and benefits. For example, we might create a benefit:cost analysis of an employment programme from the perspective of a municipality (rather than the State level taxpayer perspective). Here we might include the costs of local programme delivery costs (rather than State funded costs), and savings include reductions in the use of municipality funded services such as social work services or use of day centres, as a result of taking part in the programme.

3.2. Employer perspective

Further, we can create a benefit:cost analysis from the employer perspective. Citera (2002; 2006) has defined a methodology for capturing the costs and benefits from the employer view, which he terms “matched sample cost-accounting” focusing on the differences to an employer of hiring a person with and without a disability. The main areas where costs can be greater or less for people with disabilities. There are:

- greater or less supervision
- the extent to which workers are reliable and show up for work on time
- productivity in tasks of the job
- the offer of government monetary incentives to employers for hiring disabled workers
- relative length of stay in a job and of any consequent cost of recruitment and staff turnover
- the cost of staff being hurt on the job
- health claims on employer insurance policies
- the cost of any work-based equipment and accommodations for disabled people.

Salaries are not included as in most countries it is illegal to pay disabled people less than others for a similar job. We will use some of these perspectives in understanding the findings from the research literature.

4. Evidence that effective inclusive employment can be achieved for a variety of groups of people with disabilities

4.1. Inclusive employment models that we have

We identified a number of specialised approaches to assisting people with disabilities into inclusive employment.

Supported Employment

Supported employment has been defined by the European Union of Supported Employment (EUSE) as *“providing support to people with disabilities or other disadvantaged groups to secure and maintain paid employment in the open labour market.”*⁴ Support is often transacted through the use of a trained job coach. EUSE describes supported employment as a 5 step process:

1) Engagement: The person with the disadvantage has received, in an appropriate manner, all the information needed to decide about using the Supported Employment Provider. The organisation recognises, promotes and values stakeholder involvement in planning and decision-making at all levels within the organisation. The organisation is committed to protecting and promoting the rights of people who are disadvantaged. A quality service is delivered by a range of professional and competent staff at all levels within the organisation.

2) Vocational Profile: A Person-Centred approach is used to collect relevant information about the individual’s aspirations, interests and abilities for work. Individuals are supported to make

⁴ <http://www.euse.org/index.php/resources/definition>

informed and realistic choices about work and future career development. An individual flexible plan is developed with each job seeker.

3) Job Development: Appropriate training and support to find a job is made available to the person. The individual is supported to find the best possible job.

4) Employer Engagement: The employer is supported to find the best person for the job. The Job Development & Marketing Plan reflects local and regional employment trends, and includes plans for development and training opportunities. Vocational profiles and worksite analysis are used to identify job matches. All job match outcomes are communicated to the job seeker immediately.

5) On / Off Job Support: The employee's training and support is appropriate and effective and encourages workplace independence and progression. The Job Seeker finds and sustains a paid job in the ordinary labour market. The employee is a valued colleague and a full member of the workplace team. The employee has opportunities for career development.

Supported employment began by serving people with intellectual disabilities, but was soon extended to accommodate people with other disabilities. In the US, by 1989 supported employment was also serving people with ambulatory, visual, hearing, fine motor and communication impairments, and people with psychosocial disabilities (Kregel, Wehman and Banks 1989). The broadening of supported employment to more people with disabilities has continued (Beyer et al. 2010).

Individual Placement and Support

The IPS model developed out of Supported Employment but focuses primarily on people with psychosocial disabilities. The model is described through six primary elements: commitment to competitive employment (inclusive employment in our context); eligibility based solely on client choice; rapid job search; well-integrated treatment and employment teams; attention to client preference in job search; and individualised employment support (Bond et al. 1997). Adherence of services to the project is often assessed by use of an IPS Fidelity Scale which assesses the extent to which programmes deliver all elements of the model.

Vocational Rehabilitation

The exact delivery model in practice is dependent on country specific programmes and commissioning. For example, in the US supported employment in inclusive jobs can be delivered for people with disabilities through State/Federal Vocational Rehabilitation (VR) services. The focus is on individual matching and placement decisions and on-the-job supports and services are among the wide variety of services offered through vocational rehabilitation. A range of additional, complementary services are available including training, aids and adaptations, interpreters and personal assistance.

Social enterprise/social firm

A social enterprise/firm can be described as a programme midway between sheltered work and competitive work (Eikelmann & Reker, 1993; Davister et al. 2004) where groups of clients are trained and supervised among both disabled and non-disabled workers in an industry or business. Social enterprises are mostly found in Europe (Vidal and Claver 2005) and developing countries, and typically work in the competitive labour market as affirmative businesses, cooperatives, collectives, consumer-run businesses, or social firms. Often a minimum percentage of employees with a disability is set as the criteria for being a social plan (50% by Social Firms UK)⁵. The social enterprise should be financially viable and, ideally, profitable without subsidies. Some social enterprises, such as the cooperatives in Trieste, Italy, are non-profit businesses where workers are also co-owners and vote on business decisions (Ramon, 1995). Consumer-run businesses distinguish themselves from other social enterprises by their consumer-only orientation (Latimer, 2005; Trainor & Tremblay, 1992). The major advantages of the social enterprise model are real-world remuneration and a sense of belonging to the enterprise, not to mention the accommodations offered to compensate for deficits or symptoms. However, social enterprise programs can be perceived as ghettos that make it difficult for people to eventually integrate into regular competitive settings.

⁵ <http://www.socialfirmsuk.co.uk>

The Diversity Placement Approach (DPA)

DPA has been described by Koop et al. (2004) where the emphasis is on providing a wide range of work placements that are seen as responsive to a wide range of capability, needs and potential worker preferences. DPA consists of work readiness training before and between jobs; assessment of work readiness when people attend work crew training; use of small caseloads; weekly team meetings to share information; non-vocational services can provide support; weekly contact between clients and case managers; a range of job placements include work readiness crews, volunteering, sheltered workshops; agency-run businesses; group placements and individual placements with or without a job coach; a diverse pool of community jobs is developed to allow for job changes; movement from work crews to group placements; sheltered work or an agency run business; job placements are flexible but not time limited; work is the focus of rehabilitation. Again a fidelity scale has been developed.

4.2. Current model performance

While there is clearly a level of job coach supported employment delivery across Europe (European Union 2012) there is significant variability in formal arrangements for delivery and funding. This leads to problems in institutionalising and scaling-up its delivery. The authors note that, with the exception of Sweden, in Europe unemployed people in general receive support through public employment services, while disabled jobseekers tend to be referred to private sector or NGOs for employment supported delivery. People with disabilities are perceived differently from other employment support consumers and, without stable and predictable funding systems, there remains a gap in the availability of support for inclusive employment designed for the needs of people with disabilities.

Arguably some of the strongest evidence on cost-effectiveness is for IPS. In the UK, IPS has been recognised as an effective approach for people with psychosis or schizophrenia by the National Institute for Clinical Excellence⁶, whose remit is to recommend evidence-based, cost effective, treatments to the National Health Service. Yet, recent reports suggest that there

⁶ <https://www.nice.org.uk/guidance/qs80/chapter/Quality-statement-5-Supported-employment-programmes>

appears to little penetration of IPS within the E.U.. Boardman and Rinaldi (2013) suggest that there are attitudinal barriers on the part of professionals to employment as a possibility that influence IPS use. Bond, Drake and Becker (2012) note that funding and social security systems can influence the effectiveness of IPS and cite differences of 67% in inclusive employment outcomes for US based IPS compared to 47% on other countries. Boardman and Rinaldi (2013) suggest that the nature of the link between receiving welfare benefits, and eligibility for free or affordable health care in different countries can also impact on IPS outcomes for people with severe psychosocial disabilities. Lack of flexibility of host organisational systems to accommodate the approaches that are key to IPS's success is another factor. In both cases, benefit:cost arguments are essential if governments are to provide a sensible organisational framework and funding for IPS/supported employment.

4.3. Taxpayer cost outcomes

4.3.1. Intellectual disabilities

Many of the early studies of cost of inclusive employment come from the United States and focused on people with intellectual disabilities. The US legislatively defined "*supported employment*" in 1984 and provided Federal funding for its delivery and for University teaching and evaluation. We saw a significant expansion of delivery during the late 1980s and early 1990s and many evaluation studies come from this period of university engagement. Studies from this period in the US largely provide evidence of cost-efficiency of job coach supported employment for this group, where it was often found to provide more benefits than costs to the taxpayer.

Hill and Wehman (1983) studied 90 people in Virginia who went into inclusive jobs through supported employment and found a benefit:cost ratio of 1.17, with every \$1 spent recouping \$1.17 from taxes paid, reduced government subsidies, and decreases in alternative service costs.

A larger study researched 30 supported employment programmes that served 729 people in Illinois between 1986 and 1990 (Conley, Rusch, McCaughrin, & Tines, 1989; McCaughrin & Rusch, 1990; Rusch, Conley & McCaughrin, 1993). The projects produced savings in each year

and by the fourth year returned \$0.89 for each \$1 invested. They did not “break-even.” Again the great majority were people with an intellectual disability.

Hill et al. (1987) analysed the costs and benefits of supported employment between 1978 and 1986 in Virginia again serving people with moderate a learning disability. Savings increased over time and by the eighth year the taxpayer received a return of \$2.93 for every \$1.00 invested. Taken over the whole 8 years, the programmes returned \$1.87 on every \$1 invested.

Tuckerman and Bigsworth (1988)⁷ reported on a cost-analysis of a supported employment project for people with mild and moderate intellectual disabilities. The cost study provided a forward projection of costs for each person and gave a comparison with the costs of providing employment for them through sheltered workshops, and an estimate of the size of the programme necessary for the government to reach a “break-even” point. The study found that the net total government expenditure for each supported employee was significantly less than that for workshop employees. The study also estimated that a break-even benefit:cost ratio would be reached two years after the programme began. These results were based on the high job retention results in the programme over its initial implementation.

Cimera (1998) explored the cost-efficiency for 166 people with intellectual disabilities and additional multiple disabilities in Illinois. He explored differences in benefit:cost ratios related to IQ, multiple disabilities, ethnicity and gender. The study reported a benefit:cost ratio for the taxpayer of 2.02 for people with mild learning disabilities (having high IQ) and 1.62 for those with moderate and severe intellectual disabilities (having low IQ). This study underlined the fact that people with more complex cognitive disabilities could take longer, and be more costly to place. Severity of disability could also impact on the level of wages earned, and therefore taxes paid, which would again influence any net taxpayer benefit.

Lewis et al. (1992) studied 11 supported employment services in Minnesota involving 856 people with a range of employment options (inclusive and sheltered). Net costs of individual

⁷ Cited in Bray, A. (2003)

and group placements in inclusive employment included reductions in the cost of more restrictive alternative placement as people went into community jobs. They found a taxpayer benefit:cost ratio of 2.22:1 for community supported employment. They also reported a benefit:cost ratio of 5.62:1 for individual people with disabilities. They reported a benefit:cost ratio for society of 2.56:1. The researchers also identified positive, but unquantified, benefits from employment through increased integration, quality of life and self-esteem.

Zivolich, Shueman and Weiner (1997) assessed the benefit:cost implications of making greater use of co-workers in supporting disabled people in work. They trained Pizza Hut restaurant managers to act as job coaches instead of external agency staff. Seventy-five percent of the supported workers in the study sample of 59 workers had a severe learning disability. The study identifies a net benefit:cost ratio with returns of 1.21 for taxpayers and 1.46 for society. This model appears to create good cost: benefit outcomes three years before similar outcomes are seen from programmes using external job coaching arrangements.

There were some studies that reported savings through supported employment but that did not reach full cost-efficiency. Noble et al. (1991) reported data from 45 agencies employment in New York State serving a total of 1,250 clients with a variety of disabilities receiving individual supported employment. Here, costs exceeded benefits giving the taxpayer a \$0.60 return on each \$1 spent. Noble et al. (1991) found a benefit:cost ratio of 0.39 for people with a mild, and 0.49 for people with a more severe intellectual disability. Lam (1986) found that individuals with moderate and severe intellectual disabilities earned more in sheltered workshops than in supported employment, while those with mild intellectual disabilities earned more in inclusive employment. Thompson (1992) also found that people with severe intellectual disabilities earned more in sheltered employment than in supported employment. Rusch et al. (1993) and colleagues carried out a range of studies on supported employment in Illinois. Again these services did not reach a break-even of 1.0, although the services concerned did return significant savings on investment. Their study of 729 people with intellectual disabilities entering inclusive employment through supported employment in Illinois over a two year period, found a benefit:cost ratio of 0.77.

In a national study of Supported Employment Agencies in Great Britain (Beyer et al. 1996),

101 Agencies who responded (48% of those approached) were supporting 2446 people with disabilities in jobs, 90.3% of whom were people with an intellectual disability. A benefit:cost analysis showed workers gained £2.47 for every £1 they lost in taking up employment, and taxpayers received 43p back in savings for each £1 invested. Taxpayer benefit:cost improved over time, recouping 54p for every £1 invested after 6 years. Again this represented a significant saving for taxpayers but not full cost-efficiency.

