ARTICLE

Yonathan van den Brink and
Mavis Anagboso
Office for National Statistics

Understanding the divergence between output and employment in the UK construction industry

SUMMARY

This article examines recent divergence between output and employment in the UK construction industry. It looks at the construction labour market and highlights how its flexibility (in relation to other industries) may have contributed to the observed divergence. It also looks at structural changes in the UK economy that may have contributed to the observed divergence between employment and output. Notably, it considers the measurement of migrant workers in the construction sector and the growth in the number of small businesses. The article concludes that, although construction statistics are well developed, the construction industry's unique characteristics still present significant challenges in the measurement methodology of output and employment.

Introduction

In the second quarter of 2008, the UK economy went into recession and the construction sector also entered a period of negative growth. Quarterly output growth in the construction sector was negative for four successive quarters (from the second quarter of 2008 to the first quarter of 2009), resulting in a peak to trough loss of output of approximately 14 per cent. However, while construction output figures started to decline in the second quarter of 2008 (**Figure 1**), employment growth figures for the industry remained positive for most of 2008 and only started falling slowly in the fourth quarter of 2008. The number of redundancies in the industry started to pick up in the third quarter of the 2008 and have been elevated since (**Figure 2**).

This article will examine the UK construction industry and attempt to explain the observed divergence between the employment and output growth figures for this industry. It will be organised as follows:

- an overview of the industry
- the methodology used in the measurement of construction statistics
- recent influences in the construction sector
- the divergence between construction output and employment
- conclusion

Background

The UK construction industry has an output of approximately £100 billion a year.

It accounts for approximately 6 per cent of Gross Domestic Product (GDP) and 7 per cent of all jobs in the UK. These jobs are located in construction businesses with sizes varying from a small business of one sole-proprietor to a corporation hiring hundreds of employees and sub-contractors.

The Office for National Statistics (ONS) classification 'construction' covers a wide range of construction activities which include house building, office building, infrastructure, and repair and maintenance. These categories apply to the measurement of output and employment in the construction sector. The output measures in these sub-categories however, are based on what many refer to as 'the narrow definition of construction' (Pearce 2003). This definition (Division 45 of the Standard Industrial Classification (SIC)) refers to the output of contractors and excludes 'the supply chain for construction materials, products and assemblies, and professional services such as management, architecture, engineering design and surveying'. It also excludes the informal sector (for example DIY and black market work).

The labour market characteristics of the construction industry are unique, with the self-employed making up approximately 40 per cent of the workforce; the largest proportion of self-employed workers in the UK's industrial makeup. Additionally in 2000, the UK construction sector was shown to have the largest rate of self-employment of the EU-15 countries¹ (Briscoe et al. 2000)².

Briscoe (2006) has argued that even

Figure 1
Output and employment of UK construction, 2004–2009

Percentage change quarter on previous quarter, constant (2005) prices, seasonally adjusted

Source: Workforce Jobs series and Output in the Construction Industry, ONS

Figure 2
Redundancies per quarter in the construction industry

Source: Labour Market Statistics, ONS

though 'construction in the UK is today served by a well-developed system of statistical reporting', the above mentioned characteristics cause difficulties in the measurement of output and employment. Consequently, methodological improvements and revisions are continually introduced, as a result of ONS's and users' scrutiny.

Measuring construction

Construction output

Output is measured using the 'Quarterly Inquiry of Activities for Construction and Allied Trades'. This is a business (employer-based) survey which asks a sample of VAT registered construction contractors³ for the value of their construction output. Note that this is different from the measure 'turnover', which is used for most UK⁴ industries, as 'value of construction output' excludes the supply chain (for example architect bureaux, brick-makers and so on). Further, this measure excludes VAT and any work done by subcontractors, to avoid double counting. In the National Accounts, the value added measure of construction (which excludes all intermediate consumption) is used in the measurement of GDP. Planned improvements in the

measurement of construction output are outlined in the **Appendix**.

Construction employment

ONS measures employment in the economy as a whole through two types of surveys: household and employer-based surveys. From these surveys the Workforce Jobs (WFJ) series is constructed. WFJ is the sum of employee jobs (which is normally derived from employer-based surveys) and self-employment jobs (derived from the Labour Force Survey (LFS), a household survey⁵).

Table 1
Schematic representation of the estimation of WFJ in construction

UK Workforce Jobs in Construction
=
Employee Jobs
GB: LFS benchmarked to ABI1
Northern Ireland: DETINI's Quarterly Employment Survey ¹
+
Self-employed Jobs
GB: LFS
Northern Ireland: DETINI's Quarterly Employment Survey ¹
+
Government Supported Trainees
DIUS, Northern Ireland ¹

Note:

¹ Northern Ireland Jobs and Government Supported Trainees are a relatively small part of the construction workforce and will therefore not be discussed in this article.

