
The Economic Significance of the Mineral Products Industry to the Welsh Economy

Report:

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Summary

The Welsh Economy Research Unit of Cardiff Business School was commissioned to undertake an analysis of the economic contribution of the mineral products industry to the Welsh economy by the Mineral Products Association, the British Marine Aggregate Producers Association and The Crown Estate in November 2014.

This report adopts a tight definition of the mineral products industry which is close to that used by the Mineral Products Association (MPA) i.e. the extraction of aggregates (from both terrestrial and marine sources), dimension stone, lime and silica sand, and the production of asphalt, cement, concrete and mortar. The definition excludes other linked elements of the sector, such as transport services and contracting.

The data review reveals that there are over 190 active mineral products industry sites in Wales. The nature of the mineral products industry in terms of land requirements, production and transport costs means that employment is distributed throughout the regional economy, sometimes in more needy parts of the regional economy, with the largest concentrations of activity in Bridgend, Flint, Gwynedd and Wrexham.

An industry survey was undertaken during the first half of 2015, with the aim of gathering information on the scale and scope of activity in each company by asking questions relating to employment, sales and purchases for the financial year 2013-14. This data was used to describe, in more detail, the industry in Wales, and also as an input into the economic modelling exercise, to estimate the economic activity supported in Wales through purchasing linkages.

The survey data was used in conjunction with other available information to estimate the direct economic contribution of the industry in Wales. The industry is estimated to support over 3,800 (full time equivalent, FTE) jobs, almost £650m of sales/turnover, and over £220m of gross value-added (GVA).

Mineral products industry – estimated direct economic contribution 2013-14

Sales/turnover, £m	649
GVA, £m	226
Employment (FTEs)	3,810

Sources: Business Register and Employment Survey (Office for National Statistics), and authors' estimates.

The report however shows that the significance of the mineral products industry extends to other parts of the Welsh economy, firstly through its purchasing linkages. In order to produce its own output, the mineral products industry requires inputs from other sectors of the economy, such as energy, transport, rental of equipment, contracting and other services. Jobs and economic activity are therefore supported in these supplier industries as a result of the operations of the mineral products industry. In addition, the industry directly employs workers, (and indirectly supports workers in supplier companies) who spend some of their wages on locally produced goods and

services. The economic modelling framework enabled estimation of these additional impacts.

In addition to its own direct economic contribution to the Welsh economy, the mineral products industry is estimated to support over £200m of output, almost £100m of GVA and 2,000 jobs in other sectors of the economy, bringing the economic significance of the industry to over £320m of GVA and almost 5,800 jobs.

Economic activity supported through purchasing linkages 2013-14

	<i>Output £m</i>	<i>GVA £m</i>	<i>Employment FTE</i>
Mineral Products direct	649	226	3,810
<i>Other sectors of the economy</i>	<i>232</i>	<i>98</i>	<i>1,960</i>
Total	881	324	5,770

Of potentially greater significance is the industry's role as a supplier of inputs to downstream industry users. The survey identified the Welsh construction sector to be the main user of mineral products industry output.

The mineral products industry in Wales is strategically important for some sectors which have key sector status, providing inputs and raw material for sectors such as advanced materials and manufacturing. The mineral products industry is also tightly connected to the Welsh construction industry which itself directly employs 88,000 people and produces over £3bn of GVA. Through these connections, it can be concluded that the presence of the mineral products industry in the regional economy is essential to the delivery of Welsh Government policy around infrastructure development, regeneration, and the support of priority sectors.

1. Introduction

The research

- 1.1 The Welsh Economy Research Unit of Cardiff Business School was commissioned by the Mineral Products Association, the British Marine Aggregate Producers Association and The Crown Estate in November 2014 to undertake an analysis of the economic contribution of the mineral products industry to the Welsh economy.
- 1.2 An investigation of the contribution of the mineral products industry in Wales is of considerable research interest, not least because so much of the regional economy uses the products of the sector either directly or indirectly. Furthermore, the sector supports economic activity in some more needy parts of the regional economy, particularly in more rural parts of Wales which have faced persistent socio-economic disadvantage. For the regional economy the mineral products industry has many of the characteristics associated with a key sector whose removal or depreciation would lead to serious consequences for many Welsh industries and their customers.
- 1.3 The outputs of the mineral products industry provide critical inputs for a series of large construction projects currently planned or in progress in Wales. Projects such as the planned development of the M4 around Newport, A465 Head of the Valleys improvements, the planned Tidal Barrage at Swansea, and expected new nuclear build on Anglesey will all be requiring the outputs of the mineral products sector. Indeed for some of these large capital projects, aggregates and linked manufactured products form one of the largest locally sourced inputs in value terms. Moreover the outputs of the mineral products sector have also been critical in some of Wales' largest capital projects in the recent past including the second Severn Crossing, the Cardiff Bay Barrage, and the Milford Haven LNG complex and the associated National Grid pipeline which is a key strategic element of the UK gas grid.
- 1.4 In addition to these major projects, the mineral products industry in Wales provides materials to support a range of day-to-day activities within the construction industry, such as for house building/improvements projects, maintenance of roads and other infrastructure. The mineral products industry in Wales therefore helps to satisfy the many and varied demands that arise from different parts of Welsh society (individuals, companies/organisations and government).
- 1.5 An understanding of the economic value of the mineral products industry is also important in providing context for changes in regulation, terrestrial and marine planning and taxes which affect many parts of the industry. Furthermore some parts of the sector will undoubtedly be affected by the evolving approach for natural resources management in Wales, with developing policy defining a wider framework for the management and use of ecosystem goods and services. In this sense policymakers need to better understand the scale of economic activity that is either positively or negatively affected by decisions.

Objectives

1.6 The research had the following objectives:

- To scope out existing evidence (from the UK) on the role of the mineral products industry in economic development in order to provide a context for the study.
- To define the make-up of the mineral products industry in the Welsh economy.
- To analyse available current economic data relating to producers/extractors of mineral products in Wales, covering the level of economic activity in terms of gross value-added¹ and employment.
- Drawing on this analysis and a survey of selected mineral products industry players in Wales, to develop an analysis of how the sector contributes to the regional economy.

Definition

1.7 This report adopts a definition of the mineral products industry which is close to that used by the Mineral Products Association (MPA) i.e. the extraction of aggregates (from both terrestrial and marine sources), dimension stone, lime and silica sand, and the production of asphalt, cement, concrete and mortar. While not the focus of this report, it should be noted that secondary/recycled aggregates also make an important contribution to the broader sector, and end users will often draw on both primary and secondary materials. It can be difficult to separate these activities and their contributions, as some companies will produce both primary and secondary materials.

1.8 The MPA definition also includes an element of road transport, and contracting road work undertaken by asphalt producers. These activities are not included within the definition used in this report due to the absence of data on the share of road transport etc. that relates specifically to these producers.

1.9 Unfortunately, the activities outlined above do not fit well within Standard Industrial Classifications (2007) meaning that estimating the size of the sector in Wales is a difficult process.

Economic modelling

1.10 One of the key issues of the research was to analyse the amount of activity that the defined mineral products industry supports indirectly. For example, the mineral products industry buys the goods and services provided by other Welsh industries. Similarly the wages and salaries paid in the mineral products industry support further rounds of spending on Welsh goods and services.

1.11 To inform the analysis, a survey was undertaken in collaboration with the Mineral

¹ Gross value added is the value of output less the value of intermediate consumption/purchases, and can be used to measure the contribution of each individual producer, industry or sector to the economy.

Products Association (and covering both members and non-members) to gain an insight into size of operations, sales, earnings, but very importantly purchasing patterns and extent to which subcontracts and supply linkages are with Welsh firms as opposed to firms in other parts of the UK. There was some expectation that the mineral products industry in the region would be relatively well embedded in terms of its local sourcing, and that the capital intensive nature of elements of this sector would lead to relatively high productivity and higher earnings.

- 1.12 In examining the economic impacts associated with existing mineral products industry activity it is necessary to consider the regional (i.e. Welsh) level effects of ‘removing’ the sector, but also changes in the level of existing activity brought about by changes in the demand for its products. For example, in analysing the economic significance of changes to the scale of industry operations, it is first necessary to focus on the direct consequences associated with the activity. Direct effects can be expressed in terms of output (or spending), value added and employment. An important first objective was to estimate the current contribution of the sector in terms of employment and output to the regional economy.
- 1.13 To estimate the GVA and employment within the region that could be directly connected to the local spending of the mineral products industry in Wales the research used information incorporated within the Welsh Input-Output Tables², supplemented by data derived from MPA members in Wales. Importantly the analysis would then need to estimate the economic effects associated with a reduction in regional supply chain opportunities linked to a reduction in the scale of industry operations, and then to give consideration to induced income effects i.e. reduced spending power of households. The Welsh Input-Output tables provide a means of estimating the indirect and induced effects (multiplier) on the regional economy.