Beyer and Kilsby (1998) compared the benefit:cost of two types of supported employment schemes that worked with people with intellectual disability. For one agency, supported employees worked for an average of 7.9 hours per week whilst in the second scheme people worked an average of 28.6 hours per week. As a consequence of this, hourly costs of both schemes were significantly different at £22.15 and £2.84 respectively. The accumulated costs and benefits over that time led to benefit:cost ratios of 0.2 and 0.5 for the taxpayer perspective respectively. While there were taxpayer savings, clearly these did not reach a break-even point. Differences between the benefit:cost outcomes for the two agencies were due to differences in skilled job coach inputs and in particular the speed at which they could fade their input to clients. The authors suggest that five years of operation may be a necessary period of follow up before financial benefits outstrip the costs of support schemes to society become apparent.

In a review of cost benefit studies up until 1998, Cimera (1998) found that individuals with severe intellectual disabilities are cost-efficient for the taxpayer to serve via supported employment programmes in the long-term. He also found that, individual jobs in the community through supported employment were more cost-efficient compared to inclusive employment in groups (i.e. work crews) with job coach support.

A further review by Cimera (2000) identified 21 costs studies of supported employment, nine published since 1991, all relating primarily to people with learning disability. Again, he concluded that, at the individual level, the benefit:cost ratio is almost always positive, regardless of level of disability, although people with higher IQs seem to do better monetarily than those with lower IQs. At the taxpayer level the evidence was less clear and differed over time but Cimera estimates that by the fourth year, taxpayers achieve a net benefit.

Beyer (2008) carried out a study of North Lanarkshire Supported Employment (NLSE) agency since its inception. NLSE supported 119 people into jobs, of whom 93 were people with an intellectual disability. With an average number of hours worked per week of 22.1, the cost of NLSE per person was £7,216 per year based on an average of 122 people in work in 2007. The equivalent cost per person for Locality Support Services (a community day service) was £14,998 per year. Overall, government contribution through welfare benefits or tax credits fell by 12.1% as people with an intellectual disability entered paid work. NLSE achieved a benefit:cost ratio of 0.21 to the taxpayer, without including any cost of a day service cost relinquished to go into employment. A more comprehensive financial cost:benefit analysis, taking into account reduction in welfare benefit payments when in work, tax and National Insurance receipts, the costs of sustaining disabled people if NLSE did not exist, and the cost of displaced non-disabled workers in the labour market estimated that the cost to taxpayers for NLSE to be -£6,894 per year. Care is needed in interpreting this figure as there were some significant factors that could not be fully costed, but it indicates a likely saving is possible through investment in supported employment of this type in the UK if similar hours of employment can be achieved.

In a study of supported employment outcomes in New Zealand, Robinson and Bishop (2000) found that in every \$1.00 invested by the taxpayer they received \$0.97 back in taxes and other savings. They included a range of allowances for a proportion of non-disabled workers displaced by newly entering disabled workers. At the lower displacement rate there is a net benefit of \$5,344 to the taxpayer per supported worker. For every \$1.00 invested by the taxpayer they received \$1.22 back. These results are significantly better than those reported in the UK study and they can be attributed to the much higher proportion of fulltime job placements and the higher proportion of fully paid supported workers in the New Zealand case. Even with conservative assumptions about displacement of non-disabled workers in the labour market, supported employment services break-even from the taxpayer and society point of view, compared to the alternative of sheltered employment.

Beyer and Robinson (2009) in a review of the studies on supported employment for people with intellectual disabilities noted that benefit:cost ratios in the first few years tend to be

below 1.0, but there is evidence that programmes can achieve ratios of over 1.0 after four to five years of operation. Costs and benefits have to be looked at over longer periods than one year, and services need to become mature, to deliver their full potential in relation to benefits and costs, particularly for people with more complex disabilities, such as intellectual disabilities. The authors conclude that: *“Overall, the literature supports the view that supported employment is both worthwhile at an individual and societal level and that there is much that can be done to improve employment rates for people with learning disabilities. However, at present, funding arrangements and policies are not in place, as they are in some parts of America, to support a large scale increase in the numbers employed, nor to promote a move away from traditional day activities”* (Beyer and Robinson 2009; p80).

Cimera (2010b) has criticised local and State-wide studies cost-efficiency studies as being susceptible to variation due to differences in the arrangements for service costs and other payments. In an attempt to achieve a more standardised costing approach he studied all people with intellectual disabilities provided for by VR services across the US from 2002 to 2007. He analysed data on all 104,213 supported employees with intellectual disabilities with supported employment as a vocational goal on their Individual Plan for Employment (IPE), Cimera found that these workers generated a benefit–cost ratio of 1.21 from a taxpayer perspective. In other words, the average supported employee with intellectual disabilities served by vocational rehabilitation agencies returned \$1.21 of benefits (e.g., taxes paid and foregone program costs) to taxpayers for every \$1.00 of costs (e.g., supported employment operating costs, taxes lost due to TJTCs). This is a very significant study as it was carried out at such a large scale and over a significant time period. The positive implications for taxpayers investing in inclusive employment are clear.

4.3.1.1. Conclusions

The initial benefit:cost analysis for supported employment in inclusive jobs was positive but not unequivocal. In many cases benefit:cost ratios were under 1.0 showing that there were savings to the taxpayer from the programme but that savings did not fully exceed costs. There were also methodological issues that started to emerge that influenced the power of findings and led to significant variation in ratios. Assumptions about factors such as the proportion of

workers who would retain their jobs can influence the point at which a programme breaks even for taxpayers. Other factors, such as service payment levels and systems, welfare benefit payment eligibility and payment levels, and income tax arrangements can all change over time and geography, leading to variability in benefit:cost findings for similar programmes. Add to this the insight from some papers that job coach skill can directly influence speed of fading support from workers, cost of support per client, and net cost for taxpayers.

Set against these facts is the fact that significant numbers of people with disabilities have been found work in inclusive settings and at employment rates that are far higher than recent norms for these client groups. In these numbers, there will be significant variability in client characteristics within diagnostic groups, providing some reassurance that individualised placement approaches, such as supported employment, are resilient.

The use of in-house job coaches has been shown to be of interest in generating accelerated break even in net benefit to taxpayers. Care is needed in interpreting this result. The cost of provision from a taxpayer perspective is reduced as job coaching is picked up by the employer. There may be knock on effects from the employer perspective due to increased cost due to reduced supervisor time or reduced co-worker supervision.

4.3.2. Individual Placement with Support for people with psychosocial disabilities

A range of studies have shown that IPS is a successful strategy for getting people with long-term psychosocial disabilities into inclusive paid employment. A number of studies have examined the relative cost implications of this model. Along with the standard taxpayer cost elements such as programme costs, tax credits to employers, wage subsidies to workers and taxpayer savings, such as reduced welfare benefits paid and increased tax received, some studies have included the costs and savings in the areas of health and social care services. Acute and long-term community health, social care and housing support services make up significant proportions of the cost of supporting people with psychosocial disabilities.

Sciarappa et al. (1993) studied 19 people with psychosocial disabilities over a one-year participation in supported employment. A majority reported bi-polar disorder and use of

psychotic medication was common among the majority of the sample. Engagement in supported employment led to increased employment in inclusive jobs and decreased service use, including a reduction in use of supported housing. The final benefit:cost ratio was 0.89, repaying the taxpayer a significant proportion of their investment through reduced use of services, but not achieving a break-even point. The authors identified the small sample size as a weakness of the study.

Rogers et al. (1995) in a study of 20 people with psychiatric problems using IPS, found that the total units of service used by participants increased from 206 per client in the year prior to enrolment to 229 in the year after enrolment. The total cost of service use declined from \$11,160 to \$6,671, representing a savings to the system of \$4,489 per client. The bulk of this savings was achieved by a reduction in the use of inpatient care, crisis interventions, therapy and day treatment services, the total savings in the use of these services being \$3,693 per client. Another source of savings was a reduction in the use of supported residential, respite and case management services. Participants reduced their use of residential services by \$1,944 per client. The use of day treatment, vocational rehabilitation, work adjustment training, job placement and career development were substituted by the supported employment intervention. The use of supported education, transportation, social and recreational activities, advocacy and protection, and medical and dental care increased. The total cost associated with increased use of these services was \$1,224 per client. Overall, however, costs associated with the use of other psychosocial disability services were substantially reduced. Welfare benefits paid to participants declined from an average of \$11,647 to \$10,713 per client, representing a savings of \$933 per client. SSI, SSDI, General Relief, rent subsidies and other cash benefits all declined. The authors found a benefit:cost ratio for the programme of 0.89, approaching but not reaching full cost-efficiency.

Clark et al. (1998) measured costs and vocational outcomes at three time points between 1989-90 and 1993 as day programme sites were converted to inclusive employment through the use of an IPS model. The authors reported that converting from day treatment to supported employment improved vocational outcomes significantly without increasing costs. The reduction in day care costs were balanced by an increase in case management costs and, at one site, an increase in use of outpatient services. A significant drop in community support

costs after conversion to employment, suggesting that IPS was taking the place of other community psychosocial disability services. However, a general trend towards lower overall costs indicates that programme change was not the only causal factor. The authors concluded that employment opportunities can be improved significantly without increasing overall costs. As the day centres involved closed fully, there was a complete re-use of costs. Use of hospital and crisis intervention services remained relatively static, the conversion to paid employment having little effect on relapse rates.

Clark et al. (1998) used a New Hampshire study of IPS compared to a combination of pre-vocational training and supported employment after job placement (labelled group skills training (GST)) from the taxpayer and other perspectives. Staffing costs associated with supported accommodation were included. IPS generated greater taxpayer benefits than GST, but the differences in net benefits were not significantly different. Follow-up of a sample of 137 people from the study showed that welfare benefit receipt from the taxpayer increased over time, with little improvement in wages (and benefits to the taxpayer). The evidence from these studies suggested that people with psychosocial disabilities entering inclusive employment through supported employment make fewer demands on community health care provision while in that programme.

Latimer (2001) reviewed three randomized control trials and five non-randomised studies of supported employment for people with psychosocial disabilities. The studies compared supported employment with day centre or transitional employment services. Latimer reported that the introduction of supported employment, where it does not substitute for any existing services received, is likely to increase service costs. Conversion of day treatment or less effective vocational programs into supported employment may save costs or be cost-neutral from the hospital, community centre, and taxpayer perspectives. Latimer (2001) does conclude that investment of new money into supported employment programmes is unlikely to be fully offset by reductions in other health care costs, taxpayer welfare benefit payments, or by increased tax revenues. The author suggests that investments that do not outstrip savings should be pursued in terms of increasing social inclusion.

Bond et al. (2001) perform secondary analysis on data from the RCT of IPS conducted in

Washington, DC (Drake et al., 1999). This study is innovative in its attention to effect size, which is an important topic in studies of interventions where clinical significance and statistical significance are not always the same. The authors explore the non-vocational outcomes – self-esteem, quality of life and psychiatric symptoms, of four groups of service users who did: a substantial amount of competitive (inclusive) work; sheltered work; those who did a minimal amount of competitive work; and those who did none. Over 18 months, people in inclusive employment showed a greater improvement in psychiatric symptoms, as well as other broad quality of life outcomes, none of which showed any improvement in people who did sheltered work or a minimal amount of open work. The findings indicate that it is long-term employment, rather than a short exposure to employment, that has positive effects. Bond et al. (2001) also demonstrated that work did not appear to lead to deterioration in psychiatric symptoms, and for work in inclusive employment settings, that it could improve.

Dixon et al. (2002) compared IPS with a model of paid training in sheltered setting, enhanced vocational rehabilitation (EVR). The study calculated the increase in effectiveness provided by the models tested, divided by any increase in costs of models to create “incremental cost-effectiveness ratios” (ICERs). For the purposes of our review, the author concluded that *“it is statistically highly likely that IPS both costs more and produces more competitive employment”* (p 1123). This suggested that IPS was not technically cost-effective, but was the best option for achieving inclusive employment.

Schneider (2003) reviewed the cost-effectiveness of IPS and concluded that, by 2003, IPS had considerable evidence in its favour in terms of getting people with psychosocial disabilities into employment but that there was only limited evidence of its effects on symptoms and other non-vocational outcomes. Few studies of IPS had reported its immediate costs, and data on longer-term costs and benefits was even more limited. Schneider (2003) notes that people with psychosocial disabilities on average would have higher levels of cognitive functioning than people with intellectual and some other disabilities. However, people with fluctuating illness can incur *“support costs and experience variations in productivity in a way that does not affect most people with learning disability. These considerations make it practically impossible to draw inferences from cost effectiveness data dominated by people*

with other disabilities, unless the sample is so large that separate analyses by disability group may be reliable” (Schneider 2003).

Chalamat et al. (2005) carried out a study in Australia to estimate the net benefit of fully introducing IPS services into psychosocial disability services in Australia. The costs of IPS was calculated to be \$A10.3M, the benefits were \$A4.7M resulting in a net cost of \$A5.6M. The evidence from Chalamat et al. (2005) suggested that IPS costs were greater than monetary benefits. They conclude, however, the evidence-base of their analysis was weak and that structural conditions surrounding welfare benefit payments in Australia created disincentives to full-time employment for people with disabilities. The disincentives were primarily the difficulties faced by people who need to return to the welfare system after a period of employment due to experiencing relapse or health deterioration. In the Australian context, people in this situation have to repeatedly prove their need and eligibility to receive welfare benefits making it more likely they will continue to claim welfare benefits and not take the risk of entering employment through IPS, leading to lower engagement rates.