Source: ONS

The construction industry differs from other industries with regard to the measurement of employee jobs. Unlike most industries, the LFS (benchmarked against the Annual Business Inquiry (ABI)⁶) is, for historic reasons, used to measure the number of employee jobs as well as self-employed jobs in construction (**Table 1**). To bring the construction methodology in line with other industries in the National Accounts, ONS is currently developing new methodologies for the measurement of construction jobs, information on which can be found in the appendix.

Recent influences in the construction sector

The level of construction activity depends on the interaction of demand and supply factors that are often cyclical in nature. The recent contraction in construction activity has (to a large extent) been driven by a fall in demand which has inevitably led to reduced supply. Prior to the financial crisis, households engaged in excessive borrowing to pay elevated house prices in the period of low interest rates and steady economic growth. However, the effect of cyclical policy tightening, such as increasing interest rates, increased the burden of servicing the debts of over-extended households, while placing downward pressure on both domestic demand and house prices, and resulted in a loss of output in the private housing industry.

Other demand-side factors that have influenced changes in construction activity include:

- consumer/business access to credit
- consumer/business optimism
- domestic housing market
- labour market conditions
- government policies (for instance to bring forward public sector

construction projects in response to falling economic activity)

The fortunes of the construction industry have played a pivotal role in the recent economic downturn and in the subsequent policy debate to aid recovery. The construction sector has been particularly affected by the ongoing financial crisis because of its link to the housing market (new housing work and housing repair and maintenance make up over a third of construction activity). Thus, while the contraction in construction volume growth has been broad-based across the different categories of construction, it has been particularly noticeable in construction housing activity. The relationship between construction activity and house prices is highlighted in **Figure 3**. It shows that the

performance of the construction industry over the last thirty years has been strongly allied to developments in private residential real estate markets. In particular, it shows that the recent fall in construction output has been driven by weakness in the real estate market. **Figure 3** indicates that there is a positive relationship between house price changes and construction activity; higher house prices (which may be taken as an indication of excess demand over supply) are likely to lead to an increase in house building and therefore construction output.

The construction sector accounts for approximately 6 per cent of GDP; nevertheless, GDP growth is sensitive to fluctuations in construction activity due to the tendency for swings in construction output to be both large and rapid (**Figure 4**). The sensitivity of GDP to

developments in construction is also attributed to the fact that construction activity is intrinsically linked to other sectors of the economy; for instance manufacturing, business investment and the labour market. Therefore, falling output in construction could affect related industries like brick manufacture, conveyancing, and removal services.

The divergence between construction jobs and output

The effect of the 2008/09 recession on the labour market was varied across different sectors of the economy. Generally, falling output is expected to lead to a weakening in the demand for labour, as this demand is derived from output. Due to adjustment costs however, there is often a lag between the fall in output and labour demand.

Figure 3
Nationwide house prices¹ and construction output²

Percentage change on a year earlier

Notes:

- 1 Not seasonally adjusted.
- 2 Seasonally adjusted.

Source: *Output in the Construction Industry, ONS and Nationwide*

Figure 4
Construction output and GDP

Percentage change on a year earlier, chained volume measures, seasonally adjusted

Source: *Output in the Construction Industry and National Accounts, ONS*

Specifically, employers may find that the cost of keeping their labour force on is less than having to hire them back when the economy picks up again. Although this can have future cost saving benefits, the risks to this policy are that it is dependent on the recovery of the economy before the financial means of a business to pay salaries runs out.

The drop in whole-economy employment in the 2008/2009 recession was mild compared to previous recessions. At similar points in the 1980s and 1990s recessions, employment (whole economy) had fallen by more than the 2008/09 recession, despite smaller falls in output (Table 2). The delayed adjustment in employment observed in the UK economy may in part be attributable to a moderation in pay growth and the adoption of flexible working practices (for instance, a reduction in hours) as well as Government's support and the forbearance of banks in the case of breaches of loan covenants (Bank of England 2009). A forthcoming ELMR article will look more closely at the performance of the labour market relative to GDP.

