
GDP(O) Improvement Project

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INTRODUCTION

Since the publication of the Index of Services (IoS) industry review article in [August 2012](#), progress on the wider improvement work programme has been reported as part of the Gross Domestic Product (GDP) Continuous Improvement articles published in [October 2012](#) and [April 2013](#). The April article announced that:

"IoS industry reviews have now been subsumed into a wider programme of improvements to the output approach to GDP [GDP(O)]. Industry reviews across all industries will remain a key focus but wider cross-cutting considerations will be progressed over the coming year."

This GDP(O) improvement report describes:

- the strengthening of sources and methods for nine industries in Blue Book 2013 as previously outlined in the April 2013 Continuous Improvement article
- progress being made in the industry specific reviews which are characterised by a more in-depth review of concepts, sources and methods
- progress being made as part of the wider cross-cutting programme
- how ONS intends to prioritise industry specific reviews as part of the development programme.

1. Section 1 - Blue Book 2013

With each National Accounts Blue Book revisions are caused by new data and supply and use balancing, as well as new data sources and improved statistical methods as part of the commitment to continuous improvement. This work is captured in an article which describes the changes in [Blue Book 2013](#). In this section we simply focus on the issues announced in the April Continuous Improvement article including their impact on GDP in 2011 and 2012.

1.1. Industry 01-agriculture

The Office for National Statistics (ONS) has worked closely with the Department for environment, food and rural affairs (Defra) on improving estimates for this industry. This included re-assessing the methodology for work-in-progress which led to a more conceptually robust approach to measuring crop and animal production in line with international standards. Oil seed rape was added as a new indicator due to its growing importance in the industry and the index rebased from 2005=100 to 2010=100 at the lowest level. The impact of revisions has generally been positive with the largest impact being a contribution of 0.1% to GDP growth in 2011. This was primarily due to the use of new Defra benchmark data replacing earlier ONS estimates. The ONS estimates did not predict the significant growth in gross value added which occurred in 2011 due to global agricultural factors.

1.2. Industry 03-fishing

ONS has also worked closely with the Marine Management Organisation to review the current

methods and data sources but found no cause for revision. However, we have rebased the series so that 2010=100 at the lowest level. The impact of the rebasing has not been significant.

1.3. Industry 09-mining support services

Volume indicators of metres drilled in relation to exploration and associated working days were previously used to reflect activity in this industry, which is predominantly related to exploration, maintenance and decommissioning in the oil and gas sector. We have now moved to using workforce jobs for industry 09 and wages from section B (mining and quarrying) as indicators of activity. Comparison of this new series with gross value added (GVA or the result of outputs less inputs) derived from the Annual Business Survey demonstrated a suitable match in annual growth rates over the long-term and an improvement on the previous methodology. Users should note that a labour input statistical method is classed as C by Eurostat (see section 4.1). As the Index of Production (IoP) aims to reflect the movement in GVA we are satisfied that this is a more suitable proxy. This has produced revisions to the mining and quarrying index which are more representative of activity with changes generally being negative, particularly before 2010. However, there has been a positive revision to GDP growth in 2012.

1.4. Industry 24.1-3-iron and steel

The updating of low-level aggregation weights below industry level to 2010=100 has been carried out with no significant impact.

1.5. Industry 51-air transport

ONS has worked with the Civil Aviation Authority (CAA) to reassess the births and deaths of aviation companies to ensure that the changes are more consistent with normal ONS practices and reflected more appropriately in the GDP(O) series for air transport. Following a review of the raw data we have also improved the methodology of one of the series to be more representative of the air industry. The impact of revisions has been a positive contribution to GDP growth in 2012.

1.6. Industry 60-programming and broadcasting

Following a review of the inquiry sampling frame a reporting issue was identified which led to inconsistencies with GDP principles. A new method has been adopted which measures growth more appropriately. The impact has not been significant but will improve the accuracy and relevance of growth estimates.

1.7. Industries 64.2(holding companies),70.1(head offices) and 94 (membership organisations)

A complex mix of full and part-time employment, broken down by gender, was previously used to reflect labour growth. Labour inputs are now measured using workforce jobs data on a full-time equivalent basis for each industry, which simplifies the method and source data. There has been no significant impact on GDP.

2. Section 2 - Industry Specific Reviews

Three industry specific reviews are currently being undertaken on real estate, market sector health and financial services with the progress described below. They are characterised by a more detailed investigation of concepts, methods and sources which seeks to find the

optimum practical method for calculating short-term movements in value-added.

Engagement with users of GDP data and those with a stake in the industry under review is an important facet of the process. Regular meetings are held with users such as the Bank of England and HM Treasury and briefings have been offered to the devolved governments. The review of the real estate industry (68) has also included contact with trade bodies and it is hoped that company visits can be arranged to support the work of the review.

The industry review process has been publicised in two industry review articles, two continuous improvement articles and Index of Services bulletins but we would like to engage with a wider set of organisations. If you would like to be involved with any user groups on specific or general reviews please contact ios.quality@ons.gov.uk. In addition, towards the end of the summer a user engagement event will be held in London to discuss the work outlined in this report and its context within the GDP Improvement Plan. If you would like to attend this event please e-mail ios.quality@ons.gov.uk.

2.1. Industry 68–Real Estate

The industry specific review for real estate has made the most progress following initial consultation and discussion with users and industry experts. We have identified the following key issues which we will address as the review progresses.

Output for industry 68.3 (Real estate activities on a fee or contract basis) is currently measured using an appropriate workforce jobs series. Whilst this is a good guide to activity, it is not ideal for GDP(O) purposes to use an input method to calculate output. However, as described later in section 3 (improving turnover coverage), this is one area where data have been collected since July 2010 using the ONS Monthly Business Survey (MBS) and there will soon be an appropriate span of data to allow seasonal adjustment, which will allow for its use in GDP(O). The data will be reviewed to determine whether the seasonally adjusted survey data can be used in Blue Book 2014.

Output for industry 68.1-2 (Buying and selling of own real estate; renting and operating of own or leased real estate, excluding imputed rent) can be analysed in three separate ways:

- ONS Household Final Consumption Expenditure (HHFCE) captures the value of residential rentals. In this context for privately rented properties we use data derived from the ONS Living Costs and Food survey on average rentals paid multiplied by the stock of rented properties provided by the Department for Communities and Local Government. This is supplemented by government data on public sector rentals.
- Data from the Investment Property Databank (IPD) are used to reflect rentals in the non-residential sector. IPD provide a monthly index on net income based on a sample of properties covering 15% of the UK market. It is compiled from valuation and management records for individual buildings in complete portfolios collected directly from property investors by IPD. All valuations used in the Monthly Index are conducted by qualified valuers who are independent of the property owners or managers and working to the Royal Institution of Chartered Surveyors guidelines. The data source is sound but there are some conceptual issues with its use for GDP(O) which may mean that we should consider some alterations. For example, weights on property rateable value obtained from the Valuation Office Agency (VOA) to more accurately reflect sector and regional breakdowns across the UK rather than the breakdown of investment properties in the IPD dataset.
- It should be noted that we do not have an indicator which captures buying and selling activity as the contribution to gross value added only accounts for some 2% of real estate GVA according to ONS Annual Business Survey estimates. ONS will judge whether a new source of data is required to capture this activity.

Output for industry 68.1-2 IMP (imputed rental of owner occupiers) is supplied by HHFCE as part of the convention whereby expenditure equals output for this industry. The measurement of imputed rental is used to ensure that there is consistency in the treatment of home ownership across all countries over time so that countries with varying levels of home ownership or rented housing are equalised through National Accounts by the imputed rental process. In Blue Book 2013 the estimates have been made compliant with the European System of Accounts 1995 (ESA95) so that they are reported on a gross rather than net basis. This is a counter-party to the change whereby repairs and maintenance of a type carried out by owner occupiers have been classified as intermediate consumption and removed from final consumption estimates.

Finally, users may be aware that industry 41.1 (property developers) is currently not being measured individually as part of GDP(O). Under Standard Industrial Classification 2003 (SIC03), property developers were classified as part of real estate (industry 71.11) but they have switched to 41.1 (within construction rather than services) on a SIC07 basis. A background note in the construction briefing highlights the fact that:

'The construction industry.....covers Sections 41, 42 and 43 of the Standard Industrial Classification 2007 (excluding section 41.1 property developers)'.

Historically, the construction survey has conceptually measured activity in terms of output. However, the activity of 41.1 is more service orientated and so it has not been measured separately as part of the survey. Instead the assumption is made that growth in output in the sampled areas of the construction industry act as a proxy for industry 41.1. The review will consider if this is an appropriate way to measure output in this industry and consider how estimates could be derived.

2.2. Industry 86M–Market Sector Health

This review is currently focussed on both the familiar market setting, such as a private hospital and additionally sub-contracted government spend in market settings. Growth in, for example, private hospitals is reflected through the use of workforce jobs and the Consumer Price Index for health. The Monthly Business Survey has the potential to supply current price data from survey estimates produced since July 2010, which would be a preferable conceptual source. This will be assessed as part of the review.