Cimera (2009a) in a national study of VR supported employment delivery from 2002 to 2006. While this study did not use a net benefit:cost framework where savings of employment were assessed, it did have a number of outcomes that are relevant to taxpayer costs and savings. Cimera found that there was only a 15.6% increase in costs of supported employment over 5 years, with little change in the demands of their populations. From the US VR perspective, the major issue is the 42% of the total population choosing supported employment that are unsuccessful in getting into employment (58% employed in this study). The average costs of unsuccessful placement in supported employment was \$5514, compared to those entering inclusive employment at \$3158. This represents a negative drain on the overall success of the VR programme, even though the cost of those entering employment through the programme appear to be cost-efficient. Further, the study identified differences in the cost of providing supported employment with different disabilities, ranging from \$3351 (psychosocial disabilities) to \$8023 (sensory disabilities). People with psychosocial disabilities had the lowest cost which is counter-intuitive but may reassure service providers that people with psychosocial disabilities can be successfully served within reasonable budget ranges. Again this is a national study that takes account of some of the criticism of smaller ad hoc studies

where methods and cost accounting varies significantly.

In a more specific study of people with psychosocial disabilities, Cimera (2009b) looked again at VR costs of supported employment provision to this group. Those served included people with anxiety disorders, depression and other mood disorders, eating disorders, personality disorders and schizophrenia. The study showed that people with psychosocial disabilities placed in inclusive jobs cost less to place than the general population of VR participants. General VR users cost \$2291 per person compared to a minimum of \$1564 for people with depression and a maximum of \$2177 for people with personality disorders. The author notes that over the period 2002 to 2006 nearly 75% of VR participants had their cases closed without obtaining employment, generating \$2.5 billion of costs without the prospect of a return to taxpayers. The author concludes that: *"The significance of this finding is obvious. If the rates of successful employment can be increased, not only will more individuals with disabilities be able to experience the benefits of working.....but the taxpayers will actualize increased monetary rewards for funding VR programs."* (Cimera 2009b; p 32)

In a study of work productivity and people with depression in Seoul involving 102 people Woo et al. (2007) compared lost productivity time (LPT) for the target group and a matched control group. They found that workers with major depressive disorders generated 34% of annual salary as a cost to employers compared to 2.5% of annual salary cost due to absenteeism or presenteeism (under productivity at work). In just 8 weeks of treatment, absenteeism and clinical symptoms of depression were significantly reduced and a generated a cost savings of \$7508 of salary per employee per year. We conclude from this paper that services which focus on effective retention in work at onset of depression can create savings for employers and retain experienced workers within the company.

In a randomized controlled trial across six European countries (Groningen (Netherlands), London (UK), Rimini (Italy), Sofia (Bulgaria), Ulm-Gunzburg (Germany), and Zurich (Switzerland), Knapp et al. (2013) investigated the economic case for IPS for people with severe psychosocial disabilities (schizophrenia and schizophrenia-like disorders, bipolar disorder, or depression with psychotic features) compared to standard vocational rehabilitation. Some 312 people were randomized to receive either IPS or standard vocational

services, and followed for 18 months. In the EQUALISE trial, cost-effectiveness analysis was calculated by identifying additional days worked in competitive (inclusive) work settings, and any additional percentage of individuals who worked at least one day. A partial benefit:cost analysis was conducted. IPS produced better outcomes than alternative vocational services at lower cost overall to the health and social care system. Individuals assigned to vocational services were significantly more likely to drop out of the service (45%) and to be readmitted to hospital (31%) than people in the IPS arm of the trial (13% and 20%, respectively). Averaged across sites, IPS services cost £4022 less than other vocational services. Total per person costs over 18 months (adjusted for baseline) were significantly lower — by about one-third — for the IPS group. This pattern also held in disaggregated analyses for five of the six European sites (the exception being Groningen). Adjusted inpatient costs over the first six months of the three-year period, were significantly lower for IPS than for the usual care group but becoming identical over the final six months. Outpatient service costs were greater for the IPS group over the final six-month follow-up period, but differences were small. At five sites where overall costs were lower, IPS dominated the control condition being both more effective and less costly. A regression method was used to adjust for baseline costs to be consistent with other analyses and found the difference in net benefit to be +£17,005 in favour of IPS. This benefit:cost analysis showed that IPS represented a more efficient use of resources than its comparator for taxpayers. The authors suggest that *“When public bodies seek to introduce policies to improve employment rates among people with mental health needs, they do not tend to devote much attention to people with the most severe needs”....and.... “IPS appears to provide an effective and cost-effective means of helping many people with a serious mental illness to come closer to achieving their employment goals”* (Knapp et al. 2013; p 67)

In another review paper, Dowler and Walls (2014) were able to examine the service costs for IPS, Diversified Placement Approaches (DPA) and *“traditional”* Vocational Rehabilitation approaches. She examined the costs of providing supported employment. The review identified five studies and Dowler and Walls (2014; p 19) concluded at this time that *“It is clear that supported employment works.”*

4.3.2.1. Conclusions

IPS appears to be an effective approach to getting people with severe psychosocial disabilities into paid employment. Where we have these benefit:cost ratios of IPS they are positive, the majority of studies showing significant savings to taxpayers from its implementation. The impact of IPS on symptoms of psychosocial disability, use of in- and out-patient health and social care services, housing, crisis intervention, case management and other services is less clear from the data. One positive factor is that IPS does not appear to make people's psychosocial disabilities worse, which is an important finding when we consider that many professionals still see employment as a psychosocial disability stressor rather than a stabilising factor in people's lives.

Some of the papers we have reviews looked at the benefits of intervention to help people stay in work and to regain productivity. While not strictly speaking studies of cost of helping people into work in inclusive jobs, the retention of employees of people with disabilities in existing jobs is also likely to save the taxpayer the cost of alternative segregated employment options and welfare benefits support, and employers any unnecessary recruitment costs to replace staff experiencing psychosocial disabilities.

There are other delivery factors involved in IPS that are important to note from a taxpayer perspective. Evidence based IPS calls for swift placement which will have an impact on overall cost of inputs. People with psychosocial disabilities may have worked before and have significant skills. They are generally likely to require less in-work support and task teaching than people with intellectual disabilities but more off-site support. Overall, we have seen that the costs of support into inclusive employment can vary markedly between people with different diagnoses. This will all impact on taxpayer costs and benefits.

4.3.3. Taxpayer outcomes for people with other disabilities

We have seen that there is a case for taxpayer benefit in employing people with common and complex disabilities, such as people with intellectual disabilities and people with psychosocial

disabilities in inclusive jobs. This benefit to tax payers appears to extend to people from other disabilities.

Broad groups of disabled people

The New Deal for Disabled People (NDDP) was a major UK Government employment programme available to people claiming Incapacity Benefit that sought to get them into inclusive paid employment. Incapacity Benefit was a general disability welfare benefit and therefore dealt with people with a wide range of disabilities and was a UK national programme. The programme was delivered locally by Job Brokers, who were a mixture of voluntary, public and private sector organisations. Job Brokers varied in size and in how they operated, most helping clients with their job search, to engage in job development, and an attempt to increase clients' confidence in their ability to work. Job Brokers received a payment from the Department for Work and Pensions for each client registered, that they place in an inclusive job, and for each client who continues to work for at least six months. Taking account of both reductions in Incapacity Benefit payments received by NDDP registrants and the cost of administering these benefits, NDDP was found to reduce the taxpayer's costs by around £2,500 for a typical disabled person registered and by about £800 to £1,100 for an average new claimant (Greenberg and Davis 2007). In terms of the costs of NDDP, this was a considerable saving for the taxpayer of between £3.41 and £4.50 for continuing claimants, and between £1.71 and £2.26 for new claimants, for every £1 spent. The conclusion that NDDP and inclusive employment is cost-beneficial for both groups of customers from the taxpayer's perspective appears to be highly robust. Separate benefit:cost analyses of large and small Job Brokers (i.e. those with more than and fewer than 900 registrants) found that the benefits to the taxpayer exceeded their costs for both groups of Job Brokers, these being far greater for the larger Job Brokers than for the smaller ones.

Bohman et al. (2011) reports on a study of the "*Working Well*" programme designed to determine whether a coordinated set of health benefits and employment supports could help low-income, working adults maintain their employment and remain independent of publicly funded disability assistance. Patients with chronic psychosocial, behavioural and physical health conditions from the Harris County Hospital District in Houston were randomized to the

intervention (N= 904) and control (N= 712) groups. The Working Well intervention included health navigation, employment/vocational supports, quicker appointments, free medications, and no payments for medical visits. No differences were found between the intervention and control groups in total hours worked, experience of unemployment, earnings or family income. The findings on health care utilization indicate that the intervention group (72%) was more likely than the control group (58%) to have had at least one outpatient visit and at least one visit from a psychosocial health professional (I=12% vs. C=6%) over the previous 6 months. There was also no difference between study groups for inpatient and emergency visits. In relation to reduced dependence on disability benefits, there was a statistically significant difference, with the intervention group receiving SSI or SSDI benefits less frequently than controls after intervention. The intervention group were more likely to submit medication prescriptions and were less likely to have a break in taking 2 of 11 medications recorded than controls. All these differences have cost implications for taxpayers. The study shows little impact on employment levels but better health engagement and reduced reliance on welfare benefits, which has a taxpayer implication.

Cornelius et al. (2014) highlight that numbers claiming general disability welfare benefits has increased substantially in the first half of the 21st century with matching increases in the personal costs, reduced quality of life, and in direct and indirect costs of payment of cash benefits and the economic costs of national productivity losses due to unemployment. In a study of 375 disability welfare benefit claimants in one area of the Netherlands, the authors found that claimants having paid work at baseline to had very high odds of being in paid work after one year. There may be an inter-correlation with degree of disability, with people with lower levels of sickness or disability being more likely to be in work in the first place and more likely to recover. However, the authors underline that the findings illustrate the *“importance to return to work as early as possible, preferably before disability benefit is claimed”* (Cornelius et al. 2014; p 688). This finding has clear relevance to taxpayer savings through reduced welfare benefit payments.

People with multiple disabilities

People with intellectual disabilities who have additional and additional multiple disabilities

also seem to be cost-efficient to serve in inclusive workplaces with support. Cimera (1998) reported that the people described as having multiple disabilities (e.g. Psychosocial disabilities, autism, physical impairments, behavioural disorders, communication disorders and sensory impairments) within his sample of 166 people were cost-efficient for taxpayers to place in inclusive jobs via supported employment. In this study over two years the author found 110 people in 1990 and 57 people in 1994 with this description and reported that *“all individuals, regardless of severity or number of disabilities were cost-efficient to serve via supported employment”* (Cimera 1998; p 291).

Autism/ASD

A number of studies have found inclusive employment to be beneficial to taxpayers for people with Autism or Autistic Spectrum Disorders. Here, as in studies of people with psychosocial disabilities, there is the potential to include taxpayer savings from health and social care savings, also relevant to the taxpayer case). In an early study of UK societal benefit:costs of employment for people with ASD, Järbrink et al. (2001) estimated that 5 per 10,000 people experienced ASD, and that annual UK societal costs were greater than £1 billion, with a lifetime cost greater than £2.4 million. The total lifetime cost of placing an adult with ASD in sheltered employment was 8.6% of the total cost of support. The authors highlighted the cost to society of paying for a sheltered workshop place and highlight the possibility for saving UK taxpayers a significant amount over a person’s lifetime through the use of inclusive employment would save.

In a UK study, Howlin et al. (2005) carried out an 8-year study of a small specialised supported employment service that found inclusive jobs through supported employment for 192 people with high functioning Autism or Asperger Syndrome. Primarily funded through the UK Department of Work, national Access to Work funding and Work Preparation contracts (since defunct), with some charitable and local funds added in, the results are of interest to taxpayer perspective. Howlin et al. (2005) showed that, over the period 2000 to 2003 a total budget of £673,781 was spent on providing inclusive employment, with a reduction through taxes paid and welfare benefit of £494,686 resulting in a net cost of £179,095 for 114 jobs. This is a

reduction of 73.4% in total costs (my calculation). These figures did not account for reductions (if any) in the use of other services.

Building on the results from Howlin (2005), the UK's National Audit Office (NAO) (2009) explored the possible impacts of providing more widely available specialised support for people with ASD in England. NAO estimated that if services identified and supported 4% or more adults with high functioning autism into inclusive employment in their local area they could become cost-neutral in time. Identifying 6%, they estimated, could lead to potential savings of £38 million per year, and if 8% of this group were identified and served then annual savings could reach as much as £67 million. Townsley et al. (2014) notes how important it is for employment support providers to identify people with ASD and tailor their service offer to suit this group accordingly.