Structure of the report

- 1.14 The remainder of the report is structured as follows. The second section summarises previous analyses of the economic contribution of the mineral products industry in the UK. The third section provides an overview of the industry in Wales and describes economic data pointing to the direct contribution of the mineral products industry in the Welsh economy. The fourth section summarises the findings from the survey undertaken in Wales of mineral products industry players, describing some of the characteristics of the industry. While the third and fourth sections of the report focus more on direct effects, the fifth section provides a modelled economic assessment of the activity that is supported by mineral products industry purchases of goods and services in the regional economy. There is also some discussion here of the extent to which the mineral products industry supports activity in sectors that it sells to in the regional economy. The final section of the report provides conclusions.

² See http://business.cardiff.ac.uk/sites/default/files/IO_2007_Final_30_6.pdf for further information.

2. Significance of the mineral products industry

Introduction

- 2.1 This section of the report summarises a selection of previous work which has examined the economic significance of the mineral products sector in the UK. One of the main issues that has confronted studies surrounds the definition of the sector, and with a widespread recognition that focusing merely on the employment supported in quarrying and related products manufacture tends to understate the strategic significance of the sector to the UK economy given the wider activities that its products support. This is particularly important because of the role of the sector in the provision of key inputs to a large number of downstream sectors.
- 2.2 This factor was identified in an early benchmark study by the British Geological Survey (2004)³ which provided a strong evidence base supporting the significance of the minerals industry for the UK economy.
- 2.3 A factor hindering analysis of the industry is also that it is comprised of large vertically integrated multinationals whose activities embrace primary production, processing and in some cases secondary product use, and this can make it difficult to disaggregate activity in terms of specific commodities and activities.
- 2.4 Where economic impact assessments appear to agree is on the fact that the economic significance of mining and quarrying and related primary processing are often not fully appreciated in policy making circles, at regional and national level.
- 2.5 For example, in Wales there has been a policy focus on a selected series of ‘priority sectors’ (defined by Welsh Government to include sectors such as construction, advanced manufacturing and materials, energy and environment, and tourism). Unfortunately the basis for the selection of industries as being key has not always been made clear, for example, in terms of the key sector potential to support intra-regional trade, to support activity in more needy parts of the regional economy, and to provide good quality full time employment. The mineral products sector would appear to have the characteristics to be separately identified as a key sector given its record of relatively high labour productivity and the fact that it provides critical inputs to some of the key sectors that have been identified by Welsh Government including construction, and advanced manufacturing. Indeed it is the inputs from the mineral products sector which help define some downstream sectors as high value-added in character.

Impacts of mineral products industry at UK level

- 2.6 These and related points have been made in a series of reports on the mineral

³ See:

https://www.google.co.uk/?gfe_rd=cr&ei=XdisVaT4LZL98wfYyLCQBg&gws_rd=ssl#q=British+Geological+Survey+%2B+mineral+products+%2B+2004

products industry in the UK. For example, Capital Economics (2012)⁴, using survey data from a sample of MPA members, found the mineral products sector in the UK:

- Employed directly between 33,000-39,000 workers
- Developed sales of an estimated £9.0bn and was connected to an estimated £4.0bn of GVA
- Was characterised by relatively high labour productivity and provided tax revenues to the Exchequer of over £1.0bn per annum.

2.7 Part of the Capital Economics research did provide estimates of activity in the Welsh mineral products sector showing that:

- The 'extraction' element of the industry employed an estimated 400-500 people
- Value-added products attached to the extraction sector employed 800-900 and allied contracting activity employed a further 600-700 people
- Overall the mineral products industry in Wales directly employed an estimated 1,800-2,100 people.

2.8 The employment analysis later in this report, and based on Office for National Statistics data, shows higher figures for the industry in Wales in 2013 (see Table 3.1).

2.9 Importantly the research from Capital Economics revealed the relatively strong productivity characteristics of the industry, revealing that each worker in the UK mineral products industry generated around £110,000 of gross value-added per annum (no corresponding figure for Wales was reported).

2.10 The Capital Economics research also sought to estimate at a UK level the extent to which the mineral products industry supported activity indirectly through its purchases of goods and services. They estimated that around 37,000 jobs were supported in the mineral products industry supply chain, and £2bn of GVA. In the Welsh case it was estimated that the mineral products industry indirectly supported 1,500 jobs, £100m of GVA and £300m of turnover. An updated estimate of indirect economic activity supported in Wales can be found later in Chapter 5.

2.11 A further analysis of the economic contribution of the mineral products industry in the UK was undertaken by the Mineral Products Association in 2015⁵. One of the premises of this analysis was the industry's role as an economy 'enabler', and the report also stressed the practical problems of assessing the economic contribution of the industry because of its involvement in different parts of the UK supply chain.

2.12 MPA (2015) estimated that the UK mineral products industry generated £6.7bn of GVA in 2013 and generated over 80,000 jobs. Table 2.1 reveals the main findings from the MPA (2015) study.

⁴ See http://www.mineralproducts.org/documents/The_foundation_for_a_strong_economy.pdf

⁵Economic and Market Briefing, No. 24, MPA, June 2015.

Table 2.1 GVA and Employment in the UK Mineral Products Industry (2013)

	GVA £m	Employment
Resources	3,314	20,926
Rock	1,660	9,929
Sand & gravel (terrestrial and marine)	1,654	6,759
Support activities	0	4,238
Products manufacture	2,270	31,734
Cement	100	1,986
Lime and plaster	12	552
Concrete products (construction)	800	13,599
Ready mix concrete and mortar	602	2,487
Articles of concrete, plaster and cement	64	241
Cutting , shaping and finishing of stone	256	6625
Asphalt	436	6244
Contracting and road freight	1,086	29,195
Asphalt contracting by mineral producers	175	5,923
Road freight by mineral producers	911	23,272
Total mineral products industry	6,670	81,854

Derived from MPA (2015)

2.13 As a further dimension of significance, the MPA (2015) report estimates the GVA and employment supported in ‘first use’ markets, i.e. those sectors of the economy which use the outputs of the mineral products industry as inputs to their own production processes. The construction sector is by far the most significant first use market, however also included are chemicals, pharmaceuticals, food and glass manufacturing. (In Wales another example of a first use market is the steel industry which uses limestone within its production process.) In total, first use markets were estimated to support almost £163bn of GVA and more than three million jobs in the UK.

2.14 There has been rather less research focusing on the regional contribution of the mineral products industry across the UK. A good example of a sub-national analysis is Somerset County Council (2014)⁶. This study revealed:

- 25 quarry operators in Somerset in 2013
- 950 separate industry users of quarry products in the Somerset economy
- 765 contractors working for quarry operators.

⁶ For Executive Summary see

<http://www1.somerset.gov.uk/council/board43%20scrutiny%20place%5C09.09.14%5C2014%20September%209%20Item%2011%20Paper%20F%20The%20Benefits%20of%20Quarrying%20to%20the%20Somerset%20Economy.pdf>

- 2.15 The report showed that while direct employment in Somerset based quarrying was just 400, contractors supplying quarrying operations employed 4,500 people, and those using quarry products (i.e. first use markets) employed 4,800. It was estimated that the mining, quarrying and utilities sector in Somerset was worth £300m of GVA. While it might be argued that downstream sectors have the ability to import mineral products from overseas in the absence of a strong UK industry, it must be borne in mind that these products can be expensive to transport, and importing large volumes may lead to upward pressure on prices in these same downstream sectors.
- 2.16 These examples of prior analysis all describe an economically important mineral products industry, and an industry whose strategic impacts are not always fully recognised by policymakers. The prior analyses reviewed above also reveal some variation in what is, and what is not considered part of the industry, and this makes comparative analysis quite difficult.

3. Mineral Products Industry in Wales

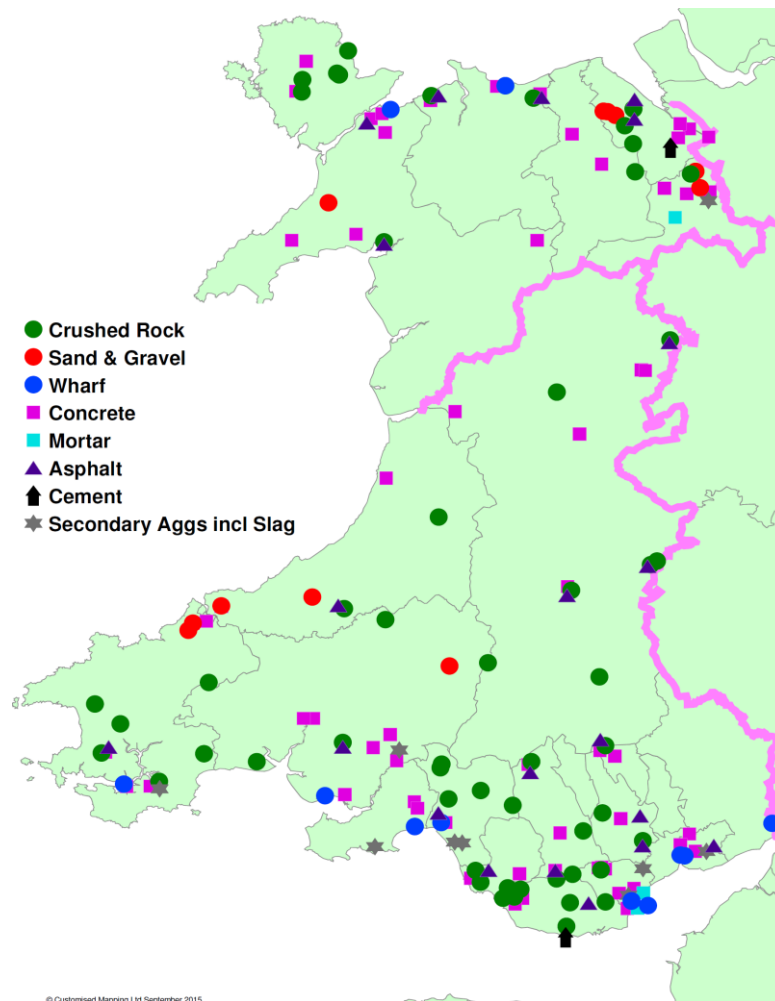
Introduction

- 3.1 This section of the report provides an analysis of the mineral products industry in Wales. The focus is on the resources and products manufacture sector (as defined in Section 1 of this report). The first part of this section provides a brief overview of the industry in terms of site locations, the mix of activity types, and flows of products within the UK. This is followed by an analysis of employment, with limited information available on the value of output in key elements of the mineral products industry at the regional level.