Growth of sub-contracted spend is more challenging to collect and analyse and has meant that the review is focussing on spend in non-market settings. Non-market sector spend is sourced from the OSCAR (Online system for central accounting and reporting) database owned by HM Treasury and populated by various bodies such as the Department of Health in England and the devolved governments. Data are received on compensation of employees, capital formation and intermediate consumption and it is the latter where we will concentrate attention to ensure that sub-contracted spend is measured appropriately for use in GDP(O). Users should note that this does not mean the data are inaccurate. However, it is important that the use of data corresponds appropriately with GDP(O) conventions which will necessitate further investigation of spend data in both market and non-market settings.

As a consequence, it has been decided that the review should expand to include non-market health (industry 86NM) as in doing so it will be easier to have certainty that public sector expenditure is counted accurately for use within GDP(O). Improvements to the

measurement of non-market health have been made over time and refinements continue to be developed to ensure that cost weighted activity indices of health are relevant and informed. Work will be undertaken to more fully understand the use of cost weighted activity indices and their use as part of GDP(O).

2.3. Industries 64 (Financial Services) and 66 (Activities Auxiliary to Financial Services)

The industry specific review of these industries has recently commenced and is currently focussing on data sources, methods and coverage. The previous article in August 2012 outlined that the review into industry 64 would shortly begin and there has been some progress. However, users should be aware that this is a complicated and evolving industry with a number of conceptual issues that will require attention to international debate. As such, it is planned that this will be a lengthy review. With regard to industry 64, Financial Intermediation Services Indirectly Measured (FISIM) will be a secondary issue as work will initially focus on activity that is not FISIM related. The focus will then move to a review of industry 66.

3. Section 3 – GDP(O) cross-cutting improvements

An outline of the cross-cutting work programme was contained in the April 2013 Continuous Improvement article. This section describes the issues in more detail as they will begin to be addressed from Blue Book 2014 onwards.

3.1. Improving turnover coverage

The preferred method of reflecting short-term movements in gross value added is to use a statistically robust monthly turnover series and an appropriate deflator to calculate the change in volume or output. The most common source of turnover data is the Monthly Business Survey (MBS). In July 2010 the MBS was expanded to six new industries where volume measures such as quarterly employment are currently used to reflect short-term growth – 68.3 estate agents, 75 vets, 85 market sector education, 86 market sector health, 91 libraries and other cultural activities, and 93 sport and recreation.

ONS is currently reviewing the quality of the survey results and considering use of the new data for Blue Book 2014. Users should note that the replacement of quarterly employment with monthly turnover would improve the proportion of data available on a monthly basis. However, a reasonable time series of data is required to implement new seasonal adjustment models and this will not be available until Blue Book 2014. Users should also note that the use of employment in a market sector setting is an area where improvement is required; a C rated method as described in the Eurostat 'Handbook on price and volume measures in national accounts' (2001 edition) whereas the use of turnover is more likely to lead to an 'appropriate' (A) or 'acceptable' (B) rating (see section 4.1).

In addition, the use of value added tax (VAT) turnover data is also being considered – both in areas where there is no MBS data or as a benchmark for GDP(O). The use of VAT has only recently become possible due to the introduction of improved methods for error correction and the linking of VAT data to the Inter-departmental Business Register. There are obvious advantages in accessing a larger number of businesses supplying quarterly data but this must also be judged against such issues as the timeliness of securing VAT data from HM Revenue and Customs and the conceptual differences between MBS and VAT turnover, such as the latter including capital payments.

A future GDP(O) Improvement article will consider the applicability of VAT within GDP(O) in a wider sense and consider the use of VAT at industry level or below as appropriate.

3.2. Productivity adjustment review

Although it is preferred that output indicators, such as appropriately deflated turnover, are used to estimate output, such data are not always available and indicators reflecting inputs to the productive process such as labour and wages can be used. In following international standards and guidance an adjustment should be made when employment or wage estimates are used as such indicators in order to take account of changes in labour productivity.

Employment data are used as indicators covering 6.9% of GDP(O) in 2010 with 3.6% in market (e.g. private sector) settings where a productivity adjustment is required to reflect changes in labour productivity. The remaining 3.3% covers activity in non-market (e.g. public sector) settings where changes in grade-mix over time account for changes in labour productivity. Similarly, wage data (average weekly earnings) are also adjusted for changes in productivity and cover 13.7% of GDP(O). In total some 16.8% of GDP(O) in 2010 is impacted by the application of productivity adjustments.

ONS will consider how the productivity adjustment is calculated and applied, and will also judge whether labour inputs could be improved. Users should not confuse this work with that being undertaken on the productivity puzzle although there may of course be implications if the review concludes that changes should be introduced to improve GDP(O) measurement.

3.3. Moving to 2010 = 100

GDP(O) is subject to annual chain-linking but not all estimates are chain-linked annually. For some industries there is a level of structural detail below industry level which may demand that weights for aggregation and deflation have to be re-calculated every 5 years. At present the weights are based upon 2005=100 but it is planned that work is conducted to ensure that the weights are updated to reflect 2010=100. It is planned that this will come into effect for Blue Book 2014 when Producer Price Index and Service Producer Price Index (SPPI) data are [re-based to 2010=100](#) which will ensure consistency with the prime suppliers of deflators. However, it should be noted that some industries have been rebased to 2010=100 at a lower level as described in section 1 (industries 01, 03 and 24.1-3)

3.4. Use of wage data

As described above, wage data are used for a number of industries in Blue Book 2013. When calculating output at industry level we have commonly used wage data from the parent section level as we believed that the estimates supplied at that level were more robust than those at industry level. For example, wage data for section J (information and communication) are used for industries 58 (publishing), 59 (film and TV production), 62 (computer programming) and 63 (information services). ONS has reviewed the statistical robustness of the estimates derived from average weekly earnings (AWE) at section and industry level and reached the initial conclusion that data at a section level are more robust. As such GDP(O) will continue to use AWE data at a section level.

3.5. Website improvements

Users may be aware that some parts of the 'Guidance and Methodology' section on the web connected with GDP(O), Index of Production and Index of Services relate to Standard Industrial Classification 2003 (SIC03) rather than the current SIC07. A continuous programme of work is underway to update the web pages and bring a more cohesive approach to communicating our methods for the three outputs. We will also be launching a new page of 'Improvements' which will bring together updates as part of our wider work programme. The changes are planned for implementation over the next year.

3.6. Industries classified as experimental

As explained in the August 2012 IoS Industry Review article, some 17 industries accounting for 19.8% of GDP(O) in 2010 remain classified as Experimental Statistics (this represents a fall from 26.7% due to the move to new 2010 weights). That article described the reasons supporting the experimental status for each industry. Over the coming months the National Accounts Methods Committee will consider a report on each industry where progress can be made in re-classifying the status to National Statistics. On passing this stage, the reports will follow the ONS procedure for reviewing Experimental Statistics status before reaching the National Statistician and the UK Statistical Authority for a final judgement. Progress will be reported as a note to Index of Services bulletins and through future GDP(O) Improvement reports.

4. Section 4 - Prioritisation of the development programme

ONS has continued to refresh the way in which it prioritises the industry specific review process as outlined in section 2. We have taken the views of users on board and refined our priority matrix since publication of the previous article in August 2012 as outlined in Appendix 1. It has been updated with new weights for 2010 sourced from supply and use balancing and aligned with Blue Book 2013, to provide a framework for prioritising developments. The focus of prioritisation has moved from an emphasis on experimental statistics status to the quality of the data supplies and methods used in GDP(O) estimates compared to international guidelines. In addition to the use for prioritising developments, the analyses will assist users in understanding the underlying quality of the estimates that support GDP(O).

4.1. Populating the priority matrix

The updated priority matrix features four variables, the most important of which is the Eurostat rating of each industry following ONS expert assessment which can be found at Appendix 2 and accounts for a weight of 60% in the scoring system within the overall matrix (an increase from the 25% weight used in the previous matrix). The rating is consistent with the [Eurostat 'Handbook on price and volume measures in national accounts' \(2001 edition\)](#) and the pragmatic guidance agreed at the March 2012 Eurostat task force on the use of price and volume in GDP. It views the methods used to measure GDP(O) as A, B or C quality, with C rated industries demanding the most improvement.

In Blue Book 2013, 15% of GDP(O) used A methods, 63% B methods and 22% C methods. This is the first time that we have completed an analysis of methods on a SIC07 basis as previously we have used converted SIC03 analyses. Users should note that the quality rating is based upon the weakest element of each industry and reflects the internationally accepted view of how output should be estimated rather than a view on the validity, or otherwise, of estimating output in any particular way. In this context it may be helpful to explain the background to the C rating applied to the 19 industries included in Appendix 2. These are

listed at Appendix 3 and it can be seen that the most significant factor is the use of labour input methods such as employment and wages in estimating output in a market setting.