Cimera and Cowan (2009) carried out a study of VR funded supported employment for people with Autism from 2002 to 2006. Within the VR registers for these years, 11,569 people were diagnosed as having autism (including Autism Spectrum Disorders). They found that the cost of these clients to VR averaged \$3213 per year and were the most costly to serve apart from people with sensory disabilities who cost \$4210. When costs were considered in the context of wages earned and hours worked per week, people with Autism were one of the most costly groups examined. Jacob et al. (2015) noted that, while ASD was one of the most expensive groups served by US VR services, it was more efficient for adults with ASD to be provided with VR services and become employed, rather than compounding an already significant cost of care services. People with ASD do have a strong chance of becoming employed if they receive appropriate supports and the investment in these supports is a worthwhile investment potential for taxpayer funded vocational rehabilitation services.

Mavranouzouli et al. (2014) used a decision-analytic economic model to compare the costs of normal day care against getting a job, basing their data on a studies by Mawhood and Howlin (1999) and Howlin et al. (2005). They provided a basic comparison between supported employment and day centre performance in delivering employment and costs. The authors considered potential residential savings and other NHS and PSS costs, including psychosocial disability care costs, other primary and secondary care costs and local authority costs. Their

results show that, using an incremental cost-effectiveness ratio (ICER), the ICER of supported employment versus standard care is a cost of £18 per extra week in employment and £5600 per quality adjusted life year (QALY). The authors used published criteria from the UK's National Institute for Clinical Excellence for the cost of quality of life difference (which was between £20,000–£30,000 per QALY) to show that the study cost was well within the cost-effectiveness guidance. In both of her secondary analyses, supported employment was more effective, and overall less costly, than standard care as intervention costs were more than offset by residential cost-savings.

Ganz (2007) explored direct medical, direct non-medical, and indirect costs from a society perspective for supporting adults with ASD. The cost of low levels of employment are an important part of this cost. Using a hypothetical ASD cohort, the study defined costs over a lifetime of ASD and age specific costs. The lifetime societal cost of ASD was estimated at \$3.2 million per person. Lost productivity and adult care were the largest contributors to these costs. Employing people with ASD would significantly reduce the lifetime cost of ASD removing lost productivity. In addition, employing people with ASD would decrease expenditure on adult care or daily activities, ultimately reducing costs to society.

In a study of ASD in four communities in Sweden, Järbrink et al. (2007) assessed the percentage of total support costs accruing from difference service types. The distribution of total costs was: employment support (4.0%); community support (22.6%); daily activities (20.9%). The results suggest that if more people with individuals were employed, taxpayer costs would be reduced through reductions in the costs of daily activities and carers.

Knapp et al. (2009) estimated the economic impact of ASD in the UK and found the mean annual costs for an adult with ASD alone and with additional disabilities was significant. The aggregate national cost to the UK taxpayer was £25 billion compared to the cost for people with intellectual disabilities of £17 billion. Taxpayer funded services accounted for 59% of the total, lost paid employment was 36% and family expenses 5%. The research notes that the greatest part of costs were due to lost employment and lost productivity, when it is clear that people could be inclusively employed and contributing to society and to taxpayer income.

Traumatic Brain Injury

Wehman et al. (2003) have explored the cost-efficiency of supported employment for people with traumatic brain injury. The study involved 59 people employed in inclusive jobs over the period 1989 to 1999 with 71.4% finding employment. The client group was small with only 1.7% of supported employees in 1995 having a TBI diagnosis (Wehman, Grant and Kregel 1998). The mean cost of supported employment input was \$8614 (compared to all employment service mean costs of \$10,350) or a monthly programme cost of \$202. Taxpayer costs for those employed for under 2 years were significantly higher (\$1304) than for those employed for over 2 years (\$156). The authors concluded that *“The results of our investigation provide additional support for the conclusion that supported employment is cost effective for individuals with disabilities, including individuals with TBI, and that the costs of supported employment decrease over time”* (Wehman et al. 2003; p 194). The authors note that their results were only preliminary and were not fully representative of the full range of costs that may be involved in supported employment services. Their analysis did not include the costs of assistive devices or other accommodations that might be needed in a job placement. Any costs (or savings) incurred through input of medical, psychiatric, and other rehabilitation professionals, such as physical or speech therapists, were also not included in the study.

Physical Disabilities

Verhoef et al. (2013) found that it was feasible to implement a 1-year multidisciplinary intervention to improve the work participation of young adults with physical disabilities in an outpatient rehabilitation clinic for young adults. The intervention involved the convergence of rehabilitation and job coaching, providing suitable employment positions and on-the-job training. The authors found a total median cost of €3128 per participant for the first year, and median additional costs of €1380 until the 2-year follow-up. These were lower than the standard amount for an individual unemployment assistance/ benefit contract of €5000 and were considered reasonable costs and a saving to taxpayers. As participants were young, the financial benefits of paid employment were thought to have long-lasting effects, thereby decreasing the financial costs for the taxpayer. Preliminary results showed that work participation improved substantially after the intervention. In the absence of a control group, the study didn't establish if work participation would have developed without the

intervention, considering that young adults might be expected to gain employment as an age-appropriate transition.

Injuries and return to work studies

There are a range of international studies looking at “Return to Work” assistance for people who become long-term sick or disabled as an adult. In a national Finnish study of 10,269 people with disabilities, Laaksonen and Gould (2015) found that cumulatively over 4 years, 25% returned to work. However, rates of return differed with diagnosis. Return rates in this study were commonly higher among those people being employed before gaining temporary disability benefits and among the 9 % who participated in vocational rehabilitation during their pension period with results being similar for all diagnostic causes of temporary disability pension. This suggests that there are solid prospects for job retention or support for return to work, with potential savings for taxpayers through reduced claiming of disability benefit payments.

In a study of a “Return-to-Work” (RTW) programme in Malaysia from 2010-2013 involving 5656 employees by Awang et al. (2015) a number of people with different injuries were involved: disease/illness; lower limbs; upper limbs; general injuries/unspecified multiple location of injury. Awang et al. (2015) note that in the long-term the financial returns that can be delivered to taxpayers by injured workers who have successfully returned to work outweighs the costs of the RTW programme. These factors flowed from injured workers going back to employment ensuring their continued contribution to the social security system (e.g. paying taxes), improvement in health condition, and pain tolerance as well as a reduction in depression, anxiety and stress. Having injured workers return to work extends benefits to employers in terms of *“regaining productivity loss, reducing work pressure of colleagues at work, and costs of new recruitment”* (Awang et al. 2015; p 1132).

4.3.3.1. Conclusions

Our review of intervention with people with multiple disabilities or disabilities other than intellectual disabilities or psychosocial disabilities appears to support that a wide range of disabilities can be catered for in inclusive employment. There are more studies of people with

ASD and these are positive, suggesting that there is taxpayer benefit from people going into employment in inclusive settings. One of the key issues relating to employment being in inclusive workplaces is the transitional nature of the support people receive to get into work. Personalised approaches, such as supported employment, reduce the intensity of their input to workers over time, leading to reduced costs per person over time. Studies comparing sheltered work⁸ and employment in ordinary workplace does show that sheltered work does tend to have higher costs to taxpayers because the costs are constant, with little prospect of reduction of costs per person over time. For some people with disabilities, a more general “return to work” strategy is powerful enough to get people back to their ordinary workplaces after injury or illness and savings in reduced welfare benefit are enough to make the interventions viable.

4.4. Cost comparisons with sheltered and enterprise models⁸

As many of the cost studies carried out have been in the US, the dominant model of sheltered employment was sheltered workshops. These have been criticised as being segregated, paying sub-minimum wage and having limited transition to inclusive employment (Hoffman 2013). However, in the E.U. there is a history of a wider number of sheltered employment models (Samoy, 1992). There are a range of special employment programmes available across Europe, ranging from subsidised employment in inclusive settings to completely segregated forms of sheltered workshops and vocational activity centres. Many may be described within States as forms of sheltered or supported employment (to be distinguished from job coach supported employment or IPS). Wage subsidies are, or have been made available to employers for employing people with disabilities in Austria, Denmark, France Norway, and Sweden. Arrangements can vary significantly from full wage payment to staged subsidy based on assessed level of disability. Arrangements can, in rare cases be permanent, but in others it can be temporary.

⁸ Please see our previous discussion of the nature of sheltered work in the studies we have reviewed, in the context of a wider set of descriptions of sheltered employment across Europe, in Section 4.4, page 25.

Another form of sheltered employment can be protected status within an ordinary company (OECD 2003). Quota systems, where people with disabilities can be declared eligible to meet the percentage of disabled people an employer of a particular size has to employ, are a version of this. People entering quotas can have enhanced employment rights, making them difficult to terminate or make redundant although a number of reports have drawn attention to the lack of legal enforcement of quota systems by governments, or use of employer levies instead of taking workers, that can undermine their effectiveness as a sheltered employment options

There are forms of special businesses for people with disabilities operating in parts of Europe. There are a baffling array of social economy enterprises in Europe that play a role in vocational rehabilitation or the employment of people with disabilities and again, might be described in some senses as sheltered arrangements. When well established, they are largely run along democratic lines, have profit sharing arrangements and non-for-profit re-investment strategies and have strong social goals. Descriptions vary: social firms, social enterprises, co-operatives. In terms of engaging people with disabilities, there is a strong tradition of Italian co-operatives engaging people with psychosocial disabilities. In Spain there are strong traditions of social enterprise involving initially people with visual impairments but now more widely people with disabilities. In the UK people with intellectual disabilities are involved in social enterprise and social firms. While wages and employment conditions are regulated in some States, the extent to which full wages are earned across the who of the sector is variable.

Most OECD countries have offered forms special employment in sheltered workshops. The Netherlands and Poland offer significant levels of provision in a protected workshop labour market. Many offer training to take up positions within the workshop, others training for further progression. Samoy and Waterplas (1997) have drawn distinctions between sheltered workshop models, some delivering productive work, contracts and wages, while others offer occupation, a therapeutic environment, no contract and only perhaps a financial top-up to any welfare benefits they receive. Some have outreach programmes of varying types that enable this progression into the inclusive labour market. There are of course arrangements where people progress from sheltered to the “open” or un-subsidised labour market. Indeed,

in the Netherlands, Sweden, Norway and Finland, among other countries, funding of sheltered workshops has been linked to specific targets for moving specified percentage of workers with disabilities to more open forms of employment annually. However, with accepted low rates of employment for people with disabilities in Europe, there appears to be no major, successful pathway from sheltered arrangements to inclusive employment.

Lewis, Johnson, Bruininks, Kallsen and Guillery (1992) reported on the application of a benefit:cost accounting framework to evaluate supported employment in eleven agencies in Minnesota serving 1,892 individuals. These agencies were offering different forms of day provision categorised as either habilitation training, on-site employment, community based group or individual supported employment. Cost: benefit comparisons were made between all the programmes within each agency and, in each case, the least restrictive job setting was compared with a more restrictive environment. Consumers gained financially from supported rather than workshop based employment in the majority of cases. In 23 out of 28 comparative cases, individual supported employment showed greater net benefit at the society level, than all other training and employment options. Selected comparisons show supported employment to compare favourably at the society level with: vocational habilitation (\$2 returned on \$1 spent on supported employment); on-site employment (\$1.30-\$4 for \$1 spent on supported employment). Further, Lewis, Johnson and Mangan (1997) report that, using the same data, group supported employment cost \$753 less and that wages were \$155 higher per person than in sheltered employment. The costs of individual supported employment was \$1480 less and wages \$2691 higher than in sheltered employment and that benefit:cost ratios were 1.44 for group supported employment and 4.01 for individual supported employment.

A follow-up study (McCaughrin et al. 1993) demonstrated that supported employment schemes were fully cost-effective for both the individual and for society as a whole when viewed from a longer perspective, with savings exceeding costs. After one year from the standpoint of the individual, the scheme represented a benefit as earnings increased by a mean of \$1,027 for those with severe intellectual disabilities and \$4,607 for those with mild intellectual disabilities. This trend continued over the following five years. For society, the benefit at the first year was again negative; -\$5,099 and -\$766 respectively for severe and mild intellectual disability. The first year absorbed the majority of the costs per client due to

the transfer process from sheltered to supported employment. In the following years the net cost progressively fell so that by year five, the benefits outstripped costs. The authors carried out a further cost-effectiveness analysis of this cohort and considered various quality of life indices (integration, co-worker involvement, loneliness and quality of life) as a function of cost. Supported employment was significantly more cost-effective for all indices and for all levels of learning disability when compared with alternative sheltered settings, supported employment providing higher level of outcome per \$1 spent than the alternative.

Cimera (1998) looked at the cost-efficiency of supported employment compared to sheltered workshops by people's IQ, level of learning disability, multiple disabilities and other characteristics. The three perspectives of person, taxpayer and society were adopted. He found that regardless of the severity or number of disabilities all individuals were cost-efficient from each perspective compared to sheltered workshop. Cimera found that, from the taxpayer and society perspectives, people with a severe learning disability are just as likely to be cost-efficient to provide supported employment to as people with a mild learning disability. Supported employees with high IQs benefited more as individuals from supported employment in the community than people with lower IQs.

