

Local economic development opportunities from NHS spending: Evidence from Wales

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Abstract

The paper examines the local and regional economic impacts of NHS spending. The research is set in the context of tensions between buying economies, process efficiencies and local economic development impacts of public sector procurement, and contributes to the evidence base on supplier proximity and income retention at the local and regional level. The scale, scope and spatial distribution of NHS spending in a South Wales case is analysed using detailed purchasing information provided by a local health board. The paper then uses an economic modelling framework to quantify the supply chain impacts of this spending to determine the full regional economic impacts of operational and capital expenditures. The analysis shows that NHS Wales spending supports significant levels of regional economic activity in terms of output, employment and gross value-added. The paper also explores scenarios on the potential economic significance of import substitution of selected purchases. The implications of the changing procurement environment, with new EU directives, and a reorganisation of procurement functions within NHS Wales, are explored, and suggestions are made for further research.

Keywords

NHS Spending, local and regional economic impacts, public sector procurement, supplier proximity, Wales

Introduction

This paper examines and quantifies the regional economic activity supported by National Health Service (NHS) spending. The paper is set in a context of tensions between a search for savings in more efficient public procurement contracts based on buying economies and process efficiency, regulatory frameworks placing constraints on how far local content can be specified in public service procurement, but then the potential economic development benefits from local purchasing. While there is a strong regulatory and professional procurement emphasis on value for money, the value equation may need to address the more subtle consequences of increases in locally directed NHS spending.

The analysis meets a need identified by Thatcher and Sharp (2008) that: “In the current UK policy environment, quantifying actual local economic gains could add much needed weight to arguments in favour of local procurement in the NHS and other public bodies.”(p.253). This gap in terms of quantitative analysis was also identified by Preuss (2009) who looked specifically at local authorities in England, and how they used their procurement activities to further sustainable development objectives. Cabras (2011) also identified a need for research on public procurement impacts at a regional and sub-regional level, and contributed towards addressing the research gap through a spatial analysis of the procurement activities of a peripheral local authority in England. Furthermore, in relation to the health sector specifically, there is limited evidence on the economic effects related to NHS supply chains for goods and services, set beside economic effects associated with the wage spending of NHS staffs. These questions have been brought into a sharper focus with NHS budgets coming under increasing pressure in a time of austerity (see Murray, 2009 on

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2
3 the use of public procurement to stimulate the local economy following economic
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5 crisis).

6
7 The Welsh NHS is a useful lens through which to study these issues with health
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9 sector spending of £6.47bn in 2014-15 (Wales Governance Centre, 2016) or around
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11 one fifth of total identifiable public expenditure on services in Wales. The Welsh
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13 Government has noted the requirement to lever better quality local socio-economic
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15 outcomes from public procurement (Welsh Government, 2010a), and stressed
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17 connections between health sector public procurement and economic growth.
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21 The paper uses the case of the Aneurin Bevan Health Board (ABHB) in South East
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23 Wales to examine the scale, scope and spatial distribution of supply chain spending,
24
25 and to quantify the indirect and induced impacts in other parts of the local economy.
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27 The next section of the paper provides some background on the literature
28
29 connecting public procurement and local economic development. This section
30
31 explores the connections between the spatial proximity of suppliers and public
32
33 procurement contracts and highlights the tensions between process efficiency and
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35 local economic development outcomes. The third section outlines the case study and
36
37 the methodology. The fourth section provides the analysis of the local health board's
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39 spending and how this supports economic activity in other parts of the economy. The
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41 discussion and conclusions relate to the changing procurement environment within
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43 NHS Wales, the potential to lever socio-economic outcomes from changes in local
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45 purchasing patterns, policy implications and future research needs.
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51 **Public procurement and local economic development**

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53 The Gershon Review (1999) identified a series of public procurement problems
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55 including neglect, waste, variability in standards, duplication and ignorance. The
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1
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3 immediate outcome of the Review was the creation of the Office of Government
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5 Commerce in 2000, which was charged with the twin tasks of modernising the public
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7 procurement process and securing better value for money outcomes for the taxpayer.
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9 This 'value' goal is reinforced by a raft of multi-level procurement regulations – from
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11 the European Union level down to the local government level – which requires public
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13 bodies to pursue best value and to do so in a transparent and non-discriminatory
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15 manner, treating all firms within the EU in a uniform way (see National Audit Office,
16
17 2010).
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21 While progress has been achieved in the past decade, the story of UK public
22
23 procurement remains one of untapped potential. The huge amounts that the public
24
25 sector spends annually on goods, services and works, constitutes a real power, but
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27 with this dependent on whether this force can be channelled in an efficient manner
28
29 (Morgan, 2010).
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32 The changing environment around procurement comes together with growing
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34 interest in the potential role of public purchasing patterns in local economic
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36 development. Research in the 1980s and 1990s on embeddedness and local sourcing
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38 propensities in UK regions tended to be focused on multinational firms, and the
39
40 privatised utilities, and developed in the context of concerns about a developing
41
42 branch plant syndrome. In a similar vein it has been recognised that the distribution of
43
44 public spending, defence spending, and government procurement can have important
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46 economic and social policy impacts (see for example McCrudden, 2004 for an
47
48 international historical review of social outcomes from public procurement, and
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50 McLean and McMillan, 2003, who examine methods for allocating UK public
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52 expenditure to the UK regions and their equity and efficiency consequences).
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55 However, Morgan (2008) argues that inadequate attention has been given to the role
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3 of public authorities and their local spending in addressing problems of uneven
4
5 economic development. Mackay (2001, 2003) also shows how relatively higher levels
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7 of public spending in some areas can reduce national inflationary pressures, and
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9 moreover that local authorities can, through their spending, ameliorate some of the
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11 impacts of recession in their areas (see also more recently Jones et al., (2015) on the
12
13 uneven impact of austerity on public services delivery in more deprived parts of the
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15 UK).