As a result of user feedback a new variable has been introduced into the matrix measuring industry volatility with a weight of 10% in the scoring system. Volatility is defined as the period (months/quarters) required for identifying cyclical dominance when analysing seasonally adjusted series. This is a representation of the span required within the seasonal adjustment model for the irregular component for each industry to fall below 1 - or the period required to detect the underlying trend. The larger the period the more volatile the series as outlined in Appendix 4. The Months for Cyclical Dominance (MCD) average is 4.26 months so if the MCD is 4 months or below for an industry it is ranked 1 (low). If the MCD is 5-8 months it is ranked 2 (medium) and if 9-12 months it is ranked 3 (high). Similarly, the Quarters for Cyclical Dominance (QCD) average is 1.43 so if the QCD is 1 quarter for an industry it is ranked 1 (low). If the QCD is 2 quarters it is ranked 2 (medium) and if 3-4 quarters it is ranked 3 (high). Appendix 4 shows that 3% of GDP(O) has high volatility, 22% is medium and 75% is low.

We have also completed some work on industry level revisions and introduced this as another new variable with a weight of 10% in the scoring system. Due to the lack of available back data on a SIC07 basis, as a result of the change from SIC03, we are unable to complete the revisions triangle which users will be familiar with for high-level IoP and IoS. Instead we have taken the earliest available (converted) data and the latest data which means that the revisions are measured in absolute terms and include the impact of the move to SIC07 as outlined in Appendix 4. In time, ONS intends to move to the familiar revisions triangle process when sufficient data are available. The average absolute revision is 8.37 index points between the first time at which data was available for [period] and its latest measurement. Any industry at or below the 8.37 average has scored 1 (low). Any industry with a score between 8.37 and 16.75 (double the average) scores 2 (medium) and any industry above 16.75 scores 3 (high). Appendix 5 shows that 7% of GDPO has high revisions, 21% medium revisions and 72% have low revisions.

Finally the industry specific variable has a weight of 20% in the scoring system. This considers the quality of current price, volume and deflator sources at industry level alongside factors such as periodicity in a GDP(O) source hierarchy that delivers A, B, C or D source ratings. It differs from Eurostat ratings by considering weaker data elements alongside stronger data sources that produce more robust estimates.

The variable also reflects the presence of industries with experimental statistics status as these are automatically graded C. Users should note that some experimental statistics labels could be removed as described in the August 2012 article once processed through the assessment process as described above in section 3. The experimental statistics label previously had a weight of 25% but this has now been overtaken as a variable in its own right due to the changing focus of the development programme towards improving quality.

4.2. Future priorities

The refreshed priority matrix is shown as Appendix 1. When considering the top ten industries it should be noted that five are, or will be, the subject of planned industry specific reviews as noted in section 2 (64 financial services, 68.1-2 real estate, 66 activities auxiliary to financial services, 86M market sector health, 86NM non-market sector health).

Industry 62 (computer programming) is ranked high as AWE data are used to deflate current price estimates rather than an ideal appropriate SPPI. This is an industry that has experienced significant problems with quality measurement, an experience that is shared internationally. Attempts have been made previously to improve quality adjustment but these have not been successful. An SPPI does exist for industry 62 but it is not felt that this satisfies the need for a robust treatment of change in quality and so it has not been used in GDP(O). ONS will consider how to improve the SPPI for industry 62 and in the meantime it is judged that an industry review should be delayed while an outcome is reached. Industries 70 (head offices and management consultancy) and 71 (architectural and engineering activities) also use AWE data rather than SPPI. SPPI data for these industries have recently been developed. These are currently experimental series but the UK Statistics Authority is due to reassess the SPPI towards the end of 2013 and so there is scope to conduct reviews into these two industries.

Industry 84 (public administration and defence; compulsory social security) has a high weight and a B Eurostat rating as it uses employment data in a non-market setting. Improvement has previously been made into the estimation of defence, justice and public order but there has not been a systematic review of local government within the context of GDP(O) which is a significant element of group 84.1-21 (public administration). A review into local government may also need to investigate industries such as 38 (waste), 41 (construction), 91 (libraries and other cultural activities) and 93 (sport and recreation) to ensure there is consistency in reporting full-time equivalent jobs.

Industry 85M (market sector education) has a significant weight and is rated a C method due to the use of workforce jobs data in a market sector. An MBS data series offers scope to use current price turnover estimates but a more in-depth review is required to ensure that growth is being estimated appropriately.

The GDP(O) Improvement programme has been allocated resources to illustrate the importance that ONS attaches to delivering continuous improvement. This capacity will enable a review of local government to commence immediately and to be followed by a review of the other elements of Industry 84. By the end of 2013 reviews will also commence into industries 70 and 71 where there may be scope to conclude this work in time for inclusion in Blue Book 2014.

Appendices

1. Industry review rank order
2. Eurostat ratings
3. Eurostat C ratings requiring improvement
4. Volatility ratings
5. Revision ratings

Appendix 1 - Industry Review Rank Order

SIC	DESCRIPTION	RANK	SIC	DESCRIPTION	RANK
64	64:Financial Service Activities, Except Insurance And Pension Funding	1	01	01:Crop And Animal Production, Hunting And Related Service Activities	50
68.1/2	68:Real Estate Activities (non-fee or contract)	2	02	02:Forestry And Logging	85
62	62:Computer Programming, Consultancy And Related Activities	3	03	03:Fishing And Aquaculture	83
84	84:Public Administration And Defence; Compulsory Social Security	4	05	05:Mining Of Coal And Lignite	86
66	66:Activities Auxiliary To Financial Services And Insurance Activities	5	06	06:Extraction Of Crude Petroleum And Natural Gas	27
70	70:Activities Of Head Offices; Management Consultancy Activities	6	07	07:Mining Of Metal Ores	89
71	71:Architectural And Engineering Activities; Technical Testing And Analysis	7	08	08:Other Mining And Quarrying	79
86 M	86:Human Health (market)	8	09	09:Mining Support Service Activities	35
85M	85:Education (market)	9	10	10:Manufacture Of Food Products	45
86 NM	86:Human Health (non-market)	10	11	11:Manufacture Of Beverages	71
87	87:Residential Care Activities	11	12	12:Manufacture Of Tobacco Products	84
47	47:Retail Trade, Except Of Motor Vehicles And Motorcycles	12	13	13:Manufacture Of Textiles	78
88	88:Social Work Activities Without Accommodation	13	14	14:Manufacture Of Wearing Apparel	82
85NM	85:Education (non-market)	14	15	15:Manufacture Of Leather And Related Products	87
69	69:Legal And Accounting Activities	15	16	16:Manufacture Of Wood & Products Of Wood & Cork, Except Furniture; Manuf. Of Articles Of Straw	80
46	46:Wholesale Trade, Except Of Motor Vehicles And Motorcycles	16	17	17:Manufacture Of Paper And Paper Products	72
65	65:Insurance, Reinsurance And Pension Funding, Except Compulsory Social Security	17	18	18:Printing And Reproduction Of Recorded Media	66
94	94:Activities Of Membership Organisations	18	19	19:Manufacture Of Coke And Refined Petroleum Products	74
93	93:Sports Activities And Amusement And Recreation Activities	19	20	20:Manufacture Of Chemicals And Chemical Products	62
41	41:Construction Of Buildings	20	21	21:Manufacture Of Basic Pharmaceutical Products And Pharmaceutical Preparations	52
97	97:Activities Of Households As Employers Of Domestic Personnel	21	22	22:Manufacture Of Rubber And Plastic Products	65
73	73:Advertising And Market Research	22	23	23:Manufacture Of Other Non-Metallic Mineral Products	69
68.3	68:Real Estate (fee or contract basis)	23	24	24:Manufacture Of Basic Metals	75
43	43:Specialised Construction Activities	24	25	25:Manufacture Of Fabricated Metal Products, Except Machinery And Equipment	51
60	60:Programming And Broadcasting Activities	25	26	26:Manufacture Of Computer, Electronic And Optical Products	61
77	77:Rental And Leasing Activities	26	27	27:Manufacture Of Electrical Equipment	70
06	06:Extraction Of Crude Petroleum And Natural Gas	27	28	28:Manufacture Of Machinery And Equipment N.E.C.	57
82	82:Office Administrative, Office Support And Other Business Support Activities	28	29	29:Manufacture Of Motor Vehicles, Trailers And Semi-Trailers	58
63	63:Information Service Activities	29	30	30:Manufacture Of Other Transport Equipment	56
45	45:Wholesale And Retail Trade And Repair Of Motor Vehicles And Motorcycles	30	31	31:Manufacture Of Furniture	76
49	49:Land Transport And Transport Via Pipelines	31	32	32:Other Manufacturing	73
52	52:Warehousing And Support Activities For Transportation	32	33	33:Repair And Installation Of Machinery And Equipment	68
61	61:Telecommunications	33	35	35:Electricity, Gas, Steam And Air Conditioning Supply	36
92	92:Gambling And Betting Activities	34	36	36:Water Collection, Treatment And Supply	64
09	09:Mining Support Service Activities	35	37	37:Sewerage	63
35	35:Electricity, Gas, Steam And Air Conditioning Supply	36	38	38:Waste Collection, Treatment And Disposal Activities; Materials Recovery	53
42	42:Civil Engineering	37	39	39:Remediation Activities And Other Waste Management Services	88
53	53:Postal And Courier Activities	38	41	41:Construction Of Buildings	20
81	81:Services To Buildings And Landscape Activities	39	42	42:Civil Engineering	37
56	56:Food And Beverage Service Activities	40	43	43:Specialised Construction Activities	24
91	91:Libraries, Archives, Museums And Other Cultural Activities	41	45	45:Wholesale And Retail Trade And Repair Of Motor Vehicles And Motorcycles	30
59	59:Motion Picture, Video & TV Programme Production, Sound Recording & Music Publishing Activities	42	46	46:Wholesale Trade, Except Of Motor Vehicles And Motorcycles	16
74	74:Other Professional, Scientific And Technical Activities	43	47	47:Retail Trade, Except Of Motor Vehicles And Motorcycles	12
75	75:Veterinary Activities	44	49	49:Land Transport And Transport Via Pipelines	31
10	10:Manufacture Of Food Products	45	50	50:Water Transport	48
72	72:Scientific Research And Development	46	51	51:Air Transport	59
78	78:Employment Activities	47	52	52:Warehousing And Support Activities For Transportation	32
50	50:Water Transport	48	53	53:Postal And Courier Activities	38
96	96:Other Personal Service Activities	49	55	55:Accommodation	60
01	01:Crop And Animal Production, Hunting And Related Service Activities	50	56	56:Food And Beverage Service Activities	40
25	25:Manufacture Of Fabricated Metal Products, Except Machinery And Equipment	51	58	58:Publishing Activities	55
21	21:Manufacture Of Basic Pharmaceutical Products And Pharmaceutical Preparations	52	59	59:Motion Picture, Video & TV Programme Production, Sound Recording & Music Publishing Activities	42
38	38:Waste Collection, Treatment And Disposal Activities; Materials Recovery	53	60	60:Programming And Broadcasting Activities	25
79	79:Travel Agency, Tour Operator And Other Reservation Service And Related Activities	54	61	61:Telecommunications	33
58	58:Publishing Activities	55	62	62:Computer Programming, Consultancy And Related Activities	3
30	30:Manufacture Of Other Transport Equipment	56	63	63:Information Service Activities	29