Industry overview

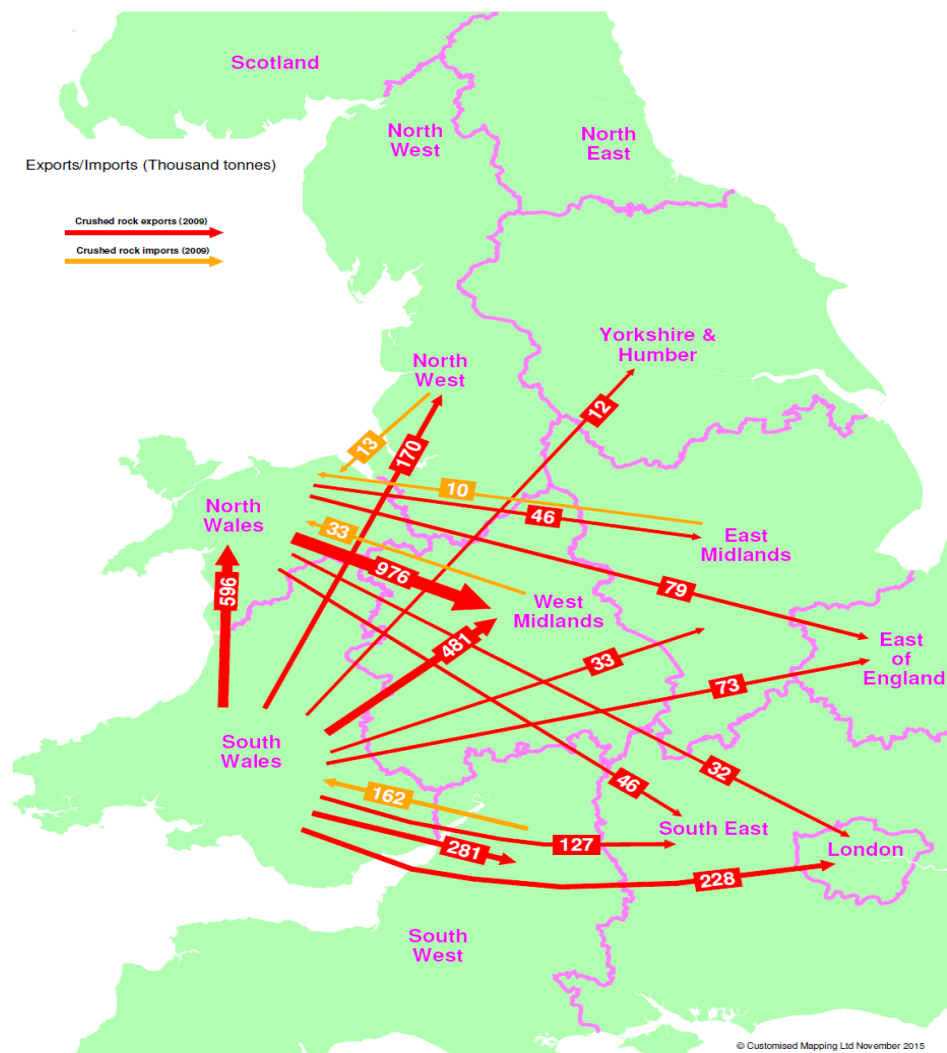
- 3.2 As previously discussed, the mineral products industry includes resources and product manufacturing activities. Figure 3.1 shows the distribution of mineral product industry sites around Wales, and illustrates the diversity of activity within the industry (see also Table 3.5). The pattern of activity is similar to the general economic map of Wales, with concentrations of sites in South East and North East of Wales (see also Figure 3.4).
- 3.3 One interesting feature of the Welsh mineral products industry is the extent to which its outputs are traded within Wales, and also outside Wales. The industry typically produces low value to weight products that would suggest local use where possible, due to relatively high transportation costs. Indeed it is the local availability of such products that helps support the Welsh construction industry. However the presence of specific high value mineral resources, for example in the form of high polished stone value (PSV) sandstone used in road surfacing (to produce a road surface with a high skid resistance value), results in some of these products being distributed more widely.
- 3.4 Figures 3.2 and 3.3, however, reveal key trade flows of resources, illustrating that the Welsh mineral products industry is also important in supporting economic activity outside the regional boundary.
- 3.5 In Figure 3.2 trade flows of crushed rock are dominated by Welsh intra-regional trade (from South to North Wales) and by exports to the West Midlands. However products from Wales are also exported to markets including London, the South East of England, East of England and Yorkshire and Humberside. This very much reflects the value and importance of some of the mineral resources produced in Wales to the wider regional markets, particularly the high PSV aggregates.
- 3.6 Figure 3.3 reveals inter-regional flows of sand and gravel in and out of Wales. Dominant here are marine-won sand and gravel 'imports' into South Wales totalling an estimated 624,000 tonnes in 2013, and with 54,000 tonnes going into North Wales. Another important flow is an estimated (in 2009) 126,000 tonnes of land-won gravel exports from North Wales into England.

Figure 3.1 Mineral products industry sites in Wales, 2015.



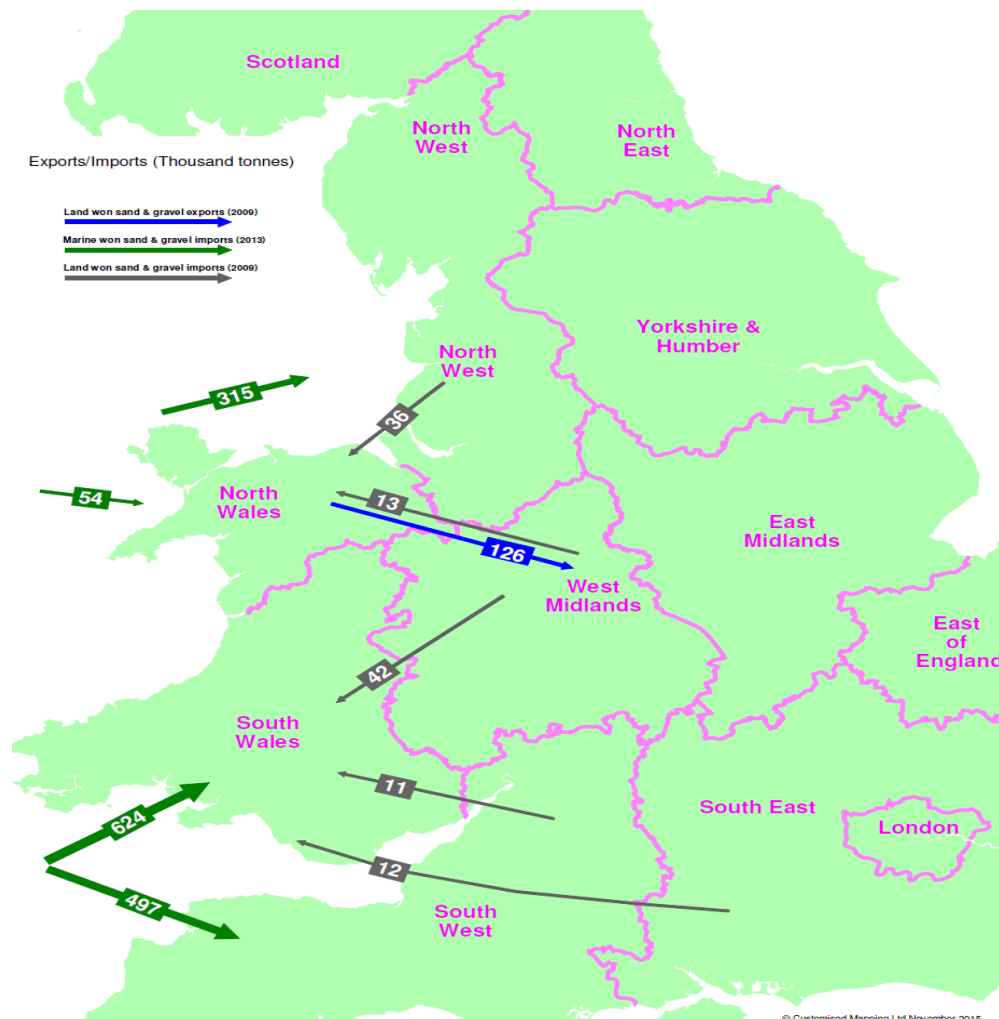
Source: DCLG

Figure 3.2 Crushed Rock flows in and out of Wales >10,000 tpa



Source: DCLG

Figure 3.3 Annual sand and Gravel flows in and out of Wales >10,000 tpa



Source: DCLG

Sector employment

- 3.7 Table 3.1 shows employment in the defined elements of the resources and products manufacture sector in Wales. This was estimated from the *Business Register and Employment Survey* (BRES) to be around 4,000 in 2013. The primary resources element (comprising SIC 2007, 0811, 0812 and 0990) employed around 1,000 people. Welsh employment in the resources sector has been fairly stable since the financial crises on 2007-08. For example, in 2009 employment was also around 1,000.