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18 The changing environment around public procurement, and calls for greater
19
20 professionalism in purchasing, can, however, create tensions between leveraging socio-
21
22 economic outcomes and value for money. For example Peck and Cabras (2011) (see
23
24 also Cabras, 2010, 2011) provide an analysis of local authority spending in the North
25
26 West of the UK. This research showed that contracts with the public sector provided
27
28 an important source of business stability to many local SMEs. However some of these
29
30 SMEs also noted an increase in formal bureaucratic procedures, with an extended
31
32 range of information required from the firms, together with an emphasis on a narrow
33
34 definition of ‘value for money’ that overly focused on price. These factors in general
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36 impacted disproportionately on smaller suppliers. Peck and Cabras (2011) make the
37
38 point that: “One of the contradictions concerns the juxtaposition of value for money
39
40 and the efficiency of procurement processes alongside the emerging requirement to
41
42 support local employment and small and medium sized enterprises (SMEs) in
43
44 particular as part of the Government’s approach to sustainable communities.” (p.308).
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46 In consequence ‘narrow’ ideals on value for money in public purchasing could work
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48 against the achievement of socio-economic objectives at local level.
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54 More generally, and linked to the above issues is research connecting public sector
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56 procurement, supplier proximity and local income retention. Cabras (2011) in an
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3 investigation of this issue, using procurement data for local authority suppliers in the
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5 north of England, sought to examine their expenditure patterns and the consequent
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7 retention (or leakage) of income from a local authority area. For example, public
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9 sector suppliers with local headquarters, and in sectors such as construction and social
10
11 care, were more likely to have higher local purchasing propensities, compared with
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13 those suppliers headquartered outside the locality and in sectors such as consultancy
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15 and business services.
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18 The sectoral or market dimension was also significant in the work of Mamavi et al,
19
20 (2014), who examined spatial proximity in supplier selection in French public
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22 procurement. They examined whether proximity was important in procurement
23
24 decision-making, with proximity considered an ‘important dimension of supplier
25
26 relationship management’ (p.490). Mamavi et al assert that there has been some
27
28 rediscovery of the ‘virtues of spatial proximity in effective governance of inter-
29
30 organisational relationship’ (p.492). The proximity issue was tied to the degree of
31
32 flexibility and adjustments needed in the management of the supplier and public
33
34 contractor relationship. Then activities in the construction and civil engineering
35
36 market were more likely to be sourced close to the buyer, require more frequent
37
38 adjustments and communications between supplier and customer, and were perhaps
39
40 more likely to involve transactions specific assets, and with the potential for hold-up.
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42 Here then was a suggestion that relationship management factors linked to proximity
43
44 should be integrated alongside traditional competencies in calls for tenders. This
45
46 finding is particularly interesting in an EU regulatory environment that does not
47
48 explicitly allow local preferencing (see Thatcher and Sharp, 2008).
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54 Within the US, public procurers have more discretion regarding supplier selection,
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56 and research has examined the local economic development aims of public
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3 procurement, through specific ‘buy-local’ schemes, and as a driver of innovation (see
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5 Nijaki and Worrel, 2012 for a review). There is however debate as to whether such
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7 discretion, and local preferencing can aid or hinder the decision-making process in
8
9 relation to supplier selection (see Williams, 2014, for a summary of the issues).
10

11 The tensions between value for money in procurement (linked to process efficiency
12
13 and demand aggregation) and the potential economic development benefits linked to
14
15 local purchasing, can be usefully explored using an NHS case example, given the
16
17 scale of its spending and the pressures for efficiency and best value in procurement.
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19 Watson et al. (2013) show that research on NHS purchasing practice has been quite
20
21 critical. One issue relates to fragmentation of NHS demands for similar goods and
22
23 services across large numbers of suppliers, increasing transaction costs, and reducing
24
25 opportunities for purchasing economies and NHS leverage over suppliers. Watson et
26
27 al. note one means of improving the situation is demand consolidation with smaller
28
29 numbers of preferred suppliers, but that this process creates winners and losers within
30
31 NHS organisations, and has political as well as technical and practical ramifications.
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36 A further issue is a potential tension between encouraging local firms to become
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38 players in the NHS supply chain and the acquisition of purchasing economies on
39
40 complex supply chain frameworks that could benefit larger firms outside the locality
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42 (see Loader, 2013). In addition the NHS procurement process will be concerned with
43
44 different priorities when they procure goods and services. Demand aggregation makes
45
46 more sense where the NHS wants to drive down costs, but low cost needs to be
47
48 distinguished from best value. This is not an easy concept to define when public
49
50 procurement is expected to deliver so many different political priorities – like local
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52 sourcing and SME support for example (Morgan, 2010). For example, in catering and
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54 food, the aggregation of demand could create problems where it leads to the
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3 aggregation of supply, and large firm monopolies in the supply of food to the NHS.
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5 Moreover, in many UK regions there is mounting policy pressure to use as much local
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7 food as possible in NHS catering contracts, and there is also a desire to try to open up
8
9 these contracts to SMEs (see Welsh Government, 2010b).
10

11 In summary there are rules to the game governing public purchasing in the EU.
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13 These rules have ramifications for the extent to which public purchasing by
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15 organisations such as the NHS can ‘support’ local economic activity. However,
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17 alongside this seemingly rigid paradigm there appears to be an element of flexibility
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19 in that organisations such as the NHS are not obligated to select “the lowest price”
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21 tender. Indeed, new EU rules for public procurement (Cabinet Office, 2013)
22
23 discourage price as a single criteria, and show the need to consider environmental
24
25 and social issues. These directives also aim to improve SME access to public sector
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27 contracts by encouraging division of contracts into lots, reducing burdens with
28
29 respect to proof of financial capability, and with relatively high thresholds which
30
31 determine whether some public sector contracts (e.g. in clinical services) need to be
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33 advertised at cross border level. The rules also introduce more potential to allow
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35 organisations, such as the NHS, to negotiate more fully with suppliers in determining
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37 and adapting products and services to meet its specific needs (NHS Confederation,
38
39 2014). The new EU procurement directives then have some particular relevance for
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41 the NHS, and for its potential to procure more sustainably. For example this might be
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43 in terms of awarding a contract to “the most economically advantageous tender”, in
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45 which case they can use criteria linked to the subject-matter of the contract in
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47 question (such as quality, price, technical merit, aesthetic and functional features,
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49 after-sales service, delivery date and completion date).
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3 The review above suggests that public purchasing, including that in the NHS, has a
4 potential role in improving development prospects in the local economy, but that this
5 role is prescribed somewhat by the need for efficiency in public spending and a drive
6 for public sector cost savings. Notwithstanding, a contention of this paper is that there
7 needs to be a better understanding of the spatial pattern of NHS purchasing, and
8 consequent levels of income retention within localities. Such analysis will enable
9 estimation of local economic activity supported through this procurement, both
10 directly and indirectly, together with the impacts of marginal changes in purchasing
11 patterns on selected categories of goods and services. Then the results of this paper
12 reveal something of the nature of economic gains from local purchasing activity in the
13 NHS.
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29 **Case study and methodology**