While these are influences contributing to the observed divergence between output and employment in the construction sector, there are other factors that have contributed to the resilience in construction jobs. This article considers two possibilities:

- flexibility of the construction labour market
- structural changes in the UK economy

Flexibility of the construction labour market

The construction industry has seen a stronger lag in employment figures compared with the rest of the economy, despite the much stronger drop in output compared to UK GDP figures. This industry has a high rate of self-employment, with the self-employed making up approximately 40 per cent of the workforce. These high levels compared to other industries (Figure 5) can be explained by high levels of subcontracting in the industry, as 'main contractors use subcontractors as a means of surviving the volatility of the construction business cycle' (Dainty et al. 2001). In addition, government policies have made the setting up of small businesses fiscally attractive (see HM Treasury and HMRC 2009 and Edgell 2006).

While this might be expected to result in a rapid shakeout of labour, as subcontractors can be laid off at short notice,

in practice there appear to be significant effects in the opposite direction. A side-effect of the high number of subcontractors and self-employed could be that a drop in output takes longer to feed through into the construction employment figures, because small subcontractors may continue to perform small time work even after the major contractors stop hiring them. In addition, workers from other ailing industries who have been laid-off may decide to set up their own construction business, the threshold for which is relatively low. It is therefore possible that a drop in employment in some other industries could have made a positive contribution to construction employment. Although it is unlikely that there would be sufficient work for all of these businesses during a recession, it is possible that the amount of small scale residential work will increase during recessions as people

are unable to move homes. Moreover, psychological factors may still make running a struggling business preferable to applying for unemployment benefits.

The employee versus self-employment data for the construction industry (Figure 6) partly supports this observation. Self-employment as a proportion of total WFJ rose as output in construction started to contract in 2008. In early 2009 however, as the severity of the downturn became apparent, this trend reversed as self-employment figures dropped sharply. As a consequence of even sharper drops in employee figures in the third quarter of 2009, the latest data show a sharp rise in relative self-employment levels. It is unclear whether the recent rebound in the share of self-employment represents a response to the return to positive output growth. However, it could suggest that as the output shocks have worked their way through

Table 2

Output and employment in the 1980s, 1990s and 2008/09 recessions

United Kingdom	Percentage changes five quarters after start of recession		
	1980s	1990s	2008/09
GDP	-4.7	-2.5	-6.0
Employment (WFJ)	-2.4	-3.4	-2.1

Source: Workforce jobs, ONS

Figure 5

Self-employed in construction, manufacturing, services and UK total economy

Percentage of respective total jobs

Source: Workforce Jobs series, ONS

Figure 6

Self-employment as proportion of total construction, 2004–2009

Per cent

Source: Workforce Jobs series, ONS

Figure 7
Output and employment of UK construction, 1979–2009

Percentage change quarter on same quarter a year earlier, constant (2005) prices, seasonally adjusted

Source: Workforce Job series and Output in the Construction Industry, ONS

the economy, self-employed jobs will have suffered less than employee jobs. Note that this data is volatile, on a quarterly basis, and thus it may not be possible to draw definite conclusions from it concerning 2008/2009 until a longer time-series is available. In addition the data may be clouded by the existence of high levels of what is known as false self-employment⁷.

To supplement the analysis in the previous two paragraphs, it might be useful to see how the current figures and trends compare to past observations. In particular, if a divergence such as we are seeing now has occurred in the past. **Figure 7** shows quarterly Workforce Jobs and output figures for the construction industry on a year-on-year basis over the last 30 years. This graph suggests that a change in employment tends to lag a change in output. In particular, it took two quarters for the large falls in construction output in the early 1980s to be translated in to falling employment. Furthermore, **Table 3** shows that at similar points in the recession during the early 1980s, employment and output growth in the construction sector contracted at approximately the same rate as is currently observed. The current divergence between employment and output is therefore, by no means out of line with previous experience, as is most clearly illustrated in the early eighties recession.

In addition to a time-series comparison it is useful to make a cross-sectional comparison by looking at the same figures for some of the larger European Union countries (**Figure 8**).

The four countries shown in **Figure 8** have seen significant drops in construction output at some point during the last 2 years, although in terms of magnitude only Italy

and Spain come close to the situation in the UK. In Germany and France, as in the UK, employment started contracting two quarters after output first started to show negative growth, while in Italy this took three quarters and in Spain four quarters. Direct government support for construction jobs may explain why some of the above countries have barely seen any negative growth in construction employment figures at all.

This provides a plausible explanation for the divergence between output and employment in the light of economic factors and time-series and cross-sectional comparisons. Nonetheless, it is also possible that changes in the structure of the economy, or in a specific industry, cause existing measurement methods to become less accurate. It is important to recognise these changes in order to ensure that ONS's statistics continue to be of the highest possible quality. The following two sections will look at two structural changes that may have contributed to the divergence between construction output and employment.