SIC	DESCRIPTION	RANK	SIC	DESCRIPTION	RANK
28	28:Manufacture Of Machinery And Equipment N.E.C.	57	64	64:Financial Service Activities, Except Insurance And Pension Funding	1
29	29:Manufacture Of Motor Vehicles, Trailers And Semi-Trailers	58	65	65:Insurance, Reinsurance And Pension Funding, Except Compulsory Social Security	17
51	51:Air Transport	59	66	66:Activities Auxiliary To Financial Services And Insurance Activities	5
55	55:Accommodation	60	68.1/2	68:Real Estate Activities (non-fee or contract)	2
26	26:Manufacture Of Computer, Electronic And Optical Products	61	68.3	68:Real Estate (fee or contract basis)	23
20	20:Manufacture Of Chemicals And Chemical Products	62	69	69:Legal And Accounting Activities	15
37	37:Sewerage	63	70	70:Activities Of Head Offices; Management Consultancy Activities	6
36	36:Water Collection, Treatment And Supply	64	71	71:Architectural And Engineering Activities; Technical Testing And Analysis	7
22	22:Manufacture Of Rubber And Plastic Products	65	72	72:Scientific Research And Development	46
18	18:Printing And Reproduction Of Recorded Media	66	73	73:Advertising And Market Research	22
90	90:Creative, Arts And Entertainment Activities	67	74	74:Other Professional, Scientific And Technical Activities	43
33	33:Repair And Installation Of Machinery And Equipment	68	75	75:Veterinary Activities	44
23	23:Manufacture Of Other Non-Metallic Mineral Products	69	77	77:Rental And Leasing Activities	26
27	27:Manufacture Of Electrical Equipment	70	78	78:Employment Activities	47
11	11:Manufacture Of Beverages	71	79	79:Travel Agency, Tour Operator And Other Reservation Service And Related Activities	54
17	17:Manufacture Of Paper And Paper Products	72	80	80:Security And Investigation Activities	77
32	32:Other Manufacturing	73	81	81:Services To Buildings And Landscape Activities	39
19	19:Manufacture Of Coke And Refined Petroleum Products	74	82	82:Office Administrative, Office Support And Other Business Support Activities	28
24	24:Manufacture Of Basic Metals	75	84	84:Public Administration And Defence; Compulsory Social Security	4
31	31:Manufacture Of Furniture	76	85M	85:Education (market)	9
80	80:Security And Investigation Activities	77	85NM	85:Education (non-market)	14
13	13:Manufacture Of Textiles	78	86 M	86:Human Health (market)	8
08	08:Other Mining And Quarrying	79	86 NM	86:Human Health (non-market)	10
16	16:Manufacture Of Wood & Products Of Wood & Cork, Except Furniture; Manuf. Of Articles Of Straw	80	87	87:Residential Care Activities	11
95	95:Repair Of Computers And Personal And Household Goods	81	88	88:Social Work Activities Without Accommodation	13
14	14:Manufacture Of Wearing Apparel	82	90	90:Creative, Arts And Entertainment Activities	67
03	03:Fishing And Aquaculture	83	91	91:Libraries, Archives, Museums And Other Cultural Activities	41
12	12:Manufacture Of Tobacco Products	84	92	92:Gambling And Betting Activities	34
02	02:Forestry And Logging	85	93	93:Sports Activities And Amusement And Recreation Activities	19
05	05:Mining Of Coal And Lignite	86	94	94:Activities Of Membership Organisations	18
15	15:Manufacture Of Leather And Related Products	87	95	95:Repair Of Computers And Personal And Household Goods	81
39	39:Remediation Activities And Other Waste Management Services	88	96	96:Other Personal Service Activities	49
07	07:Mining Of Metal Ores	89	97	97:Activities Of Households As Employers Of Domestic Personnel	21

Appendix 2 - Eurostat Ratings

A = appropriate
B = acceptable
C = improvement required

SIC	GVA wt 2010	DESCRIPTION	RATING
01	6.1668	01:Crop And Animal Production, Hunting And Related Service Activities	B
02	0.2575	02:Forestry And Logging	B
03	0.3938	03:Fishing And Aquaculture	B
05	0.2523	05:Mining Of Coal And Lignite	B
06	18.8497	06:Extraction Of Crude Petroleum And Natural Gas	B
07	0.0008	07:Mining Of Metal Ores	A
08	1.6884	08:Other Mining And Quarrying	A
09	2.1108	09:Mining Support Service Activities	C
10	12.9872	10:Manufacture Of Food Products	A
11	2.8812	11:Manufacture Of Beverages	A
12	0.6649	12:Manufacture Of Tobacco Products	A
13	1.7373	13:Manufacture Of Textiles	A
14	1.0091	14:Manufacture Of Wearing Apparel	A
15	0.4014	15:Manufacture Of Leather And Related Products	A
16	1.5837	16:Manufacture Of Wood & Products Of Wood & Cork, Except Furniture; Manuf. Of Articles Of Straw	A
17	2.6621	17:Manufacture Of Paper And Paper Products	A
18	4.0514	18:Printing And Reproduction Of Recorded Media	A
19	2.5212	19:Manufacture Of Coke And Refined Petroleum Products	A
20	6.3528	20:Manufacture Of Chemicals And Chemical Products	A
21	9.6881	21:Manufacture Of Basic Pharmaceutical Products And Pharmaceutical Preparations	A
22	5.3038	22:Manufacture Of Rubber And Plastic Products	A
23	3.3037	23:Manufacture Of Other Non-Metallic Mineral Products	A
24	2.3119	24:Manufacture Of Basic Metals	A
25	9.3567	25:Manufacture Of Fabricated Metal Products, Except Machinery And Equipment	A
26	6.6005	26:Manufacture Of Computer, Electronic And Optical Products	A
27	3.2148	27:Manufacture Of Electrical Equipment	A
28	7.5652	28:Manufacture Of Machinery And Equipment N.E.C.	A
29	6.9545	29:Manufacture Of Motor Vehicles, Trailers And Semi-Trailers	A
30	4.7292	30:Manufacture Of Other Transport Equipment	B
31	2.0912	31:Manufacture Of Furniture	A
32	2.6417	32:Other Manufacturing	A
33	3.4211	33:Repair And Installation Of Machinery And Equipment	A
35	13.0196	35:Electricity, Gas, Steam And Air Conditioning Supply	B
36	3.1380	36:Water Collection, Treatment And Supply	B
37	3.3782	37:Sewerage	B
38	5.4709	38:Waste Collection, Treatment And Disposal Activities; Materials Recovery	B
39	0.0979	39:Remediation Activities And Other Waste Management Services	B
41	26.4639	41:Construction Of Buildings	B
42	12.4638	42:Civil Engineering	B
43	24.2281	43:Specialised Construction Activities	B
45	18.1735	45:Wholesale And Retail Trade And Repair Of Motor Vehicles And Motorcycles	B
46	35.9697	46:Wholesale Trade, Except Of Motor Vehicles And Motorcycles	B
47	56.9506	47:Retail Trade, Except Of Motor Vehicles And Motorcycles	B
49	17.9047	49:Land Transport And Transport Via Pipelines	B
50	2.9746	50:Water Transport	B
51	4.1516	51:Air Transport	B
52	11.3696	52:Warehousing And Support Activities For Transportation	B
53	7.8709	53:Postal And Courier Activities	B
55	6.9251	55:Accommodation	A
56	19.8159	56:Food And Beverage Service Activities	A
58	8.3085	58:Publishing Activities	A
59	6.0071	59:Motion Picture, Video & TV Programme Production, Sound Recording & Music Publishing Activities	B
60	3.3225	60:Programming And Broadcasting Activities	C
61	17.5409	61:Telecommunications	B
62	24.9924	62:Computer Programming, Consultancy And Related Activities	C
63	3.2788	63:Information Service Activities	C
64	64.9096	64:Financial Service Activities, Except Insurance And Pension Funding	C
65	15.9053	65:Insurance, Reinsurance And Pension Funding, Except Compulsory Social Security	C
66	14.5935	66:Activities Auxiliary To Financial Services And Insurance Activities	B
68.1/2	92.4782	68:Real Estate Activities (non-fee or contract)	B
68.3	4.3903	68:Real Estate (fee or contract basis)	C
69	25.4917	69:Legal And Accounting Activities	B
70	11.5481	70:Activities Of Head Offices; Management Consultancy Activities	C
71	15.9098	71:Architectural And Engineering Activities; Technical Testing And Analysis	C