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31 The analysis in this paper is based on the case of the Aneurin Bevan Health Board
32 (ABHB) in Wales. The Board is responsible for the delivery of health care services to
33 more than 600,000 people living in the Gwent area of Wales including Blaenau
34 Gwent, Caerphilly, Monmouthshire, Newport and Torfaen. This area contains general
35 and community hospitals, specialist health centres, local clinics and primary care
36 facilities providing medical, dental, pharmacy and optometric services.
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45 This section explains the methods used to analyse the nature, scale and spatial
46 distribution of ABHB's supply chain spending for one year of activity (2009-10), and
47 to quantify the economic activity in Wales supported by ABHB spending. The 2009-
48 10 year is taken for a number of reasons. This was the first year of operation for the
49 newly formed NHS boards within Wales, and ABHB was engaging in major capital
50 expenditure within that year with the building of new hospitals. This provided an
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3 opportunity to undertake a detailed analysis of the local economic impacts that could
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5 be linked to such significant capital projects in the region. ABHB had not undertaken
6
7 any large scale capital works in the period since then, although a new hospital build at
8
9 Llanfrechfa (Monmouthshire) is now underway and expected to be completed during
10
11 2019.
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14 A spatial and sectoral mapping of the ‘direct’ spend of the ABHB, in its local area
15
16 and region was undertaken. This was followed by a modelled analysis of how this
17
18 spend supported further activity across the Welsh economy. The analysis of
19
20 expenditure was informed by detailed records provided by ABHB showing their
21
22 spending with identified companies and institutions. Initially the ABHB database was
23
24 analysed by examining individual supplier addresses within Wales, and then within
25
26 the more local ABHB area, and classifying the various suppliers of goods and services
27
28 in terms of industries (i.e. standard industrial classifications). This classification also
29
30 enabled the economic modelling element of the research to identify how direct
31
32 spending of the defined industries led to economic outcomes in other Welsh industries
33
34 (i.e. indirect and induced economic effects in Wales). The procedure was undertaken
35
36 again for firms and institutions outside of Wales that supplied the Board. All ABHB
37
38 transactions were then aggregated into 25 defined sectors.
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43 The analysis of ABHB spending in geographical and sectoral terms was not
44
45 straightforward. A series of issues had to be confronted. First was the definition of
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47 local. This was taken to mean the ABHB area in terms of the local authority areas of
48
49 Blaenau Gwent, Caerphilly, Monmouthshire, Newport and Torfaen. Regional was
50
51 taken to mean the whole of Wales. A reason for the local and region approach was
52
53 that there were key areas of spending interest in local areas close to the ABHB
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55 hospitals, other centres and clinics. Other purchasing linkages existed in close
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3 proximity, but outside of the immediate ABHB area, and with the research interested
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5 in exploring the regional as well as local impacts of spending.
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7 Second (and see also Cabras, 2011), there were some large purchases made through
8
9 supply hubs such as Welsh Health Supplies and NHS Supply Chain. In such cases it
10
11 was possible that spending could be directed to an extra-regional hub but that in
12
13 actuality the final supply chain contract was with a firm in Wales. These specific
14
15 cases were discussed with Board officers to identify, as far as possible, the flow of
16
17 expenditures which were ultimately to local firms.
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20 Third, it was necessary to separate capital spending from that relating to ‘day-to
21
22 day’ operations. The analysis aimed to examine capital spending on construction
23
24 separately. This was because of interest in how far large capital projects for hospital
25
26 development led to managing contractors outside of Wales, still provided
27
28 opportunities for local firms as subcontractors. In the analysis extra information was
29
30 made available from a large managing contractor (involved in building a local
31
32 hospital in 2010) relating to the geographical spread of sub-contracting packages for
33
34 the capital works.
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37 Fourth, there was a research interest in examining the effects connected to ABHB
38
39 spending on staff, compared to that on goods and services. Given the labour intensity
40
41 of ABHB activities (and general NHS activity in the region) there was an expectation
42
43 of significant indirect economic activity locally, and within the region, supported
44
45 through direct staff spending.
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48 Finally, a difficult issue for the analysis was that the ‘health sector’ in Wales
49
50 undertakes a great deal of trade with itself. Elements of this relate to transactions
51
52 between the NHS and the private health sector, but also where, for example, one
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54 health board buys services from other parts of the NHS within (or outside) Wales. For
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3 these reasons part of the analysis that follows in the next section concentrates on
4
5 operational spend excluding internal health sector transactions. A rationale for this
6
7 approach was to identify goods and services purchases which involved the private as
8
9 opposed to the public sector.
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11 As highlighted above one of the objectives was to assess economic benefits from
12
13 local NHS procurement. While the analysis of ABHB records permitted the
14
15 identification of direct effects in the local and Welsh economy, the analysis of this
16
17 operational spend would not permit the identification of wider supply chain effects
18
19 linked to this spending. ABHB spending directly supported economic opportunities in
20
21 local and Welsh suppliers, however, these suppliers also spent in the local economy
22
23 supporting further economic output and employment. ABHB employees also spend
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25 wage income in the local economy and this also supports regional economic output
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27 and jobs. These ‘multiplier’ effects, which arise through local and regional income
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29 retention within the supply chain and household sector, are termed indirect and
30
31 induced-income effects respectively.
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36 The scale of these multiplier effects could be estimated in a number of ways. They
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38 could be partially measured, using a primary survey of public sector suppliers, to
39
40 establish the levels of re-spend within the defined area (see Cabras, 2011). This
41
42 information, together with the initial expenditures of the organisation could then also
43
44 be combined into an LM3 (Local Multiplier 3) method. This method, which captures
45
46 the most significant early rounds of spending, can provide an indicator of the potential
47
48 full local impact of expenditures, and has been used to estimate multipliers for a
49
50 number of projects in both the public and private sectors (Sacks, 2002).
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53 In this case, and following the estimation of ABHB spending with local and
54
55 regional suppliers, the impacts further along the supply chain, and those arising
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1
2 through induced-income effects in Wales were modelled using an existing economic
3 model of the Welsh economy. The impacts connected to construction activity (capital
4 spending linked to a new hospital) were examined separately from general operational
5 spending. The modelling framework used was derived from the Input-Output tables
6 for Wales (Jones et al., 2010). The Input-Output tables provide a useful and detailed
7 financial map of Wales plotting the flow of goods and services between industries,
8 consumers and government, highlighting the intricate inter-relationships between
9 industries in the Welsh economy. The impacts of spending with regionally based
10 suppliers can therefore be traced along all the supply chains, with the multiplier then
11 providing an estimate of *all* rounds of impact within the regional economy. This type
12 of analysis would not be possible in all regions due to the general unavailability of
13 such a modelling framework.
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29 The modelling process involved the incorporation of ABHB expenditure data
30 within the Welsh Input-Output framework to develop an 'ABHB' sector (subtracting
31 this from the existing 'Health and Social care' sector). In this way, the spending of the
32 ABHB on its suppliers and staff was fully incorporated within the model of the Welsh
33 economy, and the economic significance of its purchasing activity for the regional
34 economy could be estimated using (Input-Output) multiplier analysis. This process
35 relies on the standard Leontief-inverse multiplication to obtain the final regional
36 production outputs necessary to meet the regional demand requirements supported by
37 ABHB expenditures on suppliers and staff. This enables estimation of effects along
38 notionally infinite rounds of supply-chain purchases. Such an approach does,
39 however, rely on a set of assumptions about how industries, consumers and the
40 economy in general respond to changes in demand (see Miller and Blair, 2009, for a
41 further explanation of the method, and its strengths and weaknesses). Hence this is a
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1
2 modelled estimate of supply chain impacts arising from the identified supplier and
3 staff expenditures. Figure 1 provides a schematic representation of the methodology
4 used for estimating the economic significance of ABHB spending in Wales. The main
5 data sources and stages of the analysis are shown, together with some signposting to
6 the results tables discussed later.
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14 *Figure 1 about here*
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16 One issue that needed to be addressed in the modelled assessment was to estimate
17 the economic impacts of the ABHB's local spending in terms of employment and
18 value-added. A challenge in this respect was the treatment of expenditure on the
19 goods provided by wholesalers. Inevitably this spend category includes the value of
20 goods supplied by the wholesaler (which may or may not be local or regional), as well
21 as the wholesale margin (or add-on element). In terms of measuring impacts, only the
22 wholesale (or retail) margin was counted for the analysis, with the other component
23 allocated as the output of producers (either local, regional or imported). To assist in
24 this task information was obtained from selected wholesalers regarding their
25 purchases of supplies. For a number of suppliers, even a very broad estimate of how
26 much of a diverse product range is sourced from within Wales is extremely difficult.
27 However, in other cases, for selected products, some estimates were possible. A
28 further complication, was that a number of wholesalers with invoice addresses outside
29 of Wales serve the ABHB through Welsh depots. In these known cases, some of the
30 wholesale margin from outside of Wales, was allocated to the Welsh wholesale sector.
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51 **Health Board spending analysis**