Structural changes in the UK economy

The UK economy is constantly evolving, and to make official statistics of the UK economy representative of the economy

the ONS continues to develop the methodologies used in producing its statistics. In the construction sector, there are a few structural changes in the UK economy that may have contributed to the divergence between employment and output in the construction industry. They include:

- migration flows of foreign workers in the construction industry
- growth in the number of small businesses

Migration flows of foreign workers in the construction industry

A possible reason for the divergence between employment and output in the construction sector could be related to the measurement of migrant workers. LFS data shows that roughly one in ten construction workers are foreign born (Green 2008). Although this is below the UK average of 13 per cent (ONS 2009a), Chappell et al. (2008) have argued that migrant workers play a significant role in the UK construction industry. More importantly, the seasonality of construction work and thus migration means that foreign construction workers are likely to live in the UK for relatively short amounts of time (Pollard et al. 2008). This means that,

Table 3
Output and employment in construction: 1980s, 1990s and 2008/09 recessions

	Percentage changes five quarters after start of recession in total economy		
	1980s	1990s	2008/09
Output	-13.9	-9.1	-13.6
Employment (WFI)	-3.5	-11.2	-4.0

Source: ONS

Figure 8
Construction output and employment in construction, 2006–2009¹

Percentage change quarter on quarter, constant (2005) prices, seasonally adjusted

Germany

Italy

France

Spain

Note:

¹ The 2009 employment figures are according to NACE rev.2, while the employment figures before 2009 are NACE rev 1.1.

Source: Eurostat

especially in the construction industry, there are significant issues in the recording of migrant workers, as construction employee statistics are based on the LFS (a household survey), rather than on an employer-based survey. The LFS covers all people living in private households, but excludes those living in communal housing. As a disproportionate number of temporary workers are likely to live in the latter type of accommodation, the LFS may be under-reporting the number of migrant workers (Clancy 2008). The number of temporary workers underreported in the LFS is difficult to estimate. Official estimates range from 60,000 to 300,000 (Machin 2008), which is approximately 2 to 8 per cent of the estimated 3.6 million foreign nationals working in the UK.

The implications are that if there were a large outflow of migrant workers the LFS would overstate the growth of employment. Conversely, a large inflow of migrant workers would result in the LFS understating the growth of employment. Although there is no definitive information,

there is emerging evidence to suggest that there has been a considerable outflow of migrant workers recently. ONS migration data (2009b) shows an increased amount of emigration of eastern and central Europeans. In addition, a migration study by the Institute of Public Policy Research (Pollard et al. 2008) suggests that many Polish workers are returning home⁸ and information from Tesco shows that the sales of Polish products were down by 23 per cent in December 2008 compared to the previous year (BBC 2009 in Green 2009). Although A8 nationals (a group of countries⁹ of which Poland is by far the largest) only make up 14 per cent of the estimated 3.6 million foreign workers in the UK they are more likely to be under-recorded in the LFS, as much of the increased immigration in this group over the past years has been 'short-term and circular' (Eade et al. 2006 in Chappell et al. 2008).

We can see indirect evidence of the under-recording of migrant workers when we look at manufacturing, another industry

that has experienced sharp falls in output in the 2008/2009 recession. LFS estimates show that the manufacturing industry has an even larger amount of both A8 as well as other foreign born workers (Clancy 2008), which makes it suitable for comparison. Manufacturing jobs have been in decline for some time, although they have clearly responded to the recent fall in the industry's output (Figure 9).

In contrast to construction employment figures, those from manufacturing are largely sourced from an employer-based survey. In addition, the use of an employer-based survey in manufacturing is particularly effective as this industry, as can be seen in Figure 5, has relatively low levels of self-employment. The manufacturing figures show a larger fall in employment, compared with construction, and this perhaps highlights the shortcomings of using a household survey (the LFS) to estimate employment in an industry with a heavy concentration of migrant workers. This evidence is not conclusive as manufacturing is indeed a very different

Figure 9
Manufacturing output

Quarter on same quarter previous year change, seasonally adjusted, constant (2005) prices.

Source: Index of Production and Workforce Jobs series, ONS

industry. However, it does support the case for using an employer-based survey for employee jobs, especially when there is a high concentration of migrant workers. ONS is moving to an employer-based survey for measuring employee jobs in construction. This is outlined in the **Appendix**.