Table 3.1: Employment- Welsh Mineral products Industry, 2013

	2013 employment	Employment growth 2009-13	Share GB employment (%)	Location quotient ^(see note)
0811 : Quarrying of ornamental and building stone, limestone, gypsum, chalk and slate (including crushing and breaking of stone)	500	-6.7	10.7	2.5
0812 : Operation of gravel and sand pits; mining of clays and kaolin (including gravel and sand breaking and crushing)	400	-3.3	6.3	1.4
0990 : Support activities for other mining and quarrying	*	200.0	2.3	0.5
2351 : Manufacture of cement	200	165.6	11.9	2.7
2352 : Manufacture of lime and plaster	*			
2361 : Manufacture of concrete products for construction purposes	700	31.5	6.2	1.4
2362 : Manufacture of plaster products for construction purposes	*			
2363 : Manufacture of ready-mixed concrete	300	-7.9	5.9	1.4
2364 : Manufacture of mortars	*	-50.0	1.1	0.2
2365 : Manufacture of fibre cement	*	-33.3	1.4	0.3
2369 : Manufacture of other articles of concrete, plaster and cement	*	116.7	4.0	0.9
2370 : Cutting, shaping and finishing of stone	600	29.3	9.0	2.1
2391 : Production of abrasive products	100	0.0	4.9	1.1
2399 : Manufacture of other non-metallic mineral products n.e.c.	1,100	16.1	19.1	4.4
Overall	4,000	15.1	8.0	1.8

Source: Derived from BRES, ONS. Note some columns will not sum due to rounding. * Implies small or zero employment recorded in the sector. It is important to note that BRES is a business survey, and employment estimates are subject to sampling and non-sampling errors.

Note: Location Quotients (LQs) are calculated by comparing the percentage of employment in an industry in Wales with the percentage of employment in the same industry in Great Britain, and can be used as an indicator of relative regional industrial specialisation. A LQ of 1.0 would mean that Wales and GB have equal shares of employment within the industry, and a LQ which is greater than 1.0 means that Wales has a higher concentration of employment in the industry compared with GB as a whole (and vice versa for LQs less than 1).

3.8 The employment estimates in Table 3.1 are rounded to the nearest 100 for reporting purposes. However, it is important to note the likelihood that some employment categorised by BRES as products manufacture is actually within the resources element of the sector such that the estimated distribution of Welsh employment within the mineral products industry in Table 3.1 should be treated with care.

3.9 Tables 3.1 and 3.2 reveal overall employment in the mineral products industry grew by around 500 between 2009 and 2013. There are some elements of the products

manufacture sector where Welsh employment is either zero or negligible. Much of the employment in products manufacture is focused in just three sectors: manufacture of cement products; cutting, shaping and finishing of stone; and manufacture of other non-metallic mineral products. Wales has, according to BRES, very low employment in sectors such as manufacturing of lime and plaster, plaster products, mortars and fibre cement.

- 3.10 The second column of Table 3.1 reveals the estimated growth of different parts of the mineral products sector in Wales. Office for National Statistics data (not shown in the Table) revealed that that employment in some parts of the sector (including firms making ready mix concrete, and operators of sand and gravel pits) fell during the early stages of the economic downturn (2007/8). However between 2009 and 2013 overall employment in the mineral products sector has increased by an estimated 15.1%. Some sectors have shown much stronger growth over this period including manufacture of cement (165%), concrete products (32%) and cutting, shaping and finishing of stone (29%). Employment in the resources sector was slightly lower in 2013 compared to levels reached in 2009.
- 3.11 The third column of Table 3.1 shows the share of GB activity in each mineral products sector in Wales. For example the BRES employment data reveals that Wales had an estimated 11% of GB employment in quarrying (0811) and around 6% in operation of gravel and sand pits. Given that Wales has around 4.4% of GB employment overall, this might be taken to reveal that Wales has over twice as much employment in quarrying compared to the GB average; i.e. something of a specialisation in the sector. This is the basis of the figures in the final column which are location quotients for each part of the mineral products sector in Wales. This reveals that in comparison to GB as a whole Wales has a relative concentration of economic activity in areas such as quarrying, cement manufacturing, cutting shaping and finishing of stone, and other non-metallic mineral products.
- 3.12 Table 3.2 reports on the proportion of total Welsh employment in the mineral products industry. This was estimated at around 0.33% of Welsh employment in 2013. It is important to emphasise that this is direct employment, which does not fully reflect the role of this strategic sector in supporting activity both up and down the value chain i.e. from industries that the mineral products sector purchases from, and in industries that the sector sells to, which may be largely dependent upon the supply of mineral products in order to realise their own value.

Table 3.2. Mineral Products Industry Employment as % Total Welsh Employment, 2009 - 2013

	2009	2010	2011	2012	2013
Mineral products industry	3,440	3,343	3,448	3,642	3,960
Wales	1,171,134	1,165,520	1,170,473	1,178,189	1,186,863
Share (%)	0.29	0.29	0.29	0.31	0.33

Source: ONS, BRES

- 3.13 The *Business Register and Employment Survey* is only one indicator of employment supported in the mineral products industry. Information on employment supported in Welsh minerals extraction is also available through the *Annual Minerals Raised Inquiry* (see Business Monitor PA1007, February 2015)⁷. This reports employment using a different approach, by revealing the number of persons employed directly and indirectly during a given normal working week in a given year. Included in these figures are working proprietors, drivers of external and internal haulage and other vehicles (whether or not on the quarry payroll) and persons employed by contractors and sub-contractors to carry out drilling, blasting, plant installation and modification etc. It is important to recognise this is different from BRES in terms of considering both direct and indirect employment supported in the sector i.e. through supply chain linkages. The latest data for 2013 revealed all direct employment in Welsh minerals extraction was 638, of which most was supported in the quarrying of limestone, sandstone and igneous rock. However, all employment supported was an estimated 3,229, with this including employment in contractors and subcontractors. A large element of the latter figure was an estimated total of around 1,500 drivers.
- 3.14 Table 3.3 reveals a further characteristic of employment in the Welsh mineral products industry (using BRES data). The table reveals the proportion of employment in the industry which is part-time as opposed to full-time. This shows that for the mineral products industry the proportion of part time employment varies by sector between 1.3% and 8.6%. This is relatively low compared to an overall Welsh average in 2013 of an estimated 35.2%. The mineral products industry thus provides an increasingly important 'commodity' for Wales - full-time employment opportunities.
- 3.15 The nature of the mineral products industry in terms of land requirements, production and transport costs means that employment is distributed throughout the regional economy, sometimes in more needy parts of the regional economy. Figure 3.4 reveals how the estimated 4,000 jobs reported in BRES in Table 3.1 are distributed across Welsh unitary authorities. This shows that the largest concentrations of activity are in Bridgend, Flint, Gwynedd and Wrexham (see also Figure 3.1).