52 This section briefly summarises ABHB headline spending in 2009-10, before
53 focusing in on the spatial and sectoral distribution of supply chain spending by ABHB
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3 area, rest of Wales and then spending outside Wales. The analysis then compares total
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5 expenditure within and outside Wales to identify the main categories of goods and
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7 services that are imported.
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10 In terms of headline expenditure figures for ABHB in 2009-10, a significant amount
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12 of total spending was related to the wages and salaries of staff, at nearly £406m. This
13
14 wage spending directly supported an estimated 10,754 full time equivalent (FTE) jobs
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16 (around 14,000 employees), representing around 7% of total employees, and just over
17
18 70% of health employees in the ABHB area. During 2009-10 non-pay operational
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20 spending was around £529m. There was an estimated total capital spend through the
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22 year of £125m, largely relating to the construction of the Ysbyty Ystrad Fawr and
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24 Ysbyty Aneurin Bevan hospitals within the ABHB area (see later).
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28 Table 1 shows the spatial distribution of total ABHB non-pay operational supply-
29
30 chain spending by sector. The first column shows that by far the greatest element,
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32 accounting for nearly £416m out of the total £529m (79%), is health spending and this
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34 includes a large element of 'transfer' payments. This includes instances where
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36 adjacent health boards have cardiology units to which ABHB patients were referred;
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38 similarly ABHB also receives referrals from other areas resulting in a health 'trade
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40 balance' between board areas (with almost 70% of health spending within Wales and
41
42 around 30% outside Wales). These health sector expenditures also refer to payments
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44 to private sector providers for items such as domicile care, nursing homes and mental
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46 health care.
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50 *Table 1 about here*