Lam (1986) is still one of the few studies that found similar, or on some measures better, results for sheltered workshops than community jobs through supported employment. Lam (1986) explored the outcomes achieved for workers with developmental disabilities, 50 in supported employment in inclusive work places and 50 in sheltered workshops. The costs for the two groups were \$26,059 for those people in supported employment compared \$28,935 for those in sheltered workshops.

Beyer, Thomas and Thornton (2002) in a study of the UK Supported Employment Programme (SEP), a pre-cursor programme to the current WORK CHOICE programme, found better benefit:cost outcomes for community (inclusive) placement than for sheltered factories. Thirty-eight percent of the people served had an intellectual disability. The average gross cost per disabled worker per year was £12,164 for Remploy factories, £9,390 for Local Authority (LA) and Voluntary Body (VB) factories, and £4625 for LA, VB and Remploy Interwork community job placements. These costs increased when in-work welfare benefits and the

cost of displacing people elsewhere in the labour market were taken into account. However, when flow-backs from the tax and NI paid by disabled people and VAT on spending were taken into account, returns of 46p for Remploy factories, 32p for LA/VB factories and 64p for community placements, were found for each £1 spent on jobs. When the cost of supporting disabled people outside of the SEP were taken into account, the net cost of SEP fell significantly, net costs being £1821 for Remploy factories, £1872 for LA and VB factories, and -£2925 for LA, VB and Remploy inclusive employment placements, the latter representing a net gain for the exchequer with flow-backs exceeding costs.

Lee et al. (2003), in an article describing the benefit:cost analysis of a supported employment program in Korea found that programme costs associated with 66 participants analysed in a benefit:cost model indicated that the programme and its participants yielded a positive benefit from the society and employer perspectives. The cost-benefit ratio for the three years from the taxpayer perspective was 0.72 based on the analysis that the input cost of the program is compared with the sum of employees' taxes paid, program fees, and the savings of alternative program costs. The benefit:cost ratio increased annually from 0.54 in 1996, 0.72 in 1997, and 0.93 in 1998. The costs of the supported employment programme were decreasing over time, while saving by not using the alternative sheltered work programme were increasing. This resulted in a net benefit increase over time.

Cimera (2007b) investigated the cost of supported employment in Wisconsin 2002-2005. A significant finding was that conclusion is that, despite people with the most severe disabilities having greater costs than people with mild disabilities, overall the severity of people's disability did not significantly influence the costs unduly. *"At the widest point of disparity (i.e., FY 2005), individuals with more significant disabilities were only \$736 more expensive to serve per year than their less disabled peers (i.e., \$61 per month). Conversely, in FY 2003, they were actually \$438 cheaper (i.e., \$36.50 per month)"* (Cimera, 2007b; p 100).

The fact that supported employees with more severe disabilities experienced comparable costs to VR as supported employees with milder disabilities was an important finding in the context of a debate on whether people with higher support needs also be offered support to enter inclusive employment.

Cimera (2007b) investigated the cumulative costs generated by supported and sheltered employees with intellectual disabilities from the moment they entered their respective programmes to when they exited or stopped receiving services. Data was for VR, Department of Mental Health, Department of Mental Retardation and Developmental Disabilities and any other equivalent services funding employment. Data indicate that supported employees acquired services cost a cumulative total of \$6,619 over 5.98 fiscal quarters or a per fiscal quarter cost of \$1,107. In comparison, sheltered employees acquired services costing funding sources a total of \$19,388 over 6.22 fiscal quarters or a cost per fiscal quarter cost of \$3,117, with a benefit to the taxpayer coming from supported employment and inclusive employment. Further, Cimera (2008) identified that, while monthly costs of delivering supported employment were similar for supported employment and sheltered employment, cumulative costs of supported employment was about a third of that of sheltered employment and over the longer term they fell to \$0 as sheltered employment increased. The other interesting finding from this work was that costs generated were uneven over time. 11.8% of total costs occurred within the first three months of working with clients and then decreased over time with only 1.1% of total costs occurring during the last three months of engagement. This is clearly the driver for costs being lower in supported employment compared to sheltered employment. Workshop costs tend to be static, with similar staffing and production costs over time, while workplace placement and on-site training and fading of support is intensive in hours for supported employment, falling as people become independent and just need intermittent monitoring later on.

In a study of 112 service users of State funded supported employment and sheltered employment services, Cimera (2011a) identified a sample of 20 people using both services and 46 users of each service matched by a salient set of characteristics. He compared the average cost of providing sheltered and supported employment and found supported employment had a lower cost at \$496 per month compared to \$602 for sheltered work, representing a lower cost to taxpayers per job. In comparing the situation of the people who used both supported employment and sheltered workshops, these people were more cost-effective for taxpayers when served in community-based settings.

In a further study of people with intellectual disabilities only, Cimera (2011b) created a

comparison group of 4,904 employees in sheltered workshops and 4,904 supported employees that were not in sheltered workshops. Those in the non-sheltered group were just as likely to enter employment as the sheltered group and cost less to provide a service to at \$4,542.65 compared to \$7,894.63 for workshops. The fact that earnings in inclusive jobs were higher than in sheltered jobs is indicative that inclusive jobs were beneficial to the taxpayer through lower basic costs and the prospect of higher taxes paid from higher earned income.

Overall income is important, particularly for people with more complex needs, as with people with intellectual disabilities. Without adequate income, economic self-sufficiency through employment alone remains an unattainable goal. Recent research continues to indicate that workers with intellectual and developmental disabilities employed in the community typically earn wages near the national minimum and work about 20 hours per week on average (Cimera, 2010b; Cimera & Burgess, 2011), resulting in an income that can be below the national poverty criteria. In a recent review of research, Cimera (2012) has demonstrated that extensive research has been conducted since the 1980s that has found people with disabilities in general, and people with intellectual and developmental disabilities specifically, benefited more financially by working in their inclusive jobs rather than working in sheltered workshops. Being able to earn at above the poverty line ensures that inclusive employment is viable for the Intellectual disability group and that taxpayer benefit can be gained by supporting them into inclusive paid work.

Cimera, Wehman, West and Burgess (2011) conducted a study of people with ASD who attended sheltered workshops before entering supported employment programs, to determine if they had better outcomes than those who did not receive sheltered employment services. This study found no differences between these groups for employment rates. Adults previously in sheltered workshops received lower wages (US\$129.36 compared to US\$191.42 per week), and were more expensive to serve (US\$6,065.08 compared to US\$2,440.60), compared with the group who had not been in sheltered workshops prior to supported employment. This study concluded that individuals with ASD had better vocational outcomes if they did not enroll in sheltered workshops before entering supported employment. This showed that vocational rehabilitation costs for individuals with ASD in sheltered employment prior to participating in supported employment were greater when compared to adults with

ASD who only participated in supported employment.

4.4.1.1. Conclusions

When looking across a variety of studies, supported employment was most commonly found to out-perform vocational habilitation, on-site employment and sheltered employment and was fully cost-efficient. There is some evidence that there is little difference in cost-efficiency of supported employment for people with different severity of disability. Cumulative cost studies appear to show supported employment, and jobs in inclusive settings, reduce in cost over time while costs in sheltered workshops do not. This appears to be an important driver for the positive benefit:cost ratios we are seeing around inclusive jobs. There also appear to be positive benefits for taxpayers when people go straight from education to inclusive employment rather than progressing through sheltered jobs first.

4.5 Public authority perspective

The benefits and costs derived in analysis for municipalities are somewhat different from State taxpayer level considerations. Costs of employment support services, of social care services, other services or benefits (e.g. such as housing benefit which tops up rents for poor people in the UK) offered through municipality level funding are relevant. Savings are, however, through reductions in any residual services being received after entry to employment. Increases in taxes taken from income and reductions in welfare benefits do not accrue to municipalities as they are State level funding. There are a limited number of cost studies using this municipality perspective.

Seebohm and Beyer (2003) carried out a benefit:cost assessment of a range of social firms, day centres and supported employment for people with learning disabilities across 3 areas. From a municipality (local authority) perspective, all social enterprises had a smaller net cost than their gross cost. However, in the situation where the social enterprises exist the return on each £1 cost per disabled worker varied significantly with degree of social enterprise development (4.2p per £1 per disabled worker in Site 1; 23.4p in Site 2; 54.0p in Site 3). From

a taxpayer perspective social enterprises at Sites 1 and 3 had a lower net cost than gross cost, with the Site 2 having a higher net cost than gross cost. Returns on £1 cost to the taxpayer again varied significantly with degree of social enterprise development (0.5p per £1 per disabled worker in Site 1; 3.3p in Site 2; 50.8p in Site 3). Social enterprises appeared to have lower net costs than local authority day centres from the public authority perspective. The Site 3 enterprise had a higher cost than its Clubhouse⁹ comparison, but with lower Clubhouse costs coming from input of charitable income. Supported employment appeared to have greater potential for lower net cost than social enterprises and day centres, where there were a significant proportion of paid jobs being supported. This illustration generated a net saving from the local authority perspective from Site 2 (-£796 per disabled worker) and Site 3 (-£1186). Benefit:cost ratios for supported employment ranged from 0.01 for Site 1 to 0.24 for Sites 2 and 3.

In the UK, Greig et al. (2014) gathered data for 70 services from a total of 43 local authority areas, of which 32 were for services focused primarily on people with learning disabilities. They found an average of 137 people supported at a cost of £217,047 per service, £1,948 per person supported from local authority sources. The authors point out that *“these averageshide a significant range of data for each measure. For example, the range of costs per person supported is from £165 to £10,000”* (p.37). They concluded that *“for every 100 people who received support from an employment support service provider: 23 would gain a new job, 14 would retain a job and 1 would become self-employed”* (p.38) with costs ranging between £208 and £57,640¹⁰ per paid job outcome. For those sites they considered to be following *“best practice”*, the range was much smaller; £366 to £2,281 cost per person served (not all people were found jobs), with an average of £1,170; £870 to £4,908 per job found, with an average of £2,818. The interesting feature of this study was the huge range of costs of similar employment services found across local authorities, indicating that the organisation and delivery of employment was inconsistent.

⁹ For more information on Club House Employment Models see <http://www.iccd.org/history.html>

¹⁰ It was an industrial therapy unit working with a very large number of people on a ‘train and place’ model that had the cost per job outcome of £57,640.

Kilsby and Beyer (2010) conducted a three-phase, financial benefit:cost analysis specific to supported employment for people primarily with intellectual disabilities provided by Kent Supported Employment Agency (KSE). An estimated cost of segregated local day services (updated for inflation) provided a yearly cost per person of £12,792, for the period April 2010 to March 2011, compared to a cost of £7,811 per year per supported employee. This represents a potential saving to the LA of £4,981 per person through helping people into paid work. A more conservative estimate, based on the months the supported employees actually spent in employment, place the cost of KSE at £10,252 pp pa, still a potential saving of £2,540. From the taxpayer perspective, using only relevant costs and savings, KSE provides a net saving of £1,121 per person to the government. The authors also found that the amount saved would increase over time given the appropriate investment and that better outcomes are related to greater numbers of people working over 16 hours per week, with increased take up of tax credit and tax/National Insurance flowbacks to the taxpayer as a result of being in paid employment.

4.5.1. Conclusions

There are relatively few studies of employment support from the local authority perspective. In the studies reported here, there was considerable variability in costs and net costs. This may be a feature of a lack of consistent definitions and organisation of employment support at this level. If cost savings are to be generated by local authorities through delivering employment the main factors appear to be moving people from more costly day activity, vocational training centres or in social care or case management services to more personalized support models, such as supported employment. If there is no substitution of services, there are not likely to be savings as welfare benefit and tax changes accrue at State level.

4.6. Methodological issues impacting on net costs

Cimera (2012) notes that in many of the studies he has reviewed from proceeding years, including the national studies of costs from services funded by VR, any costs from “follow-

along services”, funded by other sources such as local MRDD, are not included in calculations. However, he argues persuasively that VR tends to fund the early, most expensive elements of the supported employment cycle such as vocational assessment, job development, and initial work-based training. If supported employment and inclusive jobs are cost-efficient from the taxpayers’ perspective during this most expensive period *“it must also be cost-efficient if all other, less costly, services were included within the analyses”* Cimera 2012; p 112).

“Natural supports” involves the engagement of the co-workers of people with disabilities either to assist in training those people’s jobs, helping job coaches to fade their involvement, or playing supportive or mentoring roles to help people maintain their employment over time. In an early correlation study, Cimera (2001) found that utilizing co-workers did not increase the cost efficiency of supported employment from the taxpayer’s perspective. People using co-workers kept their jobs for an average of 12.36 months longer than if training was done by the job coach only. However, the use of natural supports did not affect *“job retention”*, defined as staying on the job for four years. The mean length of employment for employees trained by natural supports was 3.7 years compared to 2 years for those trained by job coaches. An increase in time on the job can provide significant cost savings when co-workers train employees with disabilities. Further, Cimera (2007c) investigated four supported employment agencies using natural supports as part of an organised initiative where job coaches faded their support from employees with disabilities using approved natural supports strategies and funding was paid back contingent upon this. These agencies reduced the cost to taxpayers of training their supported employees by 57.6%.