SIC	GVA wt 2010	DESCRIPTION	RATING
09	2.1108	09:Mining Support Service Activities	C
60	3.3225	60:Programming And Broadcasting Activities	C
62	24.9924	62:Computer Programming, Consultancy And Related Activities	C
63	3.2788	63:Information Service Activities	C
64	64.9096	64:Financial Service Activities, Except Insurance And Pension Funding	C
66	14.5935	66:Activities Auxiliary To Financial Services And Insurance Activities	C
68.3	4.3903	68:Real Estate (fee or contract basis)	C
70	11.5481	70:Activities Of Head Offices; Management Consultancy Activities	C
71	15.9098	71:Architectural And Engineering Activities; Technical Testing And Analysis	C
73	5.2721	73:Advertising And Market Research	C
75	1.3163	75:Veterinary Activities	C
85M	14.0167	85:Education (market)	C
86 M	12.8306	86:Human Health (market)	C
87	10.7664	87:Residential Care Activities	C
88	9.7829	88:Social Work Activities Without Accommodation	C
91	1.5701	91:Libraries, Archives, Museums And Other Cultural Activities	C
93	3.9505	93:Sports Activities And Amusement And Recreation Activities	C
94	6.3227	94:Activities Of Membership Organisations	C
97	4.6486	97:Activities Of Households As Employers Of Domestic Personnel	C
215.5328			
01	6.1668	01:Crop And Animal Production, Hunting And Related Service Activities	B
02	0.2575	02:Forestry And Logging	B
03	0.3938	03:Fishing And Aquaculture	B
05	0.2523	05:Mining Of Coal And Lignite	B
06	18.8497	06:Extraction Of Crude Petroleum And Natural Gas	B
30	4.7292	30:Manufacture Of Other Transport Equipment	B
35	13.0196	35:Electricity, Gas, Steam And Air Conditioning Supply	B
36	3.1380	36:Water Collection, Treatment And Supply	B
37	3.3782	37:Sewerage	B
38	5.4709	38:Waste Collection, Treatment And Disposal Activities; Materials Recovery	B
39	0.0979	39:Remediation Activities And Other Waste Management Services	B
41	26.4639	41:Construction Of Buildings	B
42	12.4638	42:Civil Engineering	B
43	24.2281	43:Specialised Construction Activities	B
45	18.1735	45:Wholesale And Retail Trade And Repair Of Motor Vehicles And Motorcycles	B
46	35.9697	46:Wholesale Trade, Except Of Motor Vehicles And Motorcycles	B
47	56.9506	47:Retail Trade, Except Of Motor Vehicles And Motorcycles	B
49	17.9047	49:Land Transport And Transport Via Pipelines	B
50	2.9746	50:Water Transport	B
51	4.1516	51:Air Transport	B
52	11.3696	52:Warehousing And Support Activities For Transportation	B
53	7.8709	53:Postal And Courier Activities	B
59	6.0071	59:Motion Picture, Video & TV Programme Production, Sound Recording & Music Publishing Activities	B
61	17.5409	61:Telecommunications	B
65	15.9053	65:Insurance, Reinsurance And Pension Funding, Except Compulsory Social Security	B
68.1/2	92.4782	68:Real Estate Activities (non-fee or contract)	B
69	25.4917	69:Legal And Accounting Activities	B
72	3.0574	72:Scientific Research And Development	B
74	5.9921	74:Other Professional, Scientific And Technical Activities	B
77	10.1158	77:Rental And Leasing Activities	B
79	5.4280	79:Travel Agency, Tour Operator And Other Reservation Service And Related Activities	B
81	5.2036	81:Services To Buildings And Landscape Activities	B
82	12.0368	82:Office Administrative, Office Support And Other Business Support Activities	B
84	53.4865	84:Public Administration And Defence; Compulsory Social Security	B
85NM	48.4259	85:Education (non-market)	B
86 NM	42.3255	86:Human Health (non-market)	B
90	2.2780	90:Creative, Arts And Entertainment Activities	B
92	6.8340	92:Gambling And Betting Activities	B
96	6.6389	96:Other Personal Service Activities	B
633.5205			

SIC	GVA wt 2010	DESCRIPTION	RATING
72	3.0574	72:Scientific Research And Development	B
73	5.2721	73:Advertising And Market Research	C
74	5.9921	74:Other Professional, Scientific And Technical Activities	B
75	1.3163	75:Veterinary Activities	C
77	10.1158	77:Rental And Leasing Activities	B
78	11.4623	78:Employment Activities	A
79	5.4280	79:Travel Agency, Tour Operator And Other Reservation Service And Related Activities	B
80	2.1055	80:Security And Investigation Activities	A
81	5.2036	81:Services To Buildings And Landscape Activities	B
82	12.0368	82:Office Administrative, Office Support And Other Business Support Activities	B
84	53.4865	84:Public Administration And Defence; Compulsory Social Security	B
85NM	48.4259	85:Education (non-market)	B
85M	14.0167	85:Education (market)	C
86 M	12.8306	86:Human Health (market)	C
86 NM	42.3255	86:Human Health (non-market)	B
87	10.7664	87:Residential Care Activities	C
88	9.7829	88:Social Work Activities Without Accommodation	C
90	2.2780	90:Creative, Arts And Entertainment Activities	B
91	1.5701	91:Libraries, Archives, Museums And Other Cultural Activities	C
92	6.8340	92:Gambling And Betting Activities	B
93	3.9505	93:Sports Activities And Amusement And Recreation Activities	C
94	6.3227	94:Activities Of Membership Organisations	C
95	1.3344	95:Repair Of Computers And Personal And Household Goods	A
96	6.6389	96:Other Personal Service Activities	B
97	4.6486	97:Activities Of Households As Employers Of Domestic Personnel	C

SIC	GVA wt 2010	DESCRIPTION	RATING
07	0.0008	07:Mining Of Metal Ores	A
08	1.6884	08:Other Mining And Quarrying	A
10	12.9872	10:Manufacture Of Food Products	A
11	2.8812	11:Manufacture Of Beverages	A
12	0.6649	12:Manufacture Of Tobacco Products	A
13	1.7373	13:Manufacture Of Textiles	A
14	1.0091	14:Manufacture Of Wearing Apparel	A
15	0.4014	15:Manufacture Of Leather And Related Products	A
16	1.5837	16:Manufacture Of Wood & Products Of Wood & Cork, Except Furniture; Manuf. Of Articles Of Straw	A
17	2.6621	17:Manufacture Of Paper And Paper Products	A
18	4.0514	18:Printing And Reproduction Of Recorded Media	A
19	2.5212	19:Manufacture Of Coke And Refined Petroleum Products	A
20	6.3528	20:Manufacture Of Chemicals And Chemical Products	A
21	9.6881	21:Manufacture Of Basic Pharmaceutical Products And Pharmaceutical Preparations	A
22	5.3038	22:Manufacture Of Rubber And Plastic Products	A
23	3.3037	23:Manufacture Of Other Non-Metallic Mineral Products	A
24	2.3119	24:Manufacture Of Basic Metals	A
25	9.3567	25:Manufacture Of Fabricated Metal Products, Except Machinery And Equipment	A
26	6.6005	26:Manufacture Of Computer, Electronic And Optical Products	A
27	3.2148	27:Manufacture Of Electrical Equipment	A
28	7.5652	28:Manufacture Of Machinery And Equipment N.E.C.	A
29	6.9545	29:Manufacture Of Motor Vehicles, Trailers And Semi-Trailers	A
31	2.0912	31:Manufacture Of Furniture	A
32	2.6417	32:Other Manufacturing	A
33	3.4211	33:Repair And Installation Of Machinery And Equipment	A
55	6.9251	55:Accommodation	A
56	19.8159	56:Food And Beverage Service Activities	A
58	8.3085	58:Publishing Activities	A
78	11.4623	78:Employment Activities	A
80	2.1055	80:Security And Investigation Activities	A
95	1.3344	95:Repair Of Computers And Personal And Household Goods	A
150.9464			

Note: The analysis is based upon ONS expert assessment of the weakest group in each industry and does not necessarily reflect the overall view of an ir

Appendix 3 - Eurostat C Ratings requiring improvement

SIC	GVA wt 2010	DESCRIPTION
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The following industries use employment data in a market setting

09	2.1108	09: Mining Support Service Activities
64	64.9096	64: Financial Service Activities, Except Insurance And Pension Funding
68.3	4.3903	68: Real Estate (fee or contract basis)
70	11.5481	70: Activities Of Head Offices; Management Consultancy Activities
85M	14.0167	85: Education (market)
86M	12.8306	86: Human Health (market)
87	10.7664	87: Residential Care Activities
88	9.7829	88: Social Work Activities Without Accommodation
94	6.3227	94: Activities Of Membership Organisations
136.6782		

The following industries use wage data in a market setting as deflators

62	24.9924	62: Computer Programming, Consultancy And Related Activities
63	3.2788	63: Information Service Activities
71	15.9098	71: Architectural And Engineering Activities; Technical Testing And Analysis
73	5.2721	73: Advertising And Market Research
49.4531		

The following industries use deflation data which are weak proxies

60	3.3225	60: Programming And Broadcasting Activities
66	14.5935	66: Activities Auxiliary To Financial Services And Insurance Activities
17.9160		

The following industries use Household Final Consumption Expenditure data.