51
52 Other large items relate to chemicals and pharmaceuticals manufacture (£14.3m), and
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54 medical control equipment (15.2m) (each of which has been aggregated into the
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56 primary and manufacturing sector in Table 1), and professional/other business
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3 services (£15.6m). In both of these cases, the majority of expenditures were outside of
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5 Wales, for example at over 90% for primary and manufacturing purchases. Assuming
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7 that much of the spending on health and social care represents a form of intrasectoral
8
9 transfer payment, then it is the remaining elements of operational spend (i.e. just over
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11 £113m) which might be of more interest in examining prospects for increasing levels
12
13 of local purchasing.
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15
16 Table 1 reveals that around 24% or £124m of total ABHB operational supply chain
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18 spend was payments to firms and institutions in the local area, and with over 90% of
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20 this on health and social care activity. Of the small remainder of £9.2m around 35%
21
22 was payments to the public and local authority sector. Total ABHB spending in Wales
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24 as a whole (including within the local ABHB area) in 2009-10 was £306.5m or 58%
25
26 of total operational spending. Once again, discounting for spending in the health and
27
28 social care sector, leaves £25.2m. Of this £6.2m (24.6%) is payments for utilities,
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30 £4.0m payments to public administration and local authorities, and then with £3.2m
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32 and £3.3m respectively going to the primary and manufacturing sector, and then to
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34 real estate, renting and other business services.
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39 One observation from this initial analysis is the relatively small proportion of
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41 overall supply chain spending that is made outside of the health and social services
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43 sector in Wales. Moreover, the level of imports from outside Wales, particularly in
44
45 terms of goods and services outside the health and social care sector, is of some
46
47 interest given potential for increasing local sourcing.
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50 Figure 2 provides a visualisation of this issue with an extended number of
51
52 manufacturing sectors included to give additional detail on the level of purchases
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54 made by ABHB outside of Wales. For many sectors the percentage of total
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56 operational spending outside of Wales is greater than 90%. High import propensities
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3 are not surprising as Wales is a small open economy and with selected very specialist
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5 NHS demands (see also Walker and Brammer, 2009). Figure 2 shows a greater
6
7 probability of regional purchasing outside of these specialist demand areas, in food
8
9 and drink, printing and publishing, utilities, construction (operational not capital
10
11 spending here), hotels and catering, transport and communications, and other services.
12
13 This result is consistent with research by Mamavi et al, (2014), although noting that
14
15 Mamavi et al. investigated the numbers of contracts in spatial proximity, compared
16
17 with this analysis of expenditure values. An issue of economic development interest is
18
19 the likelihood of reducing import dependence in selected sectors in Figure 2, and how
20
21 far the import propensities exemplify real supply gaps in the local and regional
22
23 economy. Another point of interest from this analysis is the significant amounts of
24
25 spend directed to wholesalers and distributors both inside and outside of Wales.
26
27 Previous research (see North West Development Agency (NWDA), 2009) noted the
28
29 potential role of wholesalers in promoting local goods and services, and the related
30
31 local economic development outcomes. In respect of the NHS supply chain examined
32
33 here, there is scope to encourage wholesalers, particularly those in Wales, to
34
35 investigate local sources of supply where they are available. Moreover, and following
36
37 NWDA (2009), wholesalers can be well placed with knowledge of local supply
38
39 opportunities, and are useful antennae for local potential, particularly in terms of food
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41 products, and basic commodities.
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47 *Figure 2 about here*
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49 The information above suggests that it is high value-added products that are sourced
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51 outside of the local area. This possibly tells us more about the contemporary structure
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53 of the local economy, but even small levels of import displacement in selected niches
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55 within these sectors, such as in engineering, equipment and chemicals, could have
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3 important effects in terms of the support of good quality employment. This has
4
5 become a more important issue with several of the suppliers analysed subject to
6
7 greater pressure to outsource production or elements of production to lower cost
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9 locations, and with these moves tending to take higher quality employment outside
10
11 the region.
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13
14 A small number of interviews were undertaken with ABHB officials both to gain
15
16 assistance with interpreting spending information but also to better understand the
17
18 ‘environment’ surrounding procurement. These interviews revealed some interesting
19
20 issues in increasing local purchases even where goods and services were available.
21
22 For example, while there was understanding of the value in improving levels of local
23
24 purchases it was noted that the spending environment was very tight, with the NHS
25
26 under severe pressure to work collaboratively in its procurement, with the other home
27
28 countries. This meant that for a large series of classes of goods and services it was
29
30 mandatory to use established supply contracts, and use existing portals to check on
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32 nation-wide availability, and with local suppliers not always aware of the nation-wide
33
34 portals through which local business could be won. The use of larger portals and
35
36 established agreements also meant that there could be less legal challenges to
37
38 procurement decisions. Procurement officers concluded that very little business
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40 routinely went to local firms, but that processes allowed, and never excluded, the
41
42 involvement of smaller and local firms. Indeed to help suppliers there were periodic
43
44 meet the buyer events to explain opportunities and requirements. Officers noted that
45
46 trends towards e-tendering and e-auctions, potentially improved information flows to
47
48 local firms but also those further afield which could intensify competition (see also
49
50 Cabras, 2010 on these issues). All suppliers have to go through the same portals.
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3 The analysis so far has focused in on operational supply-chain spending. The year
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5 2009-10 was an interesting one to analyse because of construction of two new
6
7 hospitals. An initial analysis of ABHB purchasing records, showed that construction
8
9 (capital) spending of the Health Board was in entirety in the rest of the UK, due to the
10
11 location of the managing contractor. A corollary would be that a straightforward
12
13 analysis would simply allocate this spend as a leakage from Wales, with no local or
14
15 Welsh effect.
16

17
18 However the managing contractor (a large international firm) provided ABHB with
19
20 information on sub-contracted work packages i.e. in terms of the description and
21
22 value of the 'package' (for example, in terms of ground works, external walls and
23
24 roof, internal partitions etc.) and the location of the sub-contractors. Analysis of this
25
26 data revealed that significant sums of construction spend 'return' to Wales and the
27
28 ABHB area through the sub-contractor packages. Indeed analysis of these figures
29
30 suggested that just over 60% of the total construction expenditure was with Welsh
31
32 suppliers (including 9% which was within the ABHB Area), hence a relatively high
33
34 rate of local income retention was achieved in the case of this capital expenditure,
35
36 despite the main contractor being headquartered outside the region (see Cabras,
37
38 2011).
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43 As with operational (revenue) expenditure, identifying local spend provides some
44
45 indication of economic impact (see later) but also enables identification of key
46
47 expenditure leakages from the locality. This can then facilitate an investigation of
48
49 methods for limiting such leakages, as a route to enhancing local economic impacts.
50
51 For a total of 26 sub-contract packages awarded outside of Wales, the managing
52
53 contractor revealed that in just over half of these cases (14) the reason related to
54
55 lowest competitive tender, but that these contracts accounted for over 90% of contract
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1
2 values awarded outside of Wales. Examples of the sub-contract packages awarded
3
4 outside Wales for this reason include external walls and roof, external windows and
5
6 doors, furniture, fixtures and fittings, and intruder prevention systems. For a further 9
7
8 sub-contract packages, the reason of 'specialist supplier not in Wales' was given,
9
10 however these contracts only accounted for less than 5% by value. Examples of these
11
12 packages include, buffer rails, entrance canopies and audiology. Whilst closer
13
14 working relationships might be expected with suppliers in this sector (Mamavi et al,
15
16 2014), this illustrates that in some cases, and depending on the nature of products
17
18 required, the drive for cost savings may outweigh any benefits of spatial proximity.
19
20 However in this case, it should be noted that due to the location of the ABHB, in the
21
22 south east of Wales, a number of contractors may be 'close' in terms of geographical
23
24 proximity, but be just over the regional boundary (for example in Bristol).
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30 As discussed in the methodology section, the key drivers of the regional economic
31
32 significance of Health Board activity, are spending on health services, and the
33
34 spending on wages and salaries. Table 2 reveals the results from the modelled
35
36 assessment of ABHB's operational spending in 2009-10. The first column shows the
37
38 output (or spending) effects. The top line of Table 2 shows the direct ABHB impact
39
40 within the region. In terms of output, this is total revenue expenditure for 2009-10.
41
42 The rows beneath show the indirect and induced (multiplier) effects on other parts of
43
44 the Welsh economy (the sectors used in Table 2 are aggregated versions of those in
45
46 Table 1). These effects arise along regional supply chains as a result of the spending
47
48 within Wales on suppliers (shown in Table 1), and as a consequence of the spending
49
50 of ABHB employees which is retained in Wales.
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54 Unsurprisingly the highest levels of economic effects are seen in the health sector.
55
56 Table 2 reveals that ABHB supported around £400m of output in the Welsh health
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2
3 sector. Table 2 also shows that output is supported within manufacturing and private
4
5 sector services, as well as in the utilities and construction sectors. The total output
6
7 effect of the Health Board is estimated to be almost £1.7bn on the Welsh economy.
8
9 By comparing the final row with the top row of Table 2, one general conclusion is
10
11 that every £1m of total direct expenditure by the Health Board supports a further
12
13 £0.78m within the Welsh economy.
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16 The output effects are translated into employment effects (in terms of full-time
17
18 equivalents, FTEs) and value-added in the second and third columns of Table 2.
19
20 ABHB directly employed over 10,700 FTEs, with an associated gross value-added of
21
22 £406m. Almost 1,800 jobs are estimated to be supported within the wholesale, retail,
23
24 hotels, catering sector (some of this impact is from the direct spend with wholesalers
25
26 (margin only), whilst other impacts on this sector come through the wage spending of
27
28 the ABHB employees, and the spending of employees within supplier firms).
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31
32 *Table 2 about here*
33