The concept of employers making *“reasonable accommodations”* or *“reasonable adjustments”* to the workplace environment or work processes is an important concept enshrined in equality legislation for a number of States. In E.U. legislation reasonable accommodation¹¹ is included in Article 5 of the Employment Equality Directive. It requires employers to take measures to enable disabled people to participate in employment. This requirement is bounded, in that any measures should not impose a *“disproportionate*

¹¹ An accommodation means that *“...effective and practical measures to adapt the workplace to the disability, for example adapting the premises and equipment, patterns of working time, the distribution of tasks or the provision of training or integration resources.”* Recital 20; The Employment Equality Directive.

burden” on the employer. In a recent study Chow, Croft and Cichocki (2015) examined the cost-savings of job accommodations for 1654 people with severe and persistent psychosocial disabilities compared to people not receiving accommodations. Accommodations included changes to the workplace physical environment, special equipment, use of job coaches, job modifications, training co-workers, changes in workplace absences rules and breaks. Savings were in SSI payments, mainly through employees working greater hours and receiving greater pay through having accommodations. Those receiving help with accommodations worked 7.87 hours more per month than comparisons yielding an added \$11.73 of SSI savings, and therefore taxpayer savings, over and above non-accommodations controls. These savings were achieved despite of the accommodations group having more symptoms and more often worked in areas with higher levels of unemployment than comparisons. Radford et al. (2013) also reported that work accommodations coordinated by case managers increased return to work when compared with the traditional care of persons with physical and cognitive disabilities (traumatic brain injury), showed that work accommodations reduced high indirect costs and found that vocational rehabilitation was less expensive than traditional care. Both studies suggest that work accommodations can reduce a range of taxpayer costs.

Burns et al. (2015) tested a time-limited¹² version of IPS in Oxfordshire UK, in an attempt to reduce taxpayer cost without reducing employment outcomes with a group of people with psychosocial disabilities. The authors used random allocation to assign people to an IPS-LITE intervention and an IPS control group. A total of 123 people were recruited. In both the median time to first job and the median duration of employment, the IPS group scored marginally better but in none was the difference statistically significant. Only 11 participants obtained employment after 9 months (4 in IPS-LITE and 7 in IPS). There were no significant differences in the clinical or social outcomes between the two groups with a total of 22 patients being admitted to hospital (10 to IPS-LITE and 12 to IPS) during the 18-month follow-up. There were no significant clinical differences between the two groups. Based on the trial's percentage employed data (IPS-LITE = 41%, IPS = 46%), two IPS-LITE workers would place 35.81 patients back into employment and two IPS workers 30.64 patients, a 17% increase in efficiency through IPS-LITE.

¹² Classic IPS is not time limited in its intervention.

The welfare benefit system, and how it manages transition of people with disabilities from welfare to paid work, determines to some extent the level of taxpayer benefit. In the US, a number of employment incentives exist, including Plans for Achieving Self-Support, Impairment Related Work Expenses, Medicaid Buy-In, and the Ticket-to-Work program. These approaches provide opportunities to work, earn paid income while managing how higher earnings impact on welfare benefit eligibility. Use of welfare benefits counselling has been found to be an effective strategy leading to better employment outcomes, including higher earnings (Delin, Hartman and Sell 2012; Gruman, Shugrue, Kellett, Robinson and Porter 2010; Livermore 2011). Benefits counselling impacts on taxpayer benefit from employment in the same way as workplace accommodations by increasing income, thereby reducing receipt of any in-work welfare benefits and increasing income tax payments.

For example, after studying the results of work incentives counselling activities in Wisconsin, Delin, Hartman, and Sell (2012) concluded: *“To the extent that the public and policymakers are interested in encouraging fuller labor market inclusion for those with severe disabilities...the continuation, and indeed expansion, of work incentive benefits counselling services appears to us to provide an effective policy tool for helping to achieve that goal”* (p. 106). The authors analyzed the activities of two recent return-to-work demonstrations that focused on the effect of work incentives counselling on beneficiary employment outcomes. Results indicated that the receipt of work incentives counselling services improved beneficiaries' likelihood of employment and monthly earnings. Significantly, the authors found that *“receiving higher dosages (more hours) of work incentive counseling services”* leads to better employment outcomes.

First placement into inclusive workplaces also seems to have a beneficial result on taxpayer costs. Cimera (2011b) found that, for a matched sample of 9808 people with intellectual disabilities, those who went straight into inclusive employment through supported employment received higher wages and cost taxpayers 42.5% less than their sheltered workshop matched comparators. This result was echoed in a study of 430 people with Autistic Spectrum Disorders where those entering inclusive jobs through supported employment cost the taxpayer 59.8% less than similar comparators in sheltered workshops (Cimera et al.

2011).

4.6.1. Conclusions

There are some technical issues relating to cost studies of inclusive employment that impact on estimates of benefits and costs. There are also additional approaches which when applied together with an effective support model can increase cost-efficiency of programmes. Greater involvement of co-workers in training and support roles; direct entry to inclusive employment with support from education, making accommodations in workplace rules and procedures; changing some aspects of models, such as the time limited nature of IPS can all impact positively on costs of inclusive employment. Further, creative application of welfare benefit rules and expert welfare benefit counselling can assist in achieving positive cost-efficiency.

5. Impacts on other stakeholders

5.1. Businesses

We have seen that another relevant perspective is that of the employer. It is important to know if there is an economic benefit (or at least neutral costs) for the employer in employing people with disabilities. There are relatively few cost studies that take this perspective.

Lo Sasso et al. (2006) in a RCT study of 198 people receiving primary health care for depression were assigned to an enhanced treatment intervention, or to usual treatment, to assist people into paid inclusive employment. The authors adopted an employer cost perspective. They found that the enhanced depression treatment resulted in an average net benefit to the employer of \$30 per worker in Year 1 rising to \$257 per worker in Year 2. They also calculated a Return on Investment (ROI) score of 302% for the 2 years. ROI was higher for companies with a reliance on team production, who hired more costly substitute labour, or experienced penalties for output shortfalls. ROI was lower for companies that had a large proportion of its employees who had dependency and that experience high staff turnover rates. Overall, the

authors concluded that *“many employers will receive a potentially significant ROI from depression treatment models that improve absenteeism and productivity at work”* (Lo Sasso et al. 2006).

Jacob et al. (2015) carried out a review to examine the costs, benefits and the benefit:cost ratio of employing adults with ASD, from a societal and an employer perspective. The 11 articles that met the inclusion criteria covered a total of 67,251 people with ASD. There were two studies that used information from national databases rather than using directly sampled participants. Three studies explored the benefit:costs to the employer of employing adults with ASD. Schaller and Yang (2005) examined whether people with ASD receiving competitive employment services were statistically significantly diverse compared to individuals with ASD receiving supported employment services. This was carried out using successfully closed VR cases, hours worked per week, earnings per week and average case cost. The average hours worked competitively per week by participants was 27.19 and the average hours worked for the supported employment participants was 22.21 showing a significant difference between the groups. They also found that the mean cost of services for competitive employment participants was US\$3,341 while for supported employment participants was US\$6,883, again a significant difference. This study identified information on important factors that are involved in a benefit:cost ratio in terms of weekly average hours worked by the group in competitive employment. The results demonstrate that individuals with ASD can continuously contribute at a worksite for a significant period of time, providing an employer benefit.

Cimera and Burgess (2011) aimed to understand if working in the community was cost efficient from the perspective of an employee with ASD. They found that working in the community was cost-effective from the perspective of the employee with ASD, but also that their hours worked per week were consistent during 2002–2007 with a mean number of hours of 23.7 per week. This study showed that adults with ASD can provide benefits to the employer, specifically by maintaining consistent hours worked per week for significant periods of time.

Burgess and Cimera (2014) evaluated the employment outcomes for adults with ASD, who

had used vocational rehabilitation providers during 2002–2011. The findings were that during this period the number of hours worked per week (22–26) by individuals with ASD was consistent across the states of the US. The number of adults using vocational rehabilitation services had increased over 10 years from 913 individuals, 0.86% of the total amount of people receiving vocational rehabilitation services in 2002 to 8,154 (5.43%) in 2011. These findings demonstrate that again that adults with ASD can contribute to a workplace for a significant number of hours per week over an extended period across a country, and that an increasing number of adults with ASD are using vocational rehabilitation services seeking employment, demonstrating a desire and willingness to work and contribute. The belief is that this would interest employers who are looking for reliable employees who want to really contribute to their business.

Russell (2006) surveyed employers to see what predicts managing directors' and owners' willingness to consider adjustments in the workplace to allow people with psychosocial disabilities to gain and retain employment. The aim of the study was to look at perceived difficulties in employing people with psychosocial disabilities from an employer's perspective and to consider how to improve recruitment and retention rates among this cohort. 53 employers completed a postal questionnaire. It was found that the attitude sub-scales 'symptomatology', 'work performance' and 'treating people equally' were the main predictors of willingness to consider adjustments in the workplace. The number of employees in the company was a predictor of willingness to consider individually focused adjustments. Russell (2006) suggests that employers require advice and guidance on helping employees with psychosocial disabilities find adjustments in the workplace in order to retain jobs, and that they prefer low-cost adjustments with minimal disruption to business. In addition, the research suggests that employers would benefit from the expertise of Jobcentre Plus Work Psychologists to develop adjustments that suit their needs and the needs of their employees.

In Finland, Vesala et al. (2016) investigated the views of inclusive employers of people with intellectual disabilities. Based on questionnaires returned by 75 employers, their views of their employees seemed very positive. In respect of relative costs, the employers did not identify people with intellectual disabilities as at greater risk of injuries and as having more sick leave. These employees may require more time to perform tasks, face more problems

in social interaction, in working full-time hours and in complying with workplace rules, all of which may represent a productivity or supervisory cost to the employer. This study confirms earlier research that showed experience of actually employing people with disabilities leads to significantly more positive attitudes and reports of workplace performance than if employers have not employed a person with disabilities before (Ala-Kauhaluoma and Härköpää 2006a; 2006b). Sixty-five percent of employers reported that the employment of people with intellectual disabilities was profitable, and only in 5% of cases as unprofitable. In addition to economic criteria for employing people with intellectual disabilities, employers highlighted the need for social responsibility and their awareness the weak position of this group in the labor market. It was important for the employer to get enough support and this was one of the most important conditions for the employment of people with intellectual disabilities. Access to adequate support (often from job coaches) in turn affected whether available subsidies were claimed. Information on the possibility of obtaining financial support and guidance was important in this respect and one-third of the employers in this study had not applied for a wage subsidy. It was unclear to the authors whether this was because the worker was productive enough for the employer not to require a wage subsidy, because the employer had not received enough information, or because making an application was considered too difficult.

From a business perspective, proactive management of employees' psychosocial and physical health can produce a range of benefits, including reduction of sickness absence, greater staff engagement and productivity, and reduced staff turnover, recruitment and costs. Making a few small adjustments to enable a member of staff to continue doing their job is far less expensive than the costs incurred through recruiting and training a new employee. Most adjustments cost nothing and according to UK's Equality and Human Rights Commission, the average cost is just £75¹³.

¹³ Equality and Human Rights Commission, Top Tips for Small Employers: A guide to employing disabled people
http://www.equalityhumanrights.com/uploaded_files/Employers/top_tips_for_small_employers_emp5.pdf

5.1.1. Conclusions

It seems clear that there is an economic argument for employers to employ people with learning disabilities. However, this economic basis is underpinned by the availability of subsidized support for the employer whether through advice and guidance, or more commonly through the availability of individualised job coach support. There are some areas where employers can see additional costs from employing people with disabilities, but large areas where they do not see any additional risks or costs. Retaining experienced workers can save employers costs. Studies we reviewed showed that the consistent delivery of hours worked from people with ASD can provide a consistent input to employers. There were smaller costs in some studies for more inclusive forms of employment. We also saw that treatment models for psychosocial disabilities can get people back to work rather than have to resort to expensive welfare benefit payments or alternative vocational services and thereby provide employers with benefits from enhanced productivity and reduced sickness leave and possible re-recruitment costs.

5.2. Individuals

While the focus of this report is the economics of inclusive employment from the taxpayer perspective, it is important to understand whether people are better off themselves. An early study dealt with the costs and benefits from 30 supported employment programmes in Illinois starting from the year of their implementation in 1986 through to 1990 (Conley, et al., 1989; McCaughrin and Rusch, 1990; Rusch, Conley and McCaughrin, 1993). Net earnings for supported employees increased by 37% in the first year of supported work to 57% in the fourth year.

Naeve, Allen, Harding and Shea (1990) conducted a study of the first two years expansion of twelve agencies offering individual supported employment services in California. In the absence of supported employment, data collectors reported that 35% of consumers would be in sheltered workshops. Using these figures, the analysis revealed net financial gain to the consumer and society and net loss to the taxpayer.