91	1.5701	91: Libraries, Archives, Museums And Other Cultural Activities
93	3.9505	93: Sports Activities And Amusement And Recreation Activities
97	4.6486	97: Activities Of Households As Employers Of Domestic Personnel
10.1692		

The following industry does not have a short-term indicator and uses human health (86) as a proxy. This is a legacy of the SIC03 structure where SIC07 industries 75 and 86 reported under industry 85 health and social work. A new data source is being developed

75	1.3163	75: Veterinary Activities
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Note: The analysis is based upon ONS expert assessment of the weakest group in each industry and does not necessarily reflect the overall view of an industry.

Appendix 4 - Volatility Ratings

SIC	GVA wt 2010	DESCRIPTION	RATING
01	6.1668	01:Crop And Animal Production, Hunting And Related Service Activities	L
02	0.2575	02:Forestry And Logging	L
03	0.3938	03:Fishing And Aquaculture	H
05	0.2523	05:Mining Of Coal And Lignite	L
06	18.8497	06:Extraction Of Crude Petroleum And Natural Gas	M
07	0.0008	07:Mining Of Metal Ores	L
08	1.6884	08:Other Mining And Quarrying	L
09	2.1108	09:Mining Support Service Activities	H
10	12.9872	10:Manufacture Of Food Products	H
11	2.8812	11:Manufacture Of Beverages	H
12	0.6649	12:Manufacture Of Tobacco Products	L
13	1.7373	13:Manufacture Of Textiles	L
14	1.0091	14:Manufacture Of Wearing Apparel	L
15	0.4014	15:Manufacture Of Leather And Related Products	L
16	1.5837	16:Manufacture Of Wood & Products Of Wood & Cork, Except Furniture; Manuf. Of Articles Of Straw	M
17	2.6621	17:Manufacture Of Paper And Paper Products	M
18	4.0514	18:Printing And Reproduction Of Recorded Media	M
19	2.5212	19:Manufacture Of Coke And Refined Petroleum Products	M
20	6.3528	20:Manufacture Of Chemicals And Chemical Products	M
21	9.6881	21:Manufacture Of Basic Pharmaceutical Products And Pharmaceutical Preparations	M
22	5.3038	22:Manufacture Of Rubber And Plastic Products	L
23	3.3037	23:Manufacture Of Other Non-Metallic Mineral Products	L
24	2.3119	24:Manufacture Of Basic Metals	L
25	9.3567	25:Manufacture Of Fabricated Metal Products, Except Machinery And Equipment	H
26	6.6005	26:Manufacture Of Computer, Electronic And Optical Products	L
27	3.2148	27:Manufacture Of Electrical Equipment	L
28	7.5652	28:Manufacture Of Machinery And Equipment N.E.C.	L
29	6.9545	29:Manufacture Of Motor Vehicles, Trailers And Semi-Trailers	M
30	4.7292	30:Manufacture Of Other Transport Equipment	L
31	2.0912	31:Manufacture Of Furniture	M
32	2.6417	32:Other Manufacturing	L
33	3.4211	33:Repair And Installation Of Machinery And Equipment	M
35	13.0196	35:Electricity, Gas, Steam And Air Conditioning Supply	M
36	3.1380	36:Water Collection, Treatment And Supply	H
37	3.3782	37:Sewerage	M
38	5.4709	38:Waste Collection, Treatment And Disposal Activities; Materials Recovery	M
39	0.0979	39:Remediation Activities And Other Waste Management Services	M
41	26.4639	41:Construction Of Buildings	L
42	12.4638	42:Civil Engineering	L
43	24.2281	43:Specialised Construction Activities	L
45	18.1735	45:Wholesale And Retail Trade And Repair Of Motor Vehicles And Motorcycles	L
46	35.9697	46:Wholesale Trade, Except Of Motor Vehicles And Motorcycles	L
47	56.9506	47:Retail Trade, Except Of Motor Vehicles And Motorcycles	L
49	17.9047	49:Land Transport And Transport Via Pipelines	M
50	2.9746	50:Water Transport	M
51	4.1516	51:Air Transport	L
52	11.3696	52:Warehousing And Support Activities For Transportation	L
53	7.8709	53:Postal And Courier Activities	L
55	6.9251	55:Accommodation	L
56	19.8159	56:Food And Beverage Service Activities	L
58	8.3085	58:Publishing Activities	L
59	6.0071	59:Motion Picture, Video & TV Programme Production, Sound Recording & Music Publishing Activities	M
60	3.3225	60:Programming And Broadcasting Activities	L
61	17.5409	61:Telecommunications	L
62	24.9924	62:Computer Programming, Consultancy And Related Activities	L
63	3.2788	63:Information Service Activities	L
64	64.9096	64:Financial Service Activities, Except Insurance And Pension Funding	L
65	15.9053	65:Insurance, Reinsurance And Pension Funding, Except Compulsory Social Security	L
66	14.5935	66:Activities Auxilliary To Financial Services And Insurance Activities	L

H = High
M = Medium
L = Low

SIC	GVA wt 2010	DESCRIPTION	RATING
03	0.3938	03:Fishing And Aquaculture	H
09	2.1108	09:Mining Support Service Activities	H
10	12.9872	10:Manufacture Of Food Products	H
11	2.8812	11:Manufacture Of Beverages	H
25	9.3567	25:Manufacture Of Fabricated Metal Products, Except Machinery And Equipment	H
36	3.1380	36:Water Collection, Treatment And Supply	H
30.8677			
06	18.8497	06:Extraction Of Crude Petroleum And Natural Gas	M
16	1.5837	16:Manufacture Of Wood & Products Of Wood & Cork, Except Furniture; Manuf. Of Articles Of Straw	M
17	2.6621	17:Manufacture Of Paper And Paper Products	M
18	4.0514	18:Printing And Reproduction Of Recorded Media	M
19	2.5212	19:Manufacture Of Coke And Refined Petroleum Products	M
20	6.3528	20:Manufacture Of Chemicals And Chemical Products	M
21	9.6881	21:Manufacture Of Basic Pharmaceutical Products And Pharmaceutical Preparations	M
29	6.9545	29:Manufacture Of Motor Vehicles, Trailers And Semi-Trailers	M
31	2.0912	31:Manufacture Of Furniture	M
33	3.4211	33:Repair And Installation Of Machinery And Equipment	M
35	13.0196	35:Electricity, Gas, Steam And Air Conditioning Supply	M
37	3.3782	37:Sewerage	M
38	5.4709	38:Waste Collection, Treatment And Disposal Activities; Materials Recovery	M
39	0.0979	39:Remediation Activities And Other Waste Management Services	M
49	17.9047	49:Land Transport And Transport Via Pipelines	M
50	2.9746	50:Water Transport	M
59	6.0071	59:Motion Picture, Video & TV Programme Production, Sound Recording & Music Publishing Activities	M
69	25.4917	69:Legal And Accounting Activities	M
85M	14.0167	85:Education (market)	M
85NM	48.4259	85:Education (non-market)	M
90	2.2780	90:Creative, Arts And Entertainment Activities	M
92	6.8340	92:Gambling And Betting Activities	M
94	6.3227	94:Activities Of Membership Organisations	M
95	1.3344	95:Repair Of Computers And Personal And Household Goods	M
96	6.6389	96:Other Personal Service Activities	M
97	4.6486	97:Activities Of Households As Employers Of Domestic Personnel	M
223.0197			
01	6.1668	01:Crop And Animal Production, Hunting And Related Service Activities	L
02	0.2575	02:Forestry And Logging	L
05	0.2523	05:Mining Of Coal And Lignite	L
07	0.0008	07:Mining Of Metal Ores	L
08	1.6884	08:Other Mining And Quarrying	L
12	0.6649	12:Manufacture Of Tobacco Products	L
13	1.7373	13:Manufacture Of Textiles	L
14	1.0091	14:Manufacture Of Wearing Apparel	L
15	0.4014	15:Manufacture Of Leather And Related Products	L
22	5.3038	22:Manufacture Of Rubber And Plastic Products	L
23	3.3037	23:Manufacture Of Other Non-Metallic Mineral Products	L
24	2.3119	24:Manufacture Of Basic Metals	L
26	6.6005	26:Manufacture Of Computer, Electronic And Optical Products	L
27	3.2148	27:Manufacture Of Electrical Equipment	L
28	7.5652	28:Manufacture Of Machinery And Equipment N.E.C.	L
30	4.7292	30:Manufacture Of Other Transport Equipment	L
32	2.6417	32:Other Manufacturing	L
41	26.4639	41:Construction Of Buildings	L
42	12.4638	42:Civil Engineering	L
43	24.2281	43:Specialised Construction Activities	L
45	18.1735	45:Wholesale And Retail Trade And Repair Of Motor Vehicles And Motorcycles	L
46	35.9697	46:Wholesale Trade, Except Of Motor Vehicles And Motorcycles	L
47	56.9506	47:Retail Trade, Except Of Motor Vehicles And Motorcycles	L