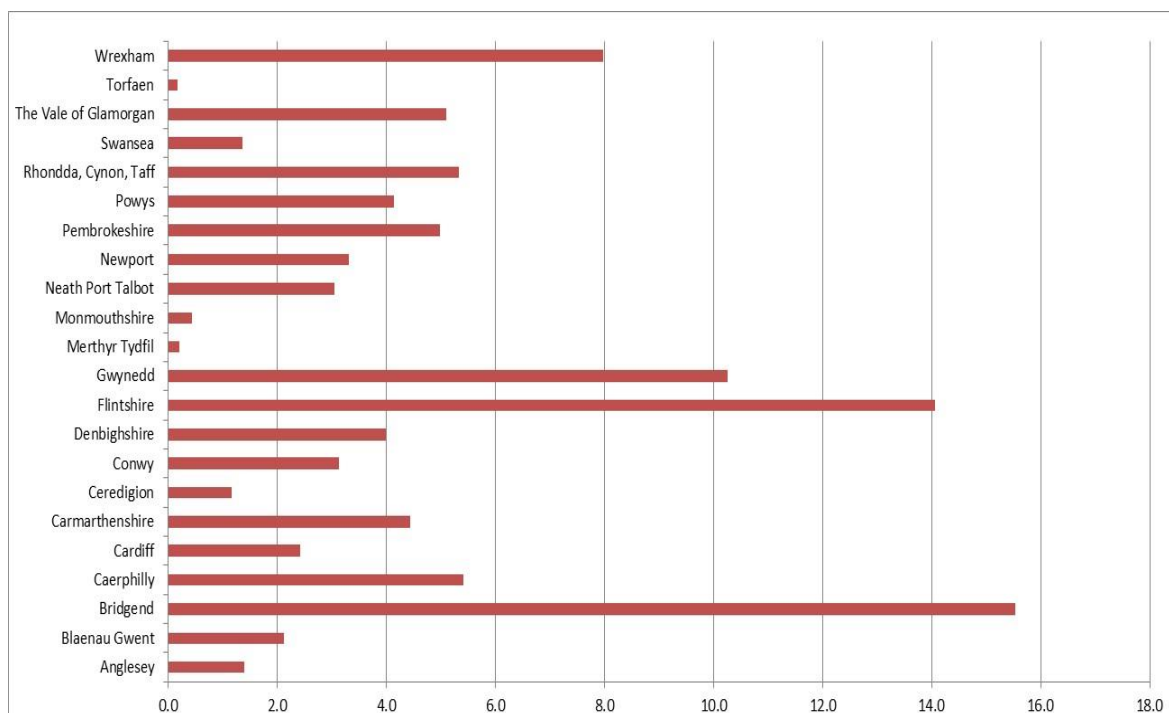
⁷ See Mineral Extraction in Great Britain, 2015 available at <https://www.gov.uk/government/statistics/mineral-extraction-in-great-britain-2013>

Table 3.3 Part-time employment as a % employment in the mineral products industry in Wales, 2013

	PT/total %
0811 : Quarrying of ornamental and building stone, limestone, gypsum, chalk, slate	1.7
0812 : Operation of gravel and sand pits; mining of clays and kaolin	1.3
0990 : Support activities for other mining and quarrying	*
2351 : Manufacture of cement	1.3
2352 : Manufacture of lime and plaster	*
2361 : Manufacture of concrete products for construction purposes	7.2
2362 : Manufacture of plaster products for construction purposes	*
2363 : Manufacture of ready-mixed concrete	5.1
2364 : Manufacture of mortars	*
2365 : Manufacture of fibre cement	*
2369 : Manufacture of other articles of concrete, plaster and cement	7.7
2370 : Cutting, shaping and finishing of stone	8.6
2391 : Production of abrasive products	4.9
2399 : Manufacture of other non-metallic mineral products n.e.c.	3.8
Wales average	35.2

Source: ONS, BRES. Note * implies negligible part time employment reported in BRES.

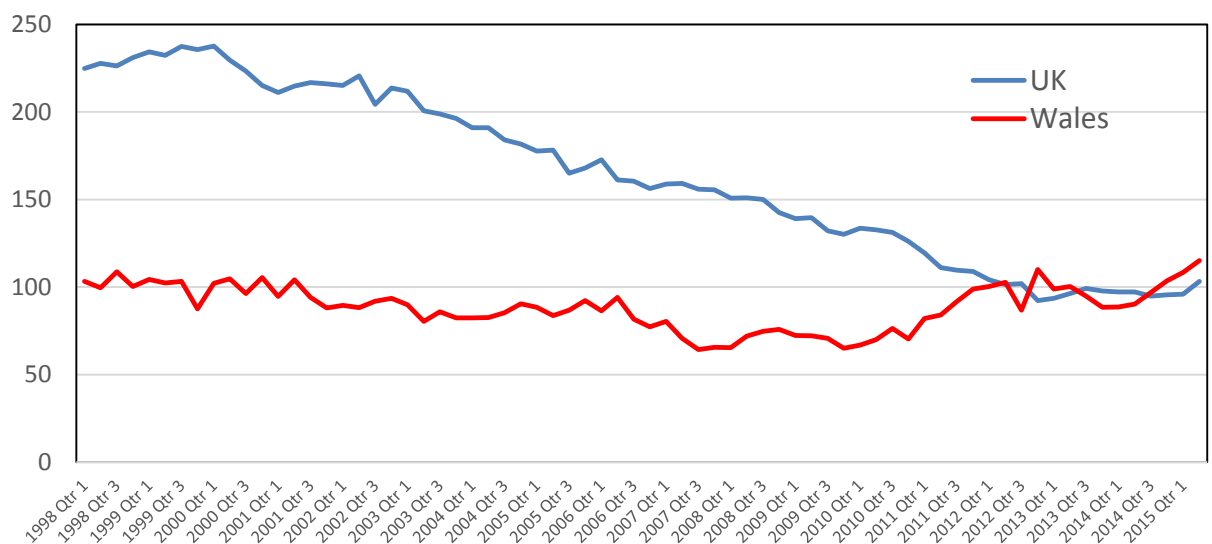
Figure 3.4 Distribution of Mineral products Industry Employment across Wales, 2013 (% by Unitary Authority)



Source: Derived from figures from BRES, ONS.

- 3.16 The analysis above has focused on employment. There is rather less information available relating to the value of output and gross value added (GVA) in the mineral products industry. This is largely because of problems disentangling the defined industry from other parts of the Welsh economy. For example there is no separate index of quarrying activity in Wales, but rather the Welsh index of mining and quarrying output shown in Figure 3.5 includes information on mining (largely open-cast coal).
- 3.17 However, the index values still provide some useful information on activity trends in the larger sector. It is estimated that in employment (not value) terms, quarrying and operation of sand and gravel pits makes up around 60% of employment in the whole of the mining and quarrying sector in Wales. It is also accepted here that the factors affecting output trends in open cast mining are quite different from those affecting the quarrying sector.
- 3.18 Figure 3.5 reveals that the index of output in the Welsh mining and quarrying sector showed a steadily increasing trend in the period after the financial crises. This compares positively with activity in the UK overall which has shown more of a downward trend. According to the index of mining and quarrying output, activity levels in the Welsh sector in the second quarter of 2015 were around 15% higher than they were in 2012, whereas the UK index in the same quarter was only 3% above 2012 levels.

Figure 3.5 Welsh Index of Output in the Mining and Quarrying Sector, 1998-2015, (2012=100)



Source: Derived from STATSWales (Welsh Government)⁸

⁸ See <https://statswales.wales.gov.uk/Catalogue/Business-Economy-and-Labour-Market/Economic-Indices/Indices-of-Production-and-Construction>

- 3.19 The *Annual Business Survey* (ABS) produced by the Office for National Statistics provides some information on the value of output and GVA supported in the mineral products industry in Wales. The sector in the ABS labelled 'Other mining and quarrying' largely corresponds with the resources element of the mineral products industry in Wales (defined above). This was estimated in 2012 to account for £216m of turnover, £83m of GVA and £22m of employee remuneration. Full data for this sector for 2013 was not available, but did show that turnover in 2013 fell to £115m.
- 3.20 The ABS data also suggests that the 'Other mining and quarrying' sector in Wales represents about 8% of UK GVA in this sector. For elements of the products manufacture part of the mineral products industry it is more difficult to draw out useful information from the ABS. Table 3.4 shows all Welsh activity in 'Other non-metallic mineral products' (SIC 2007 Sector 23, but note SIC 23 includes some activity not included in the sector definition used in this report). The whole of the sector in Wales in 2013 supported £615m of turnover, £211m of GVA, undertook £410m of purchases and provided employee remuneration of £127m. On the basis of employment information reviewed earlier in this section, it is estimated that the products manufacture element of the mineral products industry accounts for around two thirds of the activity total in Other Non-Metallic Mineral products in Wales.

Table 3.4 Economic value data, mineral products industry in Wales

		Turnover	GVA	Purchases	Remuneration
Other mining and quarrying (SIC 2007 08) 2012	Wales	216	83	124	22
	UK	3,506	1,089	2,331	521
	Wales %	6.1	7.6	5.3	4.2
Non-metallic mineral products (SIC 2007 23) 2013	Wales	615	211	410	127
	UK	11,514	3,570	7,876	2,269
	Wales %	5.3	5.9	5.2	5.6

Source: Annual Business Survey, ONS

Note: 2013 data for 'other mining and quarrying' was not available for GVA and purchases, so 2102 data is included in the table.

- 3.21 Finally, Tables 3.5 and 3.6 provide some basic count data on activity in the mineral products industry in Wales. The material in Table 3.5 reveals activity by sites, and allows for the fact that some of the larger players in the industry in Wales operate more than one activity.
- 3.22 Table 3.5 reveals that there are an estimated 193 active sites in Wales (see also Figure 3.1). Of these 70 are quarries (although there are a further 52 quarries which are either dormant or reported as closed down). There are 25 facilities producing road asphalt, and 63 sites producing concrete or mortar. In parts of the mineral products industry there have been long term trends towards industry consolidation in both the UK and overseas. While Table 3.5 evidences a large number of sites, some of these

are co-located and many are operated by the same organisations. For example:

- Of the 70 active quarries reported in Table 3.5 some 47% are operated by just four firms
- Of the 25 asphalt sites over 80% are operated by just four firms
- Of the total 193 active sites in Table 3.5 around 65% are operated by six firms, and with the largest two firms in the sector accounting for around 40% of active sites.