34 The almost £400m of output supported within the health sector, translates into
35
36 approximately 4,500 FTE jobs, with the total employment impact summing to over
37
38 19,500. For every 1 full-time ABHB employee, a further 0.82 FTEs are estimated to
39
40 be supported within the rest of the economy. Table 2 estimates the significance of
41
42 ABHB's supplier linkages, and as noted, the main effects are in other parts of the
43
44 Health sector. ABHB 'buys' the services of other health boards (as well as from
45
46 private sector providers) on behalf of patients, and can thus be said to be supporting
47
48 activity in other parts of the health sector. However, ABHB will in turn be providing
49
50 services to other health boards, such that some of the 10,700 direct employees may be
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52 supported by the spending of other health boards. The exact 'balance' of within-NHS
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54 trade is difficult to identify, however with this information, some judgement could be
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3 made about the relative size of any adjustments to the results to account for such trade
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5 flows.

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7 To estimate impacts associated with non-health related purchases, the health sector
8
9 spending of just over £281m was removed from the modelling framework in order to
10
11 identify the Welsh non-health sector spending effects. The results showed that even in
12
13 the absence of this health sector spending, that ABHB supported an extra 2,900 FTE
14
15 jobs and £133m of value-added within other sectors of the Welsh economy.

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18 The analysis in Table 2 focuses on operational and wage spending. The capital
19
20 spend linked to hospital development also supports activity indirectly in the regional
21
22 economy. It is important to note that capital spend effects will vary tremendously
23
24 from year to year unlike operational and wage spend. However it was estimated that
25
26 the capital spending supported an estimated 1,026 FTE jobs in total in the region.