SIC	GVA wt 2010	DESCRIPTION	RATING
68.1/2	92.4782	68:Real Estate Activities (non-fee or contract)	L
68.3	4.3903	68:Real Estate (fee or contract basis)	L
69	25.4917	69:Legal And Accounting Activities	M
70	11.5481	70:Activities Of Head Offices; Management Consultancy Activities	L
71	15.9098	71:Architectural And Engineering Activities; Technical Testing And Analysis	L
72	3.0574	72:Scientific Research And Development	L
73	5.2721	73:Advertising And Market Research	L
74	5.9921	74:Other Professional, Scientific And Technical Activities	L
75	1.3163	75:Veterinary Activities	L
77	10.1158	77:Rental And Leasing Activities	L
78	11.4623	78:Employment Activities	L
79	5.4280	79:Travel Agency, Tour Operator And Other Reservation Service And Related Activities	L
80	2.1055	80:Security And Investigation Activities	L
81	5.2036	81:Services To Buildings And Landscape Activities	L
82	12.0368	82:Office Administrative, Office Support And Other Business Support Activities	L
84	53.4865	84:Public Administration And Defence; Compulsory Social Security	L
85NM	48.4259	85:Education (non-market)	M
85M	14.0167	85:Education (market)	M
86 M	12.8306	86:Human Health (market)	L
86 NM	42.3255	86:Human Health (non-market)	L
87	10.7664	87:Residential Care Activities	L
88	9.7829	88:Social Work Activities Without Accommodation	L
90	2.2780	90:Creative, Arts And Entertainment Activities	M
91	1.5701	91:Libraries, Archives, Museums And Other Cultural Activities	L
92	6.8340	92:Gambling And Betting Activities	M
93	3.9505	93:Sports Activities And Amusement And Recreation Activities	L
94	6.3227	94:Activities Of Membership Organisations	M
95	1.3344	95:Repair Of Computers And Personal And Household Goods	M
96	6.6389	96:Other Personal Service Activities	M
97	4.6486	97:Activities Of Households As Employers Of Domestic Personnel	M

SIC	GVA wt 2010	DESCRIPTION	RATING
51	4.1516	51:Air Transport	L
52	11.3696	52:Warehousing And Support Activities For Transportation	L
53	7.8709	53:Postal And Courier Activities	L
55	6.9251	55:Accommodation	L
56	19.8159	56:Food And Beverage Service Activities	L
58	8.3085	58:Publishing Activities	L
60	3.3225	60:Programming And Broadcasting Activities	L
61	17.5409	61:Telecommunications	L
62	24.9924	62:Computer Programming, Consultancy And Related Activities	L
63	3.2788	63:Information Service Activities	L
64	64.9096	64:Financial Service Activities, Except Insurance And Pension Funding	L
65	15.9053	65:Insurance, Reinsurance And Pension Funding, Except Compulsory Social Security	L
66	14.5935	66:Activities Auxiliary To Financial Services And Insurance Activities	L
68.1/2	92.4782	68:Real Estate Activities (non-fee or contract)	L
68.3	4.3903	68:Real Estate (fee or contract basis)	L
70	11.5481	70:Activities Of Head Offices; Management Consultancy Activities	L
71	15.9098	71:Architectural And Engineering Activities; Technical Testing And Analysis	L
72	3.0574	72:Scientific Research And Development	L
73	5.2721	73:Advertising And Market Research	L
74	5.9921	74:Other Professional, Scientific And Technical Activities	L
75	1.3163	75:Veterinary Activities	L
77	10.1158	77:Rental And Leasing Activities	L
78	11.4623	78:Employment Activities	L
79	5.4280	79:Travel Agency, Tour Operator And Other Reservation Service And Related Activities	L
80	2.1055	80:Security And Investigation Activities	L
81	5.2036	81:Services To Buildings And Landscape Activities	L
82	12.0368	82:Office Administrative, Office Support And Other Business Support Activities	L
84	53.4865	84:Public Administration And Defence; Compulsory Social Security	L
86 M	12.8306	86:Human Health (market)	L
86 NM	42.3255	86:Human Health (non-market)	L
87	10.7664	87:Residential Care Activities	L
88	9.7829	88:Social Work Activities Without Accommodation	L
91	1.5701	91:Libraries, Archives, Museums And Other Cultural Activities	L
93	3.9505	93:Sports Activities And Amusement And Recreation Activities	L
746.1123			

Note: The analysis is based upon the weakest group in each industry and does not necessarily reflect the overall view of an industry.

Appendix 5 - Revision Ratings

SIC	GVA wt 2010	DESCRIPTION	RANK
01	6.1668	01:Crop And Animal Production, Hunting And Related Service Activities	M
02	0.2575	02:Forestry And Logging	L
03	0.3938	03:Fishing And Aquaculture	L
05	0.2523	05:Mining Of Coal And Lignite	L
06	18.8497	06:Extraction Of Crude Petroleum And Natural Gas	L
07	0.0008	07:Mining Of Metal Ores	H
08	1.6884	08:Other Mining And Quarrying	H
09	2.1108	09:Mining Support Service Activities	L
10	12.9872	10:Manufacture Of Food Products	M
11	2.8812	11:Manufacture Of Beverages	L
12	0.6649	12:Manufacture Of Tobacco Products	L
13	1.7373	13:Manufacture Of Textiles	L
14	1.0091	14:Manufacture Of Wearing Apparel	M
15	0.4014	15:Manufacture Of Leather And Related Products	M
16	1.5837	16:Manufacture Of Wood & Products Of Wood & Cork, Except Furniture; Manuf. Of Articles Of Straw	M
17	2.6621	17:Manufacture Of Paper And Paper Products	L
18	4.0514	18:Printing And Reproduction Of Recorded Media	L
19	2.5212	19:Manufacture Of Coke And Refined Petroleum Products	L
20	6.3528	20:Manufacture Of Chemicals And Chemical Products	H
21	9.6881	21:Manufacture Of Basic Pharmaceutical Products And Pharmaceutical Preparations	L
22	5.3038	22:Manufacture Of Rubber And Plastic Products	M
23	3.3037	23:Manufacture Of Other Non-Metallic Mineral Products	H
24	2.3119	24:Manufacture Of Basic Metals	H
25	9.3567	25:Manufacture Of Fabricated Metal Products, Except Machinery And Equipment	H
26	6.6005	26:Manufacture Of Computer, Electronic And Optical Products	L
27	3.2148	27:Manufacture Of Electrical Equipment	H
28	7.5652	28:Manufacture Of Machinery And Equipment N.E.C.	H
29	6.9545	29:Manufacture Of Motor Vehicles, Trailers And Semi-Trailers	H
30	4.7292	30:Manufacture Of Other Transport Equipment	M
31	2.0912	31:Manufacture Of Furniture	M
32	2.6417	32:Other Manufacturing	L
33	3.4211	33:Repair And Installation Of Machinery And Equipment	L
35	13.0196	35:Electricity, Gas, Steam And Air Conditioning Supply	L
36	3.1380	36:Water Collection, Treatment And Supply	L
37	3.3782	37:Sewerage	M
38	5.4709	38:Waste Collection, Treatment And Disposal Activities; Materials Recovery	M
39	0.0979	39:Remediation Activities And Other Waste Management Services	L
41	26.4639	41:Construction Of Buildings	M
42	12.4638	42:Civil Engineering	M
43	24.2281	43:Specialised Construction Activities	M
45	18.1735	45:Wholesale And Retail Trade And Repair Of Motor Vehicles And Motorcycles	L
46	35.9697	46:Wholesale Trade, Except Of Motor Vehicles And Motorcycles	M
47	56.9506	47:Retail Trade, Except Of Motor Vehicles And Motorcycles	L
49	17.9047	49:Land Transport And Transport Via Pipelines	L
50	2.9746	50:Water Transport	L
51	4.1516	51:Air Transport	L
52	11.3696	52:Warehousing And Support Activities For Transportation	M
53	7.8709	53:Postal And Courier Activities	M
55	6.9251	55:Accommodation	L
56	19.8159	56:Food And Beverage Service Activities	L
58	8.3085	58:Publishing Activities	M
59	6.0071	59:Motion Picture, Video & TV Programme Production, Sound Recording & Music Publishing Activities	L
60	3.3225	60:Programming And Broadcasting Activities	M
61	17.5409	61:Telecommunications	L
62	24.9924	62:Computer Programming, Consultancy And Related Activities	L
63	3.2788	63:Information Service Activities	M
64	64.9096	64:Financial Service Activities, Except Insurance And Pension Funding	L
65	15.9053	65:Insurance, Reinsurance And Pension Funding, Except Compulsory Social Security	L
66	14.5935	66:Activities Auxiliary To Financial Services And Insurance Activities	L
68.1/2	92.4782	68:Real Estate Activities (non-fee or contract)	L
68.3	4.3903	68:Real Estate (fee or contract basis)	L
69	25.4917	69:Legal And Accounting Activities	L
70	11.5481	70:Activities Of Head Offices; Management Consultancy Activities	H