3.23 One potential consequence of the above is that employment in the mineral products industry in Wales would be very sensitive to a reduction of activities of just a few very large companies.

Table 3.5 Mineral products industry sites in Wales, 2014-15

Site type	Number
Quarries Active	70
Quarries Dormant/Closed	52
Railheads	1
Asphalt	25
Concrete & Mortar	63
Cement works	2
Secondary aggregates	13
Slag	2
Wharfs Active	12
Wharfs Dormant	7
Precast Blocks	2
Reinforcing steel	3
Total	252
Total active	193

Source: Mineral Products Association

3.24 Table 3.6 provides another indication of the spread of activity but this time in terms of registered offices/trading offices of firms in Wales in the mineral products industry which have a primary SIC code in one of the designated mineral products industry SICs (i.e. main activity). Table 3.6 reveals that in terms of registered offices/trading offices there are around 51 in the resources sector, and around 64 in the products manufacture sector. Note that the information in Table 3.6 does not include firms which might register one of the mineral products categories as a secondary line of activity.

3.25 The data in Table 3.6 is derived from the Jordan's FAME database. For a small number of firms in the sample derived it was possible to develop estimates of sector employment productivity (i.e. here sales per employee in the sector). For example, in the quarrying sector sales per employee ranged between £105,000 and £178,000, while for operation of sand and gravel pits sales per employee were around £172,000.

Table 3.6 Registered Offices in Wales in the Mineral Products Industry

SIC and activity	Number
0811 : Quarrying of ornamental and building stone, limestone, gypsum, chalk, slate	33
0812 : Operation of gravel and sand pits; mining of clays and kaolin	8
0990 : Support activities for other mining and quarrying	10
2351 : Manufacture of cement	2
2352 : Manufacture of lime and plaster	0
2361 : Manufacture of concrete products for construction purposes	14
2362 : Manufacture of plaster products for construction purposes	1
2363 : Manufacture of ready-mixed concrete	5
2364 : Manufacture of mortars	0
2365 : Manufacture of fibre cement	4
2369 : Manufacture of other articles of concrete, plaster and cement	8
2370 : Cutting, shaping and finishing of stone	22
2391 : Production of abrasive products	3
2399 : Manufacture of other non-metallic mineral products n.e.c.	5
Overall	115

Source: Derived from Jordan FAME database

4. Survey of the Welsh Mineral products Industry

4.1 Introduction

- 4.1 Section 3 of the report has provided useful data to outline the direct significance of the mineral products industry in terms of employment and output, and some historical data which has allowed an identification of industry trends. Whilst this data is useful and interesting, it does not provide a full picture of how the sector fits into the Welsh economy, in terms of its trading relationships (sales and purchases) with other parts of the local economy. In order to gain some insight into these activities, and to facilitate the economic modelling exercise, a survey of the mineral products industry in Wales was undertaken during the period February to June 2015. This section outlines the survey process and provides some summary data obtained from the survey returns.

4.2 Survey process

- 4.2 A survey questionnaire was derived in conjunction with the project steering group, and this is reproduced in Appendix 1. The aim of the survey was to gather information on the scale and scope of activity in each company by asking questions relating to employment, sales and purchases for the financial year 2013-14.
- 4.3 A total of 36 companies were identified in Wales which covered a large share of the sector, and the survey was emailed to each of these companies. These largely included members of the Mineral Products Association (MPA) with operations in Wales, but also some non-MPA members. As already outlined, many of these companies operate multiple sites within (and outside) Wales, and some companies contacted may belong to the same holding company group.
- 4.4 The companies received a number of follow up reminders, and by June 2015, 13 surveys had been returned (a 36% response rate). The amount of data contained within the surveys was variable. Some complete surveys were obtained, however in other cases there was missing information. In cases where information was missing, or where information needed to be checked, survey respondents were contacted by email and asked for further data and/or clarification of information provided.

4.3 Summary of findings

- 4.5 This section summarises the information provided from the surveys which contained complete or partial information which was useable for the research. This information is shown in Table 4.1. The surveys returned together represented almost 70 sites in Wales. Whilst the average number of sites per company was 5, in reality some had one or two sites, and others had significantly more.
- 4.6 Table 3.5 has earlier shown there to be just over 190 active sites in Wales, hence the survey returns account for around 36% of these sites. Total Welsh employment at

these sites was almost 700 full-time equivalent employees⁹ (FTEs), which is around 17% of the industry total (see Table 3.1 which shows total Welsh employment in the mineral products industry was around 4,000 in 2013). These companies who participated in the survey generated over £170m of sales, with gross payroll costs of over £22m, and almost £130m of operational spending.

Table 4.1 Summary survey statistics

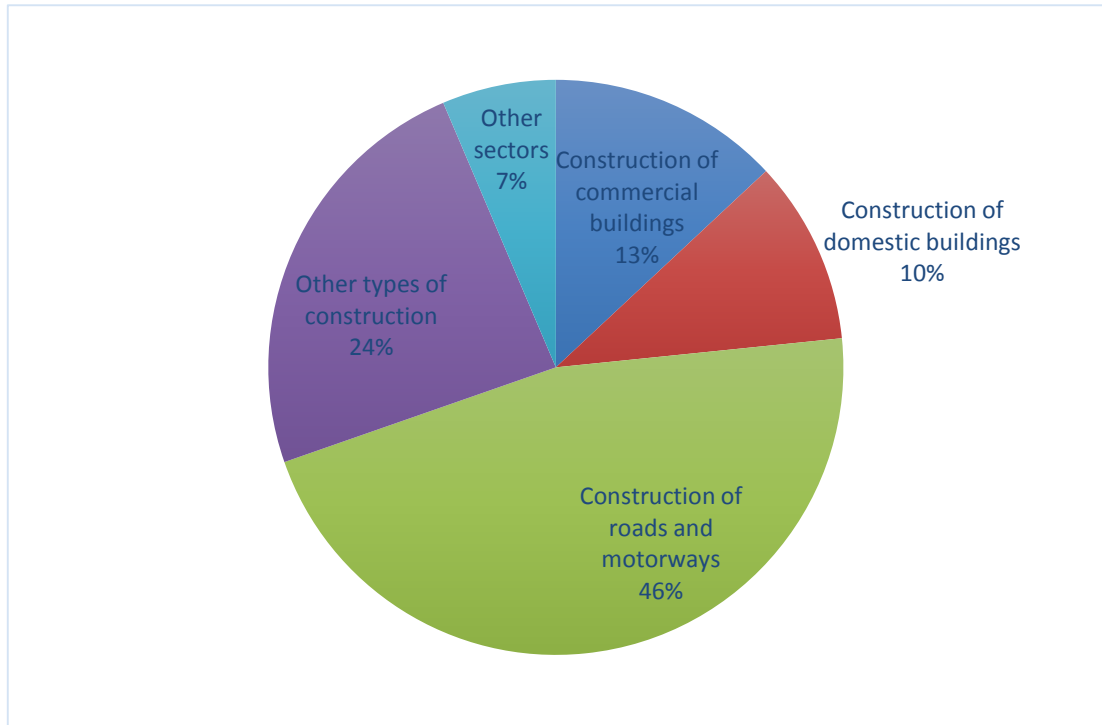
Survey data coverage	
Number of questionnaires	13
Number of sites represented	69
Sales from Welsh-based facilities	£174m
Welsh FTEs	693
Gross payroll costs	£22m
Operational spend (excl. wages)	£127m

Source: Cardiff Business School Survey

- 4.7 The survey returns covered a mixture of different parts of the sector which undertook various activities, and hence can only be used to provide indicative context for the analysis. With this caveat noted, a broad indication of average gross wages, and sales per FTE can be derived. For this sample of companies, average gross wages were almost £32,000, and sales per FTE were over £250,000. Section 3 reported that, using an industry sample derived from company accounts, average sales per employee was in the range of £105,000 - £172,000 depending on the nature of activities. This data therefore suggests that the sample contains some of the larger and more capital intensive companies within the industry with higher than average sales per employee.
- 4.8 Not all of the surveys contained full information on the destination of sales or the nature and origin of operational expenditure. These questions required detailed information which is not always easily extracted from the financial accounts for some companies. Destination of sales data is shown in Figure 4.1, and covered around half the sales by value given in Table 4.1.
- 4.9 As shown in Figure 4.1, the vast majority of sales for these companies were to the construction sector generally, and specifically to the construction of roads and motorways, which accounted for 46% of sales. In addition, over 90% of these sales were reported to be within Wales. It should be noted that these figures were derived from a sample of companies and may not therefore fully represent the sales pattern for the industry in total.
- 4.10 As with the destination of sales, only partial information was available from the questionnaires on purchasing patterns. One aim of the survey was to establish the linkages (both upstream and downstream) with other parts of the Welsh economy, and then to use this supply chain information, within an economic modelling framework, to estimate the economic impact of the mineral products industry.