27
28
29 Table 3 uses sectoral multiplier information obtainable from the economic
30
31 modelling framework (see Figure 1), to examine the potential impact of changes in
32
33 Health Board spending patterns, using some of the sectors identified earlier which
34
35 could have high potential for import substitution. For example, the first row shows
36
37 food and drink *manufacturers* (again as distinct from food *wholesalers*). Table 3
38
39 shows that if supply chain spending on the food and drink sector in Wales increased
40
41 by £1m, then that spending would multiply to an estimated total of up to £1.65m in
42
43 the Welsh economy (depending on which part of the food sector received the extra
44
45 demand). The related employment impact of each £1m of spending, is up to 20.9
46
47 FTEs in food and drink (including multiplier effects). The higher of this employment
48
49 range is the dairy sector, whilst the lowest is the drinks sector. In the wholesale sector,
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51 each additional £1m of spending would ultimately support 22 jobs, compared with 13
52
53 in financial services.
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3 *Table 3 about here*
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7 **Discussion**
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9 The paper has contributed to the evidence base on the spatial distribution of NHS
10 spending and the amount of economic activity that is supported by this spending
11 within a local economy. While there has been interest in how changes in public
12 purchasing might lever socio-economic outcomes, this has not always been
13 accompanied by case evidence of how precisely NHS spending supports local
14 economic activity, and how changes in the spatial distribution of spending could
15 impact on the regional economy. There are challenges in analysing the local spending
16 patterns of NHS organisations, however, the analysis reveals the potential significance
17 of NHS procurement and staff expenditures to the region. The case studied here is just
18 one of seven Welsh health boards, and whilst the health boards vary in terms of
19 populations served and services provided, an approximate ‘scaling up’ of the ABHB
20 findings for all of Wales would result in significant levels of economic activity
21 supported (and further activity potentially supported through import substitution),
22 across many sectors, throughout the region.
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40 It was not possible, with the information available, to examine the size distribution
41 of firms that supplied the ABHB i.e. the extent to which, where local contracts were
42 awarded, that SMEs benefited over and above subsidiaries of larger firms. While the
43 analysis confirms the large amounts of local economic activity that are indirectly
44 supported by the spending of the case Health Board, any attempt to increase levels of
45 local purchasing and/or increase participation of local SMEs in the case examined are
46 restricted by limits in the supply side of the local economy, but also by increasing
47 pressures for more efficient procurement processes and to gain best value. Even
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3 where local opportunities might be enhanced, a narrow conception of value for money
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5 would tend to counter moves to think more strategically on how the local spending
6
7 power of organisations such as the NHS can be used to promote local socio-economic
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9 outcomes such as employment and SME support. Then while economic strategy in
10
11 Wales stresses innovation in the way public procurement is used to lever economic
12
13 and environmental outcomes, the case examined here would suggest that there would
14
15 be significant challenges and rigidities to be overcome in the process, and limits on
16
17 where local procurement can be meaningfully increased.
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21 This analysis supports the contention of Peck and Cabras (2011) on a fundamental
22
23 juxtaposition of the efficiency of procurement processes set aside an emerging
24
25 strategic imperative to better embed the spending of public sector organisations in
26
27 their local economies. However, the case reveals that the type of transactions tracking
28
29 undertaken is an important first step in revealing the specific local purchasing
30
31 opportunities which have potential to lever indirect effects on the local economy.
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34 Where these opportunities are available, a local socio-economic paradigm might be
35
36 developed alongside the dominating best value approach in terms, for example, of the
37
38 carbon footprint of delivered goods, after sales service and issues of quality, and the
39
40 aesthetic value of locally produced goods and services. In terms of capital spending in
41
42 particular contracts could specify a requirement to advertise sub-contracting
43
44 requirements through the region. A more joined up perspective in health sector
45
46 purchasing at the local and regional level is important. For example, where socio-
47
48 economic outcomes can be leveraged in terms of employment opportunities then there
49
50 could be rebound effects on to the demands for the services of the health sector.
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54 Within the Welsh public sector, some of the identified problems and restrictions on
55
56 maximising the economic benefits of public spending have been recognised. In June
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3 2015, the Wales Procurement Policy Statement (WPPS) reported progress in terms of
4 regional procurement capability, with more and better trained procurement officers,
5 and that government programmes, providing guidance to local firms on bidding for
6 public sector contracts (for example on joint bidding), had contributed to a reported
7 increase in the share of all Welsh public spending won by Welsh-based businesses
8 from 35% in 2004 to 55% (Welsh Government, 2015a).
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16 Within NHS Wales, the most significant recent development in terms of
17 procurement practice has been the reorganisation of the individual health board
18 procurement functions, and other related organisations, such as Welsh Health
19 Supplies, into the NHS Wales Shared Services Partnership (NWSSP), a product of the
20 NHS Wales Shared Services Programme. This followed a report commissioned by
21 the Welsh Government (Lewis et al, 2009) to consider how best to make progress
22 towards shared services in NHS Wales. The NWSSP aims to reduce bureaucracy and
23 achieve greater efficiency, through centralising procurement functions. There are a
24 range of possible consequences of this procurement reorganisation. For example,
25 whilst there is a policy desire to increase local firm's ability to supply the NHS, now
26 that demands have been aggregated, the drive for efficiency may add increasing
27 pressure to focus on lowest cost, although the new EU public procurement rules,
28 outlined earlier, could mitigate against such impacts. Indeed some positive sector
29 specific impacts have been observed, for example in the case of NHS Wales food
30 procurement, where the value of Welsh origin food purchases has reportedly
31 increased since 2009, largely due to the NWSSP which 'has actively encouraged the
32 supply chain to make greater use of local products and local suppliers' (Morgan,
33 2015, p.13).
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3 This reorganisation coincides with a post economic crisis environment of austerity.
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5 Therefore disentangling the organisational change effects from changes resulting from
6
7 austerity considerations would be extremely difficult. Roberts and Charlesworth
8
9 (2014) noted that in response to the global recession and fiscal consolidation, funding
10
11 for the NHS in Wales fell by an average of 2.5% in real terms in the period from
12
13 2010/11 to 2012/13. Following an increase in funding in 2013/14, Roberts and
14
15 Charlesworth predicted that funding was likely to fall in real terms the period to
16
17 2015/16. Scenarios were explored, based on different levels of funding. However
18
19 under each scenario a substantial funding gap was predicted for NHS Wales by
20
21 2025/26. This was due to demand and subsequent spending pressures generated
22
23 primarily by increases in population, long-term chronic conditions, and staff pay. In
24
25 response to this research, and to information gathered from the health boards, the
26
27 Welsh Government announced extra funding for the Welsh NHS in 2015/16, and in
28
29 2016/17 (Welsh Government, 2015b, p. 19).
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34 Issues relating to the benefits of buyer-supplier proximity have focussed around
35
36 the transactions cost economics literature and then gains through reduced agency
37
38 problems, improved governance, productivity spillovers in co-makership, and
39
40 accelerated material flows in manufacturing. These types of issues may be less
41
42 important in public as opposed to private sector procurement, but the role of NHS
43
44 procurement and spatial proximity of suppliers in driving local economic
45
46 development outcomes is an area where there has been a paucity of research. The
47
48 changing institutional arrangements, regulation around purchasing, and pressure in
49
50 terms of funding cuts means that public officials have to be more careful in making
51
52 the local economic development case, and base it on hard quantitative evidence such
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54 as that produced in this paper.
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3 Given the organisational changes within NHS Wales, and the adoption of the new
4 EU public sector procurement rules, an interesting and useful development of this
5 research would be to extend the analysis to the rest of Wales. This research could
6 explore the extent of income retention and economic activity supported within Wales
7 over time. Any particular sectoral changes in procurement and its impacts on different
8 types of firms (e.g. SMEs) could be investigated, to identify opportunities for
9 increasing the impacts of NHS procurement within the regional economy. In addition,
10 future research questions could relate to whether trends and impacts identified within
11 the NHS are replicated in other areas of public services in Wales and in other, larger
12 and less open regional economies.
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27 **Funding**

28 **Caerphilly County Council and Newport County Council**
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Figure 1: Key data sources and steps in the estimation of the economic significance of ABHB operational spending in Wales