Noble, Conley, Banerjee and Goodman (1991) reported data from 45 agencies serving a total of 1,250 clients with various kinds of disabilities receiving individual supported employment in New York State. Estimated worker earnings were 2.15 times greater than before supported employment, but costs were higher when compared with alternative programmes (between 83%-91% higher)

Lewis et al. (1992) reported on the application of a benefit:cost accounting framework to evaluate supported employment in eleven agencies in Minnesota serving 1,892 individuals. Workers gained financially from supported, rather than workshop based, employment in the majority of cases. Lewis et al. (1992) studied 11 supported employment services in Minnesota involving 856 people with a range of employment options (inclusive and sheltered). Net costs of individual and group placements in inclusive employment included reductions in the cost of more restrictive alternative placement as people went into community jobs. They also reported a benefit:cost ratio of 5.62 for individual people with disabilities. The researchers also identified positive, but unquantified, benefits from employment in increased integration, quality of life and self-esteem.

A follow-up study (McCaughrin et al. 1993) demonstrated that supported employment schemes were fully cost-effective for both the individual and for society as a whole when viewed from a longer perspective, with savings exceeding costs. After one year, from the standpoint of the individual, the scheme represented a benefit as earnings increased by a mean of \$1,027 for those with severe intellectual disabilities and \$4,607 for those with mild intellectual disabilities.

Cimera (1998) looked at the cost-efficiency of supported employment compared to sheltered workshops for people's IQ, level of learning disability, multiple disabilities and other characteristics. He found differences in cost-efficiency in only one of two years studied (1990 and 1994) for men (with a benefit of \$2.09 per \$1 spent) and women (\$ 1.20 per \$1 spent). Cimera (1998) also found that from the taxpayer perspective African-Americans were cost-efficient in 1990 (\$0.76 per \$1 spent), while European Americans were not. He speculated

that these difference may be due to location of more African-Americans in urban areas with higher job availability and better transport leading to better outcomes and lower costs.

Cimera and Rusch, (1999) found that for the individual worker, wages increased irrespective of the level of learning disability within a supported employment setting. This, however, is contradicted by Thompson *et al.* (1992) who found that those with the severest form of learning disability earned more within a sheltered workshop than in supported employment. Cimera acknowledges that lower IQ and severity of impairment were significantly associated with reduced individual cost-efficiency. In addition, Cimera observed that in one of three time periods that men were significantly more cost-efficient than women from the societal point of view, as were African Americans when compared with European Americans.

In a national study of Supported Employment Agencies in Great Britain (Beyer et al. 1996), 101 Agencies (48%) who responded were supporting 2446 people with disabilities in jobs, 90.3% of whom were people with a learning disability. A benefit:cost analysis showed workers gained £2.47 for every £1 they lost in taking up employment,

Hemenway and Rohani (1999) estimated costs and benefits for 29,475 individuals who had participated in Florida's vocational rehabilitation programme during the federal fiscal year of 1998, with 9,598 having closed with a successful employment outcome. The average cost of placing and maintaining these clients in employment was estimated at \$5,010 per case. Among these, clients who completed programme services and obtained successful employment outcomes, gained an average of \$10,407 in annual earnings over pre-programme earnings.

A review by Cimera (2000) identified 21 costs studies of supported employment, all relating primarily to people with learning disability. Again, he found that, at the individual level, the benefit:cost ratio is almost always positive, regardless of level of disability, although people with higher IQs seem to do better monetarily than those with lower IQs.

A study by Cimera (2010a) analysed the cost-efficiency of supported employment for individuals with intellectual disabilities over the period 2002-2007 using US national VR data

on 104,213 individuals with intellectual disabilities. Outcomes were recorded at the time of VR case closure was documented as “successfully employed” if the person was competitively employed in the community as measured by number of hours per week and gross wages earned per month. Benefits to the workers were measured by wages earned. Costs to the workers were any forgone wages from previous employment (such as from sheltered workshop wages), taxes paid, and any reduction in subsidies (such as Supplemental Security Income, Social Security Disability Insurance in the US). Supported employment was found to be cost-efficient for workers who became successfully employed. The average net benefit for employees with intellectual disabilities without secondary conditions was \$475.35 per month, a benefit:cost ratio of 4.20. Outcomes were similar for individuals with and without secondary conditions. The study also found that workers in sheltered settings earned an average of \$1.36 per hour. Workers in Washington reported a monthly net benefit of \$561.04 and an average benefit:cost ratio of 13.54; in Wisconsin the monthly net benefit was \$217.92 with an average benefit:cost ratio of 1.86. Supported employment was a positive option for individuals with intellectual disabilities from a cost-efficiency perspective. Workers earned more in the community than they would in sheltered workshops regardless of whether they had any multiple disabilities. It is important to note that the average wage of workers with intellectual disabilities was below the poverty threshold for a single person under 65, based on U. S. Census Bureau data for 2009¹⁴ (The Center on Knowledge Translation for Employment Research (KTER) 2012). Workers in supported employment will need jobs paying more than minimum wage and to work more than 21.8 hours per week as found in this study. There is obviously a need for job development and support strategies that will increase the economic outcomes achieved by workers with intellectual disabilities.

Cimera and Burgess (2011) examined the employment outcomes and cost-efficiency of 19,436 adults with Autistic Spectrum Disorders who had closed cases between 2002 to 2007. Analyses showed that individuals working in inclusive generated a worker average benefit:cost ratio of 5.28. Worker benefit:costs were positive regardless of the State in the US in which services were provided. However, rates of employment (M= 40. 6%), hours worked per week (M= 23.7), and wages earned per month (M= \$793.34) were low. This was

¹⁴ U. S. Census Bureau. (2009). Poverty thresholds 2009. Available from <http://www2.census.gov/programs-surveys/cps/tables/time-series/historical-poverty-thresholds/thresh09.xls>

a similar result to that found by Cimera and Cowan (2009) who found that people with Autism tended to work far fewer hours and earned less in wages per week than most disability groups in the study.

Cimera and Burgess (2011) aimed to understand if working in the community was cost-efficient from the perspective of an employee with ASD. They found that not only working in the community was cost effective from the perspective of the employee with ASD, but also that their hours worked per week were consistent during 2002–2007 (mean hours = 23.7 per week). This study showed that adults with ASD not only receive benefits from working competitively, but can provide benefits to the employer, specifically by maintaining consistent hours worked per week for significant periods of time.

Schaller and Yang (2005), examined whether people with ASD receiving competitive employment¹⁵ services were statistically significantly diverse compared to individuals with ASD receiving supported employment¹⁶ services. This was completed in relation to successful closure rates for their vocational rehabilitation cases, hours worked per week, earnings per week and average case service cost. The average hours worked competitively per week by participants was 27.19, a significant difference between the groups. They also found that the mean cost of services for competitive employment participants was US\$3,341; while the supported employment participants was US\$6,883, a significant difference. This study identified information on important factors that are involved in a benefit:cost ratio in terms of weekly average hours worked by the group in competitive employment (27.19). The results demonstrate that individuals with ASD can continuously contribute at a worksite for a significant period of time.

¹⁵ Competitive employment is work in the competitive labour market that is performed on a full-time or a part-time basis in an integrated setting; and for which the individual is compensated at or above minimum wage, but not less than the customary wage and level of benefits paid by the employer for the same or similar work performed by individuals who are not disabled.

¹⁶ In the context of this paper, supported employment involves an outcome of competitive employment, mobile work crews, enclaves (a small work group which is integrated among the regular work force of a single industrial establishment) or affirmative business model (a small private business set up specifically to employ disabled persons to produce products for public consumption).

5.2.1. Conclusions

Individuals generally experience higher benefit:cost ratios going into inclusive employment than sheltered work. Under these circumstances, people with disabilities should be motivated to enter inclusive, rather than sheltered, employment. We need to consider that employment rates vary across schemes and that significant numbers of people still do not enter paid employment through the schemes we have mentioned. Wage rates also differ across people with different diagnoses and people with intellectual disabilities, and people with more severe levels of disability, often earn less than others. We have to pay attention to absolute wage rates and income as for some people wages are below national poverty levels. If taxpayers are to benefit from people going into inclusive employment, we need living wage levels so that people can pay tax and rely less on welfare benefits.

6. Transition from education to inclusive employment

6.1. Job coach supported employment as an approach to VET

Supported vocational training in transition: In the context of low post-school employment rates for young people with development or intellectual disabilities, research from the US has identified factors that increase the likelihood of employment after transition for this population (Peraino 1992), which include: successful completion of high school (Wagner et al. 2006; Scuccimarra & Speece 1990); being male (Peraino, 1992); having had a summer job or part-time supported job experience while at school (Hasazi *et al.* 1985; Scuccimarra & Speece 1990; Phelps & Hanley-Maxwell 1997); receiving vocational-technical training (Humes & Brammer 1985); the duration of work-based-based training and age appropriate integration with non-disabled peers (White and Weiner 2004); and use of a job coach (Howarth et al. 2006). Many of these features are incorporated in a job coach model of supported employment being used to support work experience and skill development while at school for disabled young people, leading to greater employment outcomes. Investment

by governments in these strategies while people are still in education are likely to reap benefits for taxpayers in the adult years.

Maybe & Swain (2009), reporting on schemes in North Carolina, underlined the fact that individuals do not necessarily have to be 'work ready', but rather the goal is to locate and, if needed, modify inclusive jobs in the community and provide training and supports at the job site. Job coaches assist the consumer in locating a job and preparing for the interview, and then providing on-the-job training to the degree necessary to assure a successful employment outcome. Even where this is successful there remains a continuing need for long-term support in all of the following vocational training areas: monitoring work performance, work quality and work rate; facilitating job changes and career advancement; providing crisis intervention; monitoring people's social skills, their social engagement at work, and overall integration into the work culture; support training for the employer and/or co-workers; retraining previously learned skills; training the worker on any new job skills the employer adds to the job; assessing the worker's job satisfaction; assisting the worker to manage any welfare benefits impacted upon by going into paid work; and assessing supervisor, and ultimately employer, satisfaction with the worker.

The "*Vocational Education and Training: Policy and Practice in the field of Special Needs Education (VET)*"¹⁷ project was a large scale, E.U. sponsored study set out to identify and investigate the key aspects of vocational education and training for learners with special educational needs (SEN), usually disabilities, aged between 14 and 25, with a clear goal of developing employment opportunities. In particular, the project analysed "*what works*" in VET for learners with SEN, "*why it works*" and "*how it works*". For a wide range of people with SEN, the project identified four factors that influences inclusive employment outcomes for this challenging group: VET institution management patterns; vocational education and training pattern; learners' pattern; labour market pattern. The study found from observation of successful programmes across 26 E.U. countries that, to capitalise on formal education, particular post-education labour market patterns of support are needed. These were:

¹⁷ <https://www.european-agency.org/agency-projects/vocational-education-and-training>

- making available staff such as job coaches, career counsellors or mentors, and resources that are permanently available throughout the transition and into work.
- The adaptation of pedagogical methods and techniques, the provision of supervised practical training in companies sufficiently prior to school leaving and supported employment models that offer a gradual reduction in the intensity of support.
- Safeguarding of connections with local inclusive employers and companies to allow for practical training and job opportunities.
- Establishment of formalised partnerships, co-operation and networking structures, and the provision of follow-up activities to maintain the learners' inclusive employment in companies.
- Finally, this level of support for learners contributes to their increased self-confidence and belief that transition to the inclusive labour market is possible for them.

These support mechanisms were thought to fit well with the job coach supported employment model.

The study noted the lack of micro-level data on outcome to support decision-making, noting that: *"... very few educational institutions, service providers or administrative bodies could provide data on outcomes with regard to VET for learners with SEN/disabilities....In most instances, quantitative data on outputs was available with little information on effects or impact. Quality assurance should therefore seek to focus on outcome orientation, as this is the main indicator of whether the VET system and the labour market at the practical level achieve what is set out at the policy level."*

6.2. The particular role of internships in promoting inclusive employment

Job coaching and on-the-job skills teaching practices within supported employment have been used to develop longer internship programmes as a stepping stone into paid work. There are many apprenticeship and internship programmes available across the E.U., some specially for young people with various disabilities, and some generic schemes that have enhanced

support levels for these groups¹⁸. However, there is relatively low levels of engagement of young people with disabilities in generic work-based learning apprenticeships and traineeship schemes (Townsend et al. 2004) schemes. There is an emerging literature on longer-term internship programmes, Project SEARCH being one model with evidence of success in paid employment outcomes. This programme combines work-first and train-first approaches by assisting special school students to rotate through three 10- to 12-week internships throughout a full year. Internships usually comprise of a set of skills the student requires to attain employment in a career of their choice. For example, if a student expresses an interest in data processing, that student may rotate through three internships that teach different aspects of that career. With on-site job coach vocational training and assistance, these internships serve both the student's learning needs (providing the student with onsite skill teaching by trained teachers that advance them toward their personal employment goal) and at the same time teach skills that are relevant to the business's hiring needs (marketable skills for real jobs in the host business). Wehman et al. (2014) presents the preliminary results of a randomized clinical trial of Project SEARCH on the employment outcomes for youth with ASD between the ages of 18–21 years of age. Specifically, 87.5 % of treatment group participants acquired employment and an opportunity to learn new skills on the job, while only 6.25% of control group participants gained employment.