⁹ Full-time and part-time employment information is used to generate estimates of full-time equivalents (FTEs). For example, if two people work part-time, and each work for half the hours of a full-time worker, these two part-time workers would count as one full-time equivalent.

Figure 4.1 Destination of mineral products industry sales 2013-14



Source: Cardiff Business School Survey

- 4.11 From the survey returns, it was possible to establish the main purchasing linkages of the mineral products industry in Wales. There was identified trade within the sector i.e. transfers of materials between quarries, and with and between manufacturers. Outside of the identified sector, other main purchasing linkages were for energy, transport services, fuel for transport, licences, hire/rental of equipment, and various contracting services. As expected the scale and nature of purchases varied by company type/activity.

4.4 Conclusions

- 4.12 The survey returns provided useful information on the nature and distribution of activities at mineral products industry sites in Wales, and some insight into the level and destination of sales, and the level and source of purchases. However this data is only partial, and could only be used to guide the estimation of economic significance. The survey data was used in conjunction with published information, such as that contained section 3, and in the Input-Output frameworks for Wales and the UK to derive the estimates contained in the next section.

5. The Economic significance of the Mineral Products Industry in Wales

5.1 Introduction

- 5.1 This section firstly provides an estimation of the direct economic significance of the mineral products industry in Wales, in terms of turnover/output, employment and gross value-added. This is followed by an explanation of the results of the economic modelling exercise which was undertaken in order to estimate the wider economic significance of the sector in Wales.

5.2 The direct economic contribution of the mineral products industry to the Welsh economy

- 5.2 The results in this part of the report are presented for the whole of the mineral products industry as described earlier (i.e. resources plus products manufacture). Due to the mix of activities undertaken by a number of companies in this sector, it is difficult to robustly derive separate results within the economic modelling framework.
- 5.3 Table 5.1 provides estimates of the direct economic contribution of the mineral products industry in Wales. The total employment figure of 3,810 full-time equivalents (FTEs) is consistent with that presented in Table 3.1 (there data was rounded to the nearest 100 for sub sectors at the 4 digit SIC level), and is also derived from the *Business Register and Employment Survey*. The other data on GVA and sales has been derived by interpolating between the available published data sources and reports and the industry survey. As a result of this process, direct GVA linked to the sector is estimated at just over £225m, with sales/turnover estimated at almost £650m.

Table 5.1 Mineral products industry - direct economic contribution, 2013-14

Sales/turnover, £m	649
GVA, £m	226
Employment (FTEs)	3,810

Sources: BRES, and authors' estimates.

- 5.4 Compared with the data provided in Mineral Products Association (2015), (and reproduced in Table 2.1 earlier), the estimates shown in Table 5.1 suggest that the industry in Wales accounts for just over 7% of the UK industry in terms of employment, but only around 4% in terms of GVA. This pattern of relatively lower GVA than employment shares is typical of many sectors of the Welsh economy, and can be partly explained by the lower share of company headquarters which are located in Wales. As noted earlier in the report, the sector is dominated by large multi-site companies which operate across the UK. Whilst the GVA share is below the employment share, GVA per FTE in the sector, estimated at £59,500, is still relatively

high in relation to the average for the Welsh economy (GLA Economics, 2015¹⁰).

- 5.5 From Table 5.1, sales per FTE employee are estimated at approximately £170, 000, a figure which is towards the upper end of the range provided in Section 3, which was derived from the available published company reports for selected parts of the sector.

5.3 The wider economic significance of the mineral products sector

- 5.6 The analysis provided in this section focuses on the economic activity supported in Wales as a result of backward (purchasing) linkages (the ‘multiplier’ effects). The mineral products industry in Wales makes operational purchases (of materials, services and labour) in order to generate its output. Through these linkages, the industry will support economic activity along the supply chain, and as a result of employees (direct, and indirect in supplier companies, and those in companies further along the supply chain) spending their wages. The survey information discussed in Section 4 was used in conjunction with existing data to estimate the scale of purchases from different parts of the Welsh economy (including labour purchases).
- 5.7 This information was then incorporated into an Input-Output model of the Welsh economy to estimate the jobs, output and GVA that is supported in other parts of the economy by the mineral products industry. This was achieved by simulating the removal of the sector from the economy, and its associated purchasing linkages and employment. This analysis therefore connects the jobs, output and GVA within supplier companies to the mineral products industry. In this case, if a supplier company sells only to the mineral products industry, all of those jobs, outputs and GVA in that supplier company will be contained in the estimates produced below.
- 5.8 Table 5.2 provides a summary of the findings from this analysis. This table reproduces the figures from Table 5.1 as the first row of data, recording the level of economic activity directly supported by the mineral products industry. The second row then shows as estimate of the total number of jobs, GVA and output supported in other parts of the economy through the operational purchases of the sector (including labour purchases) which were made within Wales.
- 5.9 The majority of these other impacts will be in the sectors (outside of the defined mineral products industry) identified by the survey as associated with main purchases. These sectors included the energy and services sectors of the economy, such as transport services and rental of equipment and machinery.
- 5.10 Purchases such as energy, whilst significant in terms of value, will however support relatively less jobs due to the capital intensive nature of production in this sector, whilst other purchases will be from more labour intensive sectors. As a consequence, the ratio of total economic activity supported to direct mineral products economic

¹⁰ Gross value added per workforce job in London and the UK, GLA Economics, for the Greater London Authority, February 2015. Available at <https://www.london.gov.uk/sites/default/files/GLAE%20Working%20Paper%20-%20GVA%20per%20Workforce%20Job%20in%20London%20and%20the%20UK%20-%20February%202015%20-%20FINAL.pdf>

activity will be different for each of the measures included in Table 5.2.

Table 5.2 Economic activity supported through purchasing linkages, 2013-14

	Output £m	GVA £m	Employment FTE
Mineral Products	649	226	3,810
<i>Other sectors of the economy</i>	<i>232</i>	<i>98</i>	<i>1,960</i>
Total	881	324	5,770

- 5.11 According to the estimates provided in Table 5.2, the mineral products industry in Wales supports over £230m of output (or sales), over £98m of GVA and almost 2,000 FTE jobs in other sectors of the Welsh economy. As noted above, these will be main supplier companies, and also companies further along the supply chain. However these impacts will also be in a number of other sectors, as the effects of wage spending are also included in the analysis. Wages are an important element of operational expenditure. By employing workers directly, and supporting employment and wages along the supply chain, demands are generated as workers spend these wages. Only a proportion of wage spending will stay within the Welsh economy, as many of the goods and services bought by consumers are produced outside of Wales, however the proportion retained within the region will support jobs in sectors such as retail, hotels and restaurants, and other services.
- 5.12 Adding the output, GVA and jobs supported in other sectors to the direct mineral products industry contribution to the economy gives a total of over £880m of output, over £320 of GVA and almost 5,800 jobs which can be associated with the industry in Wales.

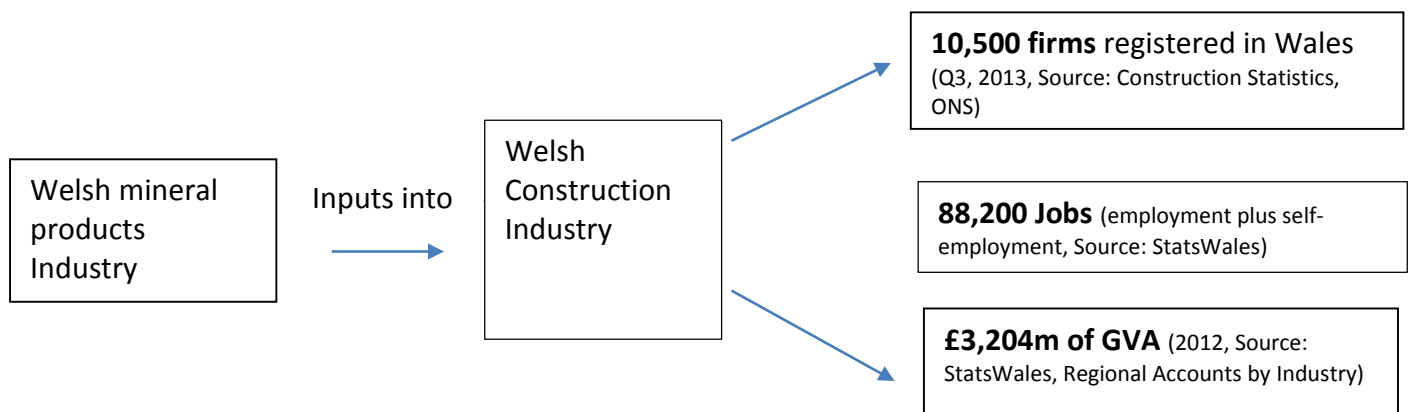
5.4 The importance of mineral products to the production process (a downstream user analysis)

- 5.13 As noted earlier in this report, there are a number of dimensions of significance in relation to the mineral products industry in Wales. One of these has already been described in Section 5.3, and is in terms of the mineral products industry as a buyer of inputs from other sectors, and generating economic impacts as a consequence of these demands. The other, possibly more important dimension, is the sector's role as a supplier of materials and products to other sectors in Wales, most notably, the construction sector (but also including other important sectors such as steel). It should also be noted here that the Welsh mineral products industry also supports economic activities in other parts of the UK (see Figures 3.2 and 3.3).
- 5.14 One way of defining a 'key' sector, is by the analysis of such upstream and downstream linkages. Whilst fast growing export sectors may naturally draw the attention of policy makers, those sectors which support the functioning of the home economy through tight interconnections are also important. The mineral products industry in Wales features particularly high linkages within Wales. For example, the survey results in Section 4, found that the vast majority of sales were to the Welsh

construction sectors, principally for road building activities.