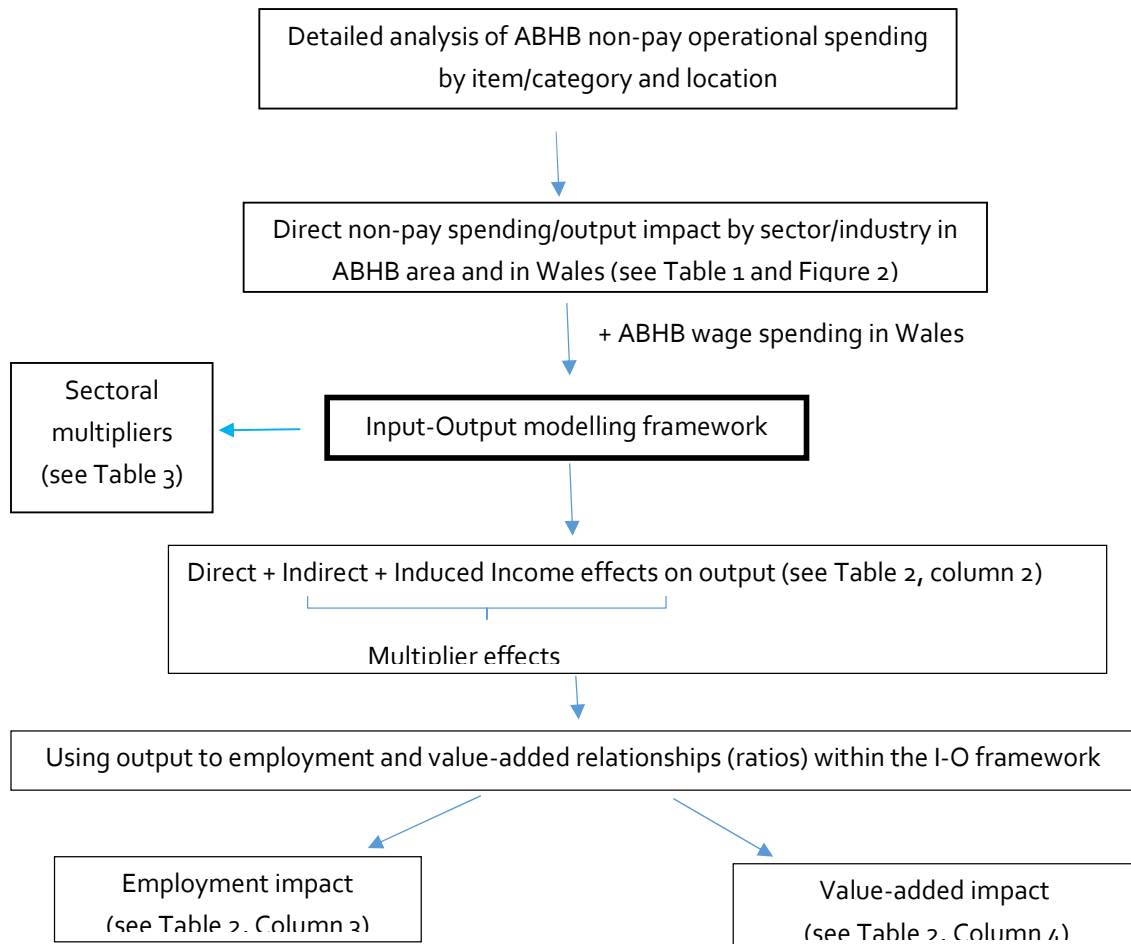


Table 1: Spatial distribution of ABHB (non-pay) operational supply chain spending in 2009-10

	£000s				%		
	Total	ABHB area	All Wales (Incl ABHB area)	Outside Wales	ABHB area	All Wales (Incl ABHB area)	Outside Wales
Primary and manufacturing	36,999	1,002	3,186	33,813	2.7	8.6	91.4
Electricity, gas, water	6,743	0	6,206	537	0.0	92.0	8.0
Construction	1,500	692	1,082	418	46.1	72.1	27.9
Repairs and retail	3,018	383	473	2,544	12.7	15.7	84.3
Wholesale – Food	2,418	29	1,297	1,121	1.2	53.6	46.4
Wholesale – Pharmacy	7,490	14	74	7,416	0.2	1.0	99.0
Wholesale – Other	14,324	416	677	13,647	2.9	4.7	95.3
Hotels, restaurants	41	28	31	10	68.3	75.6	24.4
Transport	235	192	193	43	81.7	82.1	18.3
Post & telecommunications	2,646	1	1,432	1,214	0.0	54.1	45.9
Banking, finance & insurance	1,518	182	225	1,293	12.0	14.8	85.2
Real estate, renting, other business & professional services	15,589	2,475	3,345	12,244	15.9	21.5	78.5
Legal services	3,862	0	76	3,786	0.0	2.0	98.0
Computer & related services	4,228	51	425	3,804	1.2	10.1	90.0
Public administration	4,086	3,260	3,971	115	79.8	97.2	2.8
Education	1,142	53	929	214	4.6	81.3	18.7
Health & social care	415,593	114,820	281,343	134,250	27.6	67.7	32.3
Recreation & sanitary services	330	9	18	312	2.7	5.5	94.5
Other services	6,912	409	1,537	5,375	5.9	22.2	77.8
Total	528,674	124,015	306,519	222,155	23.5	58.0	42.0
(Total less health spending)	<i>113,081</i>	<i>9,196</i>	<i>25,176</i>	<i>87,905</i>	<i>8.1</i>	<i>22.3</i>	<i>77.7</i>

Note: Column totals may not sum due to rounding

Table 2: The economic significance of ABHB's operational supply chain expenditure on the Welsh Economy.

	Output (£m)	Employment (fte)	Value- added (£m)
ABHB direct	952.8¹	10,754²	405.7³
<i>Multiplier impacts on other industries in Wales⁴:</i>			
Producers/manufacturers	53.4	511	16.5
Energy & water	37.4	39	7.2
Construction	11.9	183	4.4
Wholesale, retail, hotels & restaurants	80.1	1,798	42.6
Transport, post & telecommunications	24.4	293	11.6
Finance, business & professional services	121.6	951	86.1
Health & social care	387.9	4,532	139.4
Other public & private services	28.4	488	16.3
Total (direct plus multiplier) impacts⁵	1697.9	19,548	729.6

Notes:

1. This is the estimated as the sum of total non-pay operational expenditure (incl. depreciation) plus wage spending (employment costs).
2. Direct employment within ABHB
3. Estimated as wage costs linked with direct employment
4. Multiplier impacts estimated using the Input-Output modelling framework
5. Column totals may not sum due to rounding

Table 3 Effects of supply chain expenditure switching¹

	Output/spending multiplier	Total employment (fte) generated (including multiplier effects) per £1m direct spend
Food & drink	1.47 - 1.65	9.4-20.9
Plastics	1.5	15
Wholesale	1.58	22
Financial services	1.52	13

Note

1. Sectoral multipliers derived from the Input-Output Tables for Wales.

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Figure 2: ABHB supply chain - import propensities 2009-2010 (% of total imports by sector).