Growth in the number of small businesses

Construction output is estimated from a sample of VAT registered construction businesses. ONS retrieves information about these businesses from the Inter-Departmental Business Register (IDBR) and then sends out forms to a sample of these businesses. The number of VAT registered construction businesses is approximately 213,000. The Department of Business, Innovation and Skills (BIS) estimates that the construction industry contains approximately 1 million businesses (2009). Although this is an estimate that is based on a combination of data sources (primarily the IDBR and the LFS)¹⁰, it does imply that there are approximately 800,000 small businesses in construction that are not registered for VAT and are thus excluded from ONS's sampling frame. This pool of unrecorded businesses includes approximately 40,000 businesses that are registered on the IDBR, but only for PAYE (a form of registration that has a lower threshold). The remaining 760,000 businesses however, are not registered for either PAYE or VAT, because they are small one-man businesses with no employees that are not required to register themselves. Although there is no record of these businesses, they are included in BIS's yearly estimate. Because the construction

output figures do not include unregistered businesses, while the owners and employees of such businesses are picked up by the LFS, the behaviour of small businesses could contribute to the divergence between output and employment. **Table 4** shows BIS estimates of the number of construction businesses and their estimated turnover versus the number of registrations and registered turnover. The figure in the bottom right corner refers to output rather than turnover, and is therefore considerably smaller as this measures the value of construction work.

The number of construction businesses that are not registered for either VAT or PAYE is relatively high. The difference in turnover however, is not as nearly as large. This difference can be explained by the average size of unregistered businesses, which is likely to be considerably smaller.

Although there is a significant difference between BIS's turnover estimate and registered turnover, this will only contribute to the divergence between output and employment if the unrecorded sector grows faster than the recorded sector. If this should be the case however, jobs growth would increase due to an increase in the number of businesses, while the increase in output due to these businesses would not be picked up.

Unfortunately, the BIS estimate of total number of businesses for 2009 will not be available until September 2010. To infer whether unrecorded output has grown faster than recorded output, we can look at the growth of VAT versus PAYE-registered businesses. **Figure 10** shows the growth rate of all the construction businesses in the IDBR, which includes PAYE registered businesses in addition to VAT registered businesses. It also shows the growth rate of VAT registered construction businesses on the IDBR, excluding businesses that are only registered for PAYE. The latter measure conforms approximately to the number of businesses on which the output measure is based, the main difference being that VAT registrations include businesses in Northern Ireland.

As registering for PAYE is compulsory for any business that pays its employees more than £5,000 a year as well as for the purposes of many tax deductions, it is a slightly broader measure than VAT registrations (see Table 4). In contrast, VAT registration is only compulsory above a certain turnover threshold. ONS only samples VAT registered businesses. The difference in growth rate between the two measures (VAT and PAYE) may provide some indication of the difference

Table 4
2008 estimates and registrations of construction businesses

	Total estimated businesses (BIS)	VAT+PAYE registrations (IDBR)	VAT registrations (IDBR)
Nr. of businesses (thousands)	1,010	250	213
Turnover/output ¹ (£ billion)	239	204	110 ¹

Note:

- 1 Output is not directly comparable to turnover. For more information see the section on 'measuring output'.

Source: Small and Medium Sized Enterprise Statistics (BIS), IDBR and Output in the Construction Industry (ONS)

Figure 10
Annual growth rates¹ for two measures of the number² of construction businesses

Notes:

Source: UK Business: Activity, Size and Location. Also known as PA1003

1 Based on the first quarter of each year.

2 SIC 2007 was introduced in the IDBR in 2009. For continuity purposes, the above data uses SIC 2003 for all years. Publicly available IDBR data is taken from a snapshot in March.

in growth rates between recorded and unrecorded businesses. If the number of unrecorded businesses (PAYE registrations) is growing faster than recorded businesses, then there is a good chance that the much larger number of completely unregistered businesses is also growing more rapidly.

Note that there are limitations that apply when PAYE registrations are used as a proxy for small businesses. For instance, a growth in PAYE registrations can also occur without small businesses growing. Specifically, ONS has identified a recent trend towards incorporation (see ONS 2007 Annex B), which may have increased PAYE registrations. This is because the owner of a limited company can also be an employee of the same firm at the same time¹¹. Taking the data limitations of estimating unrecorded businesses into account, the graph does show a clear trend. From 2004 to 2008 the broader measure of construction businesses (VAT + PAYE registrations) was growing faster than VAT registered businesses. This build up in the number of small businesses prior to a recession does not seem surprising. As the demand for construction, led by the booming housing market, reaches its peak just before the onset of a recession, it becomes increasingly attractive to set up a business to profit from strong demand and buoyant prices. In 2009 however, as the recession sets in, both indicators seem to be converging, which indicates that small construction entrepreneurs are struggling nearly as much as the larger firms.

It is therefore likely that some under-recording of the growth in the