- 5.15 Figure 5.1 shows the linkages from the mineral products industry to the Welsh construction sector. Construction has been identified as a 'key' industry, but this sector relies heavily on the local mineral products industry as a source of inputs, such that there would be some mutual reliance between these industries. The construction industry in Wales will certainly source some materials and manufactured products from outside Wales (depending on the nature of the activity), however the presence of local resources and product manufacturers is important for sustaining a successful Welsh construction industry. Figure 5.1 provides an indication of the significance of the construction industry to the Welsh economy, which contains 10,500 firms, supports over 88,000 jobs (accounting for 6.5% of the Welsh total) and more than £3bn of GVA (6.4% of the Welsh total).

Figure 5.1 Mineral products industry linkages to the Welsh construction industry



- 5.16 Recent economic policy documents on the Welsh economy identify a series of industries of 'interest' because of their value added characteristics and their propensity to provide for high quality and diversified employment opportunities. However, there has been a failure of analysis to consider why such industries are identified. For example, is there evidence these sectors have the characteristics of a key sector, and how do these industries contribute to the internal and external trade of the region, and how far do changes in their scale of activity support local supply chains and household effects within other parts of the region. It is often unclear why policy resources and academic attention focuses on these few key sectors of interest without understanding their real role in trade and in supporting other local activity. Then the analysis here provides some evidence of an industry that appears to be falling under the policymaker 'radar' but that through its activities support a relatively high number of intra-region transactions, and groups of activities that support other relatively self-contained groups of industry activity.

5.5 Conclusions

- 5.17 The mineral products industry is so embedded into Welsh economy that its significance extends far beyond its sectoral boundary. Directly the industry supports

more than £220m of GVA and over 3,800 FTE jobs. Incorporating jobs and economic activity supported in supplier companies brings this economic contribution to over £320m of GVA and almost 5,800 FTE jobs. The industry also has an important role, as a supplier of inputs into the Welsh construction sector, which itself supports 88,000 jobs and over £3bn of GVA, representing just over 6% of the Welsh economy. The construction industry is important to all areas of Wales, ranging from 5% of the economy in Flintshire and Wrexham, to 9% in South West Wales and 9.4% in Powys, although in absolute terms, the highest levels of construction GVA are in Cardiff and the Vale of Glamorgan and in South West Wales.

6. Conclusions

- 6.1 The report has aimed to quantify the economic significance of the mineral products industry to the Welsh economy. Previous analysis at the national scale had revealed an industry featuring high levels of productivity, supporting jobs and economic activity in primary resources, products manufacturing and contracting. The strategic role of the sector, in supplying local materials to other parts of the economy, has also been described in previous analysis, but is, as yet, not fully or explicitly recognised in policy discussions.
- 6.2 This report has identified an industry which directly supports over 3,800 FTE jobs in Wales and almost £230m of GVA, but whose activities impact upon most sectors of the Welsh economy. Of particular importance are its main suppliers, in the energy sector, transport and other services, and its main buyers in the construction industry. Through its purchasing linkages, additional jobs and GVA are supported in supplier companies, whilst the downstream linkages of the industry help to sustain the activities of the Welsh construction industry activity.
- 6.3 The tight interrelationships between the mineral products industry and the construction industry was identified through the industry survey. The presence of locally available resources and materials is important for sustaining the construction industry in Wales. The aspirations contained within the Wales Infrastructure Investment Plan (2015)¹¹ include improvements to transport networks, development of the energy industry, housing and regeneration, improving the educational estate, all of which will require the involvement of the Welsh construction industry. The mineral products industry in Wales is at the start of the production process for many of these infrastructure projects, which reach into many aspects of people's lives in Wales.
- 6.4 In conclusion, the presence of the mineral products industry in the regional economy is essential to the delivery of Welsh Government policy around infrastructure development, regeneration and the support of priority sectors.

¹¹ Wales Infrastructure Investment Plan available at <http://gov.wales/funding/wiipindex/?lang=en>

Appendix: Industry Questionnaire

 deunyddiau hanfodol atebion cynaliadwy essential materials sustainable solutions	MPA Economic Impact Study	 CARDIFF UNIVERSITY PRIFYSGOL CAERDYB
For further information on technical aspects of this survey please contact Max Munday, Cardiff University (mundaymc@cf.ac.uk; 029 20 875 089), all other queries to David Harding, Secretary MPA Wales (dh@hardingpr.co.uk; 01686 640630). Please note we are seeking information for either 2013/14 or the latest reporting period for the firm/organisation Please return completed questionnaires to Prof Max Munday at Cardiff University by Friday 27th March. All company information supplied will be confidentially held by the University research team for use within this study. Data from all the questionnaires will be aggregated together for the report so that information provided by individual firms cannot be identified.		
Name of Company/ Institution:		
Contact Name:		Tel No:
Position:		Email:
If your company has more than one site and/or main activity in Wales, please provide details below.		
Site 1: Location	Activity/activities	
Site 2: Location	Activity/activities	
Site 3: Location	Activity/activities	
If the information below does <u>not</u> cover all sites and activities in Wales, please specify what sites/activities are included.		
SECTION 1: EMPLOYMENT		
1a. Can you tell us the total number of people directly employed by your organisation (excluding subcontractors)? Please count all employees for whom National Insurance contributions are paid, plus any working directors, partners and owners.		
Number of Staff:	Full Time:	Part Time:
Estimate 2013/14		
1b. Please could you provide an estimate of the proportion of your staff who live within Wales?		
2013/14		%
1c. In addition, if applicable, could you estimate the average number of people (in person years, see note at foot of this page) engaged in subcontracted activity at your site(s) during the year?		
(We ask for further details of subcontractor costs and activities in Q5b.)		Total:
Estimate 2013/14		
SECTION 2: COSTS & SALES ESTIMATE		
2. What were the total gross payroll costs for 2013/14 (corresponding to employees in Q1a)? (include NI, overtime and other staff costs, such as directors' or partners' remuneration)		
£		
Estimate 2013/14		
3. What was your estimated total operational spend in 2013/14? (excluding capital spend, wages and salaries but including any spending on subcontractors)		
£		
Estimate 2013/14		
4a. Could you please provide an estimate of your total sales from your Welsh-based facility/facilities?		
£		
Estimate of total sales		
2013/14		
Please tick if above estimate includes VAT <input style="width: 40%;" type="checkbox"/>		
4b. Please could you estimate the percentage of your total sales (given in 4a) to different industry sectors and then estimate how much of this is in Wales?		
Construction of commercial buildings	%	of which % in Wales
Construction of domestic buildings	%	of which % in Wales
Construction of roads and motorways	%	of which % in Wales
Other types of construction	%	of which % in Wales
Other sectors, please list:	%	of which % in Wales
TOTAL	100 %	
Note: Person year estimation (for Q1c). By way of example, if two people engaged in subcontractor activities are on-site full-time for six months each, then this will equal one person year. <i>[Please now complete "Page 2": see separate sheet]</i>		

SECTION 3: OPERATIONAL EXPENDITURE				
5a. Please provide, in the table below, your best estimate of the largest categories of your operational expenditure (including subcontractor spend but excluding payroll costs for employees given in Q2) For example if £10,000 of your spending was on Hire of Machinery and 80% was sourced in Wales and 20% in the rest of UK/overseas, then 80 goes in Column [B], and 20 in Column [C]				
Destination of expenditure is defined as the location where goods are purchased from, not where the goods originated or were manufactured.				
PLEASE TICK HERE IF ESTIMATES INCLUDE VAT ☐				
OPERATIONAL EXPENDITURE		[A] Expenditure (£)	[B] % spent in rest of Wales	[C] % spent elsewhere
Main items:				
Energy - electricity and gas				
Water				
Licences				
Hire/rental of machinery/equipment				
Fuel (for transport)				
Transport services and/or contractors				
On-site contractor 1 (please give details in Q5b)				
On-site contractor 2 (please give details in Q5b)				
Other main items - please list:				
Total (should <u>approximately</u> equal the figure provided in Q3)				
5b. Please estimate the number of on-site contractors (linked to the payments provided in the above table) undertaking different activities during the year.				
Contractor 1: Activity		estimated number of person years		
Contractor 2: Activity		estimated number of person years		
Total should equal that given in Q1c.				
Please return to Professor M C Munday by Friday 27th March 2015 mundaymc@cf.ac.uk Thank you				