Wehman et al. (2013) have described a modified Project SEARCH model for youth with ASD. In this work, job coaches implemented the key elements of the Project SEARCH model in the workplace with ASD specific interventions, which included: (a) regular behavioural consultation with a behavior analyst; (b) specialized structure and schedules designed to meet the needs of youth with ASD in internship rotations; (c) enhanced behavioural definition of workplace social communication, idioms, and behavioural expectations; (d) use of ASD specific visual supports; (e) use of self-monitoring reinforcement programs; (f) intensive social skill instruction through role play and behavioural practice; and (g) the use of applied behavior analysis instructional techniques to ensure student success. Students with ASD have gained and retained competitive employment at a much higher rate than those in a control group from this approach (Schall et al. 2015).

¹⁸ <https://www.european-agency.org/agency-projects/vocational-education-and-training>

Kaehne (2015) in a study of 17 UK Project SEARCH programmes and 315 young people demonstrated that 51.5% went on to paid employment of average 23.9 hours per week, and with a majority earning over national minimum wage rates.

6.3.Evidence for costs of work-first and train-first approaches in inclusive jobs for young people with disabilities

Cimera (2010c) explored the monetary benefits and costs generated by 246 supported employees and the vocational outcomes that they achieved (e.g., months employed, wages earned, etc.) based on their transition experiences. The study compared outcomes for (a) individuals who received no transition services in high school; (b) individuals who had community-based work experiences in high school (e.g., had a paid job or participated in job sampling in the community), and (c) individuals who had individualized education programs in high school but experienced only in-school transition services. Those young people receiving no transition services returned an average of \$0.46 to taxpayers. Young people receiving in-school transition services returned \$0.56 for every \$1 spent and those receiving community-based transition services returned \$0.73 for every \$1 spent. Community-based transition services were most cost-efficient in terms of job placement.

For community-based versus no transition services in a matched sample of 42 supported employees from the no-transition, Cimera (2010c) found that supported employees in community-based cohort generated an average benefit:cost ratio of 0.61, compared to 0.41 for the no-transition cohort. For community-based versus in-school transition services a matched pairs comparison found that the in-school transition services generated a mean benefit:cost ratio of 0.37 compared to 0.59 for individuals from the community-based transition services. The author concludes that *“The data from this study suggest that one way to improve the cost-efficiency of supported employment to taxpayers is to have individuals with disabilities participate in community-based transition programs when they are in high school. Individuals with such experiences not only were more cost-efficient than were individuals with no transition or in school transition services but they also tended to keep their jobs nearly twice as long”* (Cimera 2010c; p 11).

Fasching (2009) studied the post-school placements of young people with intellectual disabilities in Austria, in the context of their type of school (e.g. special school, general school), and the careers advice they are given by teachers. In a small study of teacher views, the results show that career counselling at school acts as a 'gatekeeper' during the transition from school to working life. The majority of special school students are recommended to move to occupational (sheltered) therapy, while the majority of students with special educational needs in general schools are recommended to pursue qualifications and vocational training. Fasching (2009) concludes that the recommendation of occupational therapy by career counsellors at school is closely linked to negative attitudes of teachers towards the cognitive abilities of students with intellectual disabilities. Together with the presence of segregated employment support facilities in the Austrian system, this tends to undermine the route to employment in inclusive employment settings and represents a key factor that needs to be addressed if taxpayer savings from inclusive employment identified elsewhere in this paper are to be realised.

6.4. Conclusions

The implication here is that taxpayers are investing heavily in VET services that have little evidence of success in the tangible outcomes of getting young people who have SEN into paid employment. When taken with the data on the gap in employment rates between disabled and non-disabled citizens, and the generally high levels of unemployment experienced by young people across the E.U., it seems clear that savings to taxpayers may be available if we invested in employment support that had evidence that it worked.

7. Conclusions

The conclusion of this review is that disabled people, governments, and taxpayers, are likely to benefit financially in the long-term from greater investment in inclusive employment. While there is much variability in methods, model comparisons, national contexts and relative levels of benefits to these key stakeholders across studies, the weight of evidence is still positive in favour of inclusive employment.

We have over the years set up extensive systems to provide vocational activity, vocational rehabilitation and employment for people with disabilities. While this system delivers work and wages for some, and much in terms of activity for many people with disabilities, it has not in general delivered jobs in the open labour market. Many of the sheltered workshops included in this review were not in fact designed to deliver jobs in the open labour market and assessment of their effectiveness in terms of delivering inclusive jobs is unhelpful. It is also true that there are many forms of employment in the E.U. that have the broad description “sheltered employment” that do include elements of open labour market placement. However, if employment and income gain for individuals is our aim, then different models of support into employment must be looked at in terms of their ability to deliver paid jobs and economic benefit to people with disabilities and to taxpayers. If we put aside any preferred policy preference for inclusive or non-inclusive employment then the optimum choice will be the model of employment support that delivers the highest employment rates and the greatest cost:efficiency for individuals and the taxpayer.

In finding jobs for people with disabilities, McDaid et al. (2008) conclude that vocational employment systems that do not immediately seek to return or place people with disabilities to employment, help to place no more than 10% to 20% of people into open employment. Crowther et al. (2002) in a high quality systematic review of vocational rehabilitation for people with severe psychosocial disabilities identified 18 randomised controlled trials of reasonable quality. They found that, on entry to competitive employment, supported employment was significantly more effective than pre-vocational training, with 34% of people

in supported employment being employed compared to 12% in pre-vocational training. Participants in supported employment earned more and worked more hours per month than those in pre-vocational training. No evidence was found that pre-vocational training was more effective in helping people with severe psychosocial disabilities to obtain competitive (inclusive) employment than standard community care.

In terms of the cost of employment, much of the relevant literature we have identified is from the US. This is because there has been significant legislative and policy development in the US since the 1980s and extensive investment in University based evaluations of employment interventions. There is considerable variation in the results of different studies. Some show clear cost:efficiency (benefit:cost ratios over 1.0 or net cost savings to taxpayers) for models supporting inclusive employment, such as supported employment and IPS. Some studies show significant savings without reaching a full “breakeven” point, particularly in the early years of delivery. Authors have identified a number of factors that can lead to these variations. Differences in benefit:cost calculations between studies can introduce variability in cost-efficiency for people with disabilities. Whether the cost savings from reduced use of alternative services (e.g. sheltered workshops¹⁹, day centres or pre-vocational training centres) are included in calculations will affect cost:efficiency ratios. Payment levels to employment support services, and the availability of employer financial incentives for employing people with disabilities, will vary between countries and states with devolved powers. Differences in eligibility for welfare benefits, and in welfare benefit rates, introduce variability in savings where welfare benefit take-up is reduced by people becoming employed. Differences in income tax rates will also produce different levels of savings to taxpayers as people enter employment.

Many governments have “welfare to work” policies that are predicated on employment being a healthier option than a lifetime on welfare benefits and inactivity for people who are long-term sick or disabled. For people with some disabilities, such as autism or psychosocial

¹⁹ Please note that many of the cost:efficiency studies reviewed from the US have a specific model of segregated workshops for disabled people. Please see our previous discussion of the nature of sheltered work in the studies we have reviewed, in the context of a wider set of descriptions of sheltered employment across Europe, in Section 4.4, page 25.

disabilities, the nature of their impairments can introduce additional relevant costs and savings through becoming employed. These include the costs of reduced health and social care service input. Equally, some studies of people with autism also look to establish savings from reduced social work and other social care services. For people with psychosocial disabilities or autism, the evidence reviewed here suggests that these types of savings occur more in inclusive employment with IPS assistance rather than more restrictive settings. It seems likely that, if we include more detailed accounting of any reductions in health and social care services due to entering paid employment there is some evidence that this will increase cost-efficiency and taxpayer benefit, albeit with some variation due to local costs and systems. We do, however, need more evidence on whether there is health gain and cost saving for people with other forms of disability.

Much of the evidence reviewed here concerns people with disabilities who are entering employment for the first time. There is also evidence here that return to work strategies that help people who develop long-term illness or disability when in employment, also save the taxpayer money. Assertive health care interventions, job coach support for return to work and other strategies can help people back to work more quickly. Here the main cost savings to taxpayers are through reducing the time that people receive temporary or long-term disability welfare benefits or the effects of early retirement and additional pension years. There is also some evidence of benefit from the introduction of more preventative strategies in the workplace (such as anti-stigma campaigns) can help people cope with disability and stay in work and makes it easier for new people with disabilities to join that workplace.

Reasonable accommodations on the part of employers is a central tenet of E.U. legislation, seeking to balance the barriers disabled people face from impairment in gaining employment with changes to key aspects of the workplace. There is evidence that these accommodations can save the taxpayer money. Some costs may accrue to employers, while others are offset by government policy, but in general costs seem manageable. From our reading, rather than costs, there appears to be potential for financial benefits for employers from employing people with disabilities, and retaining people when they become ill or disabled. There appears to be most potential in job coach support models that provide advice and guidance to employers, helping them to draw on funding that might be available and providing on-the-

job support. We have good cost accounting frameworks to better understand the employer costs and benefits, but we still have few examples where this has been rigorously applied. However, there are logical reasons why employing people with disabilities can assist employers. Helping employers to manage disability among people already in their workforce, particularly people with psychosocial disabilities, can deliver cost savings through reduction of sickness absence, greater staff engagement and productivity, and reduced staff turnover with lower recruitment and costs as a result.

Underlying all this variability, cost studies of supported employment compared to some forms of sheltered employment and other vocational rehabilitation models have shown significant financial benefits for taxpayers and individuals from delivering jobs through inclusive employment. The studies that have been carried out on national databases are more consistent and they show more definitive net benefit for taxpayers and people with disabilities over long time periods. These benefits are generated for people with more complex disabilities such as intellectual disabilities, Autistic Spectrum Disorders and people with multiple disabilities. IPS studies for people with psychosocial disabilities have also provided evidence of significant financial benefits for taxpayers and individuals. Reviews by Cimera (1998; p 291) concluded *“all individuals, regardless of severity or number of disabilities, are cost-efficient to serve via supported employment”* and Schneider (2003) that: *“At the global (state or national) programme level, Supported Employment tends to be more favourably evaluated than sheltered work or training, and this is because of its superior employment outcomes, which generate greater tax revenue.”*

There is also some evidence that investing in supported work experiences in inclusive workplaces while at school can help people enter paid work more easily and have a positive impact on benefits for taxpayers. These include having summer or part-time supported job experience while at school, providing vocational-technical training (rather than academic teaching), having significant time in work-based-based training, being with non-disabled peers and use of a job coach. Those receiving transition services of these kinds seem to deliver better taxpayer benefit:cost ratios as adults than those who did not (Cimera 2010c). In the E.U. context, a large scale study has reported very unclear outcomes of current VET approaches to young people with disabilities in transition from school to adult life. The study

concluded that approaches were required such as: including job coaching and other employment focused staff throughout transition; the provision of supervised practical training in inclusive workplaces; the provision of follow-up activities to maintain the learners' inclusive employment in companies. Given the potential for enhanced benefits for the person and taxpayer we need a greater focus on delivering what actually works at school or college to provide inclusive paid employment for young people at graduation.

Reviews such as those by Schneider (2003) reveal that the benefits of inclusive employment accruing to governments are by no means delivered without organisation and effort on the part of local services. Certainly strategic plans are needed to close or reduce the size of unneeded services in any move from day activity or specific forms of sheltered employment to appropriate forms of service that support inclusive employment. Raising awareness of disability and stigma, enforcing anti-discrimination legislation, providing job coach support, and modifying welfare benefit policies to incentivise people to enter work will need to be part of that strategy. Providing effective transition services to prioritise employment outcomes will be needed. There may also be a need to reshape some wider forms of non-employment support also. For example, a shift to inclusive employment for people with psychosocial disabilities can require an increase in case management resources as well as in IPS services.

We have talked throughout this paper about the economic aspect of employing people with disabilities and the opportunity inclusive employment might represent for delivering taxpayer benefit. There are of course many other imperatives that would suggest E.U. States should pursue inclusive employment as a priority for the individual and for society in general. Inclusive jobs can be a policy priority as a human right, or because we believe inclusive employment can deliver important non-financial outcomes for us: better quality of life; increased social integration; protection and improvement of psychosocial and physical health. In terms of policy consensus there is extensive E.U. State's sign-up to the UN Convention of the Rights of Persons with Disabilities (UNCRPD) and this underlines that the direction of travel need to be towards inclusive employment as a right. Article 27 of the UNCRPD requires that:

“States Parties recognize the right of persons with disabilities to work, on an equal basis with others; this includes the right to the opportunity to gain a living by work freely chosen or accepted in a labour market and work environment that is open, inclusive and accessible to persons with disabilities.”²⁰

While there will be transitional costs involved in achieving change, there is clearly a body of opinion, not least from people with disabilities themselves, that the social benefits for people and society are important enough for governments to expend resources to achieve inclusive employment.

²⁰ <http://www.ohchr.org/EN/HRBodies/CRPD/Pages/ConventionRightsPersonsWithDisabilities.aspx#27>

8. References

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