H = High
M = Medium
L = Low

SIC	GVA wt 2010	DESCRIPTION	RANK
07	0.0008	07:Mining Of Metal Ores	H
08	1.6884	08:Other Mining And Quarrying	H
20	6.3528	20:Manufacture Of Chemicals And Chemical Products	H
23	3.3037	23:Manufacture Of Other Non-Metallic Mineral Products	H
24	2.3119	24:Manufacture Of Basic Metals	H
25	9.3567	25:Manufacture Of Fabricated Metal Products, Except Machinery And Equipment	H
27	3.2148	27:Manufacture Of Electrical Equipment	H
28	7.5652	28:Manufacture Of Machinery And Equipment N.E.C.	H
29	6.9545	29:Manufacture Of Motor Vehicles, Trailers And Semi-Trailers	H
70	11.5481	70:Activities Of Head Offices; Management Consultancy Activities	H
78	11.4623	78:Employment Activities	H
79	5.4280	79:Travel Agency, Tour Operator And Other Reservation Service And Related Activities	H
69.1872			
01	6.1668	01:Crop And Animal Production, Hunting And Related Service Activities	M
10	12.9872	10:Manufacture Of Food Products	M
14	1.0091	14:Manufacture Of Wearing Apparel	M
15	0.4014	15:Manufacture Of Leather And Related Products	M
16	1.5837	16:Manufacture Of Wood & Products Of Wood & Cork, Except Furniture; Manuf. Of Articles Of Straw	M
22	5.3038	22:Manufacture Of Rubber And Plastic Products	M
30	4.7292	30:Manufacture Of Other Transport Equipment	M
31	2.0912	31:Manufacture Of Furniture	M
37	3.3782	37:Sewerage	M
38	5.4709	38:Waste Collection, Treatment And Disposal Activities; Materials Recovery	M
41	26.4639	41:Construction Of Buildings	M
42	12.4638	42:Civil Engineering	M
43	24.2281	43:Specialised Construction Activities	M
46	35.9697	46:Wholesale Trade, Except Of Motor Vehicles And Motorcycles	M
52	11.3696	52:Warehousing And Support Activities For Transportation	M
53	7.8709	53:Postal And Courier Activities	M
58	8.3085	58:Publishing Activities	M
60	3.3225	60:Programming And Broadcasting Activities	M
63	3.2788	63:Information Service Activities	M
73	5.2721	73:Advertising And Market Research	M
74	5.9921	74:Other Professional, Scientific And Technical Activities	M
77	10.1158	77:Rental And Leasing Activities	M
94	6.3227	94:Activities Of Membership Organisations	M
97	4.6486	97:Activities Of Households As Employers Of Domestic Personnel	M
208.7486			
02	0.2575	02:Forestry And Logging	L
03	0.3938	03:Fishing And Aquaculture	L
05	0.2523	05:Mining Of Coal And Lignite	L
06	18.8497	06:Extraction Of Crude Petroleum And Natural Gas	L
09	2.1108	09:Mining Support Service Activities	L
11	2.8812	11:Manufacture Of Beverages	L
12	0.6649	12:Manufacture Of Tobacco Products	L
13	1.7373	13:Manufacture Of Textiles	L
17	2.6621	17:Manufacture Of Paper And Paper Products	L
18	4.0514	18:Printing And Reproduction Of Recorded Media	L
19	2.5212	19:Manufacture Of Coke And Refined Petroleum Products	L
21	9.6881	21:Manufacture Of Basic Pharmaceutical Products And Pharmaceutical Preparations	L
26	6.6005	26:Manufacture Of Computer, Electronic And Optical Products	L
32	2.6417	32:Other Manufacturing	L
33	3.4211	33:Repair And Installation Of Machinery And Equipment	L
35	13.0196	35:Electricity, Gas, Steam And Air Conditioning Supply	L
36	3.1380	36:Water Collection, Treatment And Supply	L
39	0.0979	39:Remediation Activities And Other Waste Management Services	L
45	18.1735	45:Wholesale And Retail Trade And Repair Of Motor Vehicles And Motorcycles	L
47	56.9506	47:Retail Trade, Except Of Motor Vehicles And Motorcycles	L
49	17.9047	49:Land Transport And Transport Via Pipelines	L
50	2.9746	50:Water Transport	L
51	4.1516	51:Air Transport	L

SIC	GVA wt 2010	DESCRIPTION	RANK
71	15.9098	71:Architectural And Engineering Activities; Technical Testing And Analysis	L
72	3.0574	72:Scientific Research And Development	L
73	5.2721	73:Advertising And Market Research	M
74	5.9921	74:Other Professional, Scientific And Technical Activities	M
75	1.3163	75:Veterinary Activities	L
77	10.1158	77:Rental And Leasing Activities	M
78	11.4623	78:Employment Activities	H
79	5.4280	79:Travel Agency, Tour Operator And Other Reservation Service And Related Activities	H
80	2.1055	80:Security And Investigation Activities	L
81	5.2036	81:Services To Buildings And Landscape Activities	L
82	12.0368	82:Office Administrative, Office Support And Other Business Support Activities	L
84	53.4865	84:Public Administration And Defence; Compulsory Social Security	L
85NM	48.4259	85:Education (non-market)	L
85M	14.0167	85:Education (market)	L
86 M	12.8306	86:Human Health (market)	L
86 NM	42.3255	86:Human Health (non-market)	L
87	10.7664	87:Residential Care Activities	L
88	9.7829	88:Social Work Activities Without Accommodation	L
90	2.2780	90:Creative, Arts And Entertainment Activities	L
91	1.5701	91:Libraries, Archives, Museums And Other Cultural Activities	L
92	6.8340	92:Gambling And Betting Activities	L
93	3.9505	93:Sports Activities And Amusement And Recreation Activities	L
94	6.3227	94:Activities Of Membership Organisations	M
95	1.3344	95:Repair Of Computers And Personal And Household Goods	L
96	6.6389	96:Other Personal Service Activities	L
97	4.6486	97:Activities Of Households As Employers Of Domestic Personnel	M

SIC	GVA wt 2010	DESCRIPTION	RANK
55	6.9251	55:Accommodation	L
56	19.8159	56:Food And Beverage Service Activities	L
59	6.0071	59:Motion Picture, Video & TV Programme Production, Sound Recording & Music Publishing Activities	L
61	17.5409	61:Telecommunications	L
62	24.9924	62:Computer Programming, Consultancy And Related Activities	L
64	64.9096	64:Financial Service Activities, Except Insurance And Pension Funding	L
65	15.9053	65:Insurance, Reinsurance And Pension Funding, Except Compulsory Social Security	L
66	14.5935	66:Activities Auxiliary To Financial Services And Insurance Activities	L
68.1/2	92.4782	68:Real Estate Activities (non-fee or contract)	L
68.3	4.3903	68:Real Estate (fee or contract basis)	L
69	25.4917	69:Legal And Accounting Activities	L
71	15.9098	71:Architectural And Engineering Activities; Technical Testing And Analysis	L
72	3.0574	72:Scientific Research And Development	L
75	1.3163	75:Veterinary Activities	L
80	2.1055	80:Security And Investigation Activities	L
81	5.2036	81:Services To Buildings And Landscape Activities	L
82	12.0368	82:Office Administrative, Office Support And Other Business Support Activities	L
84	53.4865	84:Public Administration And Defence; Compulsory Social Security	L
85M	14.0167	85:Education (market)	L
85NM	48.4259	85:Education (non-market)	L
86 M	12.8306	86:Human Health (market)	L
86 NM	42.3255	86:Human Health (non-market)	L
87	10.7664	87:Residential Care Activities	L
88	9.7829	88:Social Work Activities Without Accommodation	L
90	2.2780	90:Creative, Arts And Entertainment Activities	L
91	1.5701	91:Libraries, Archives, Museums And Other Cultural Activities	L
92	6.8340	92:Gambling And Betting Activities	L
93	3.9505	93:Sports Activities And Amusement And Recreation Activities	L
95	1.3344	95:Repair Of Computers And Personal And Household Goods	L
96	6.6389	96:Other Personal Service Activities	L
722.0639			

Note: The analysis is based upon the weakest group in each industry and does not necessarily reflect the overall view of an industry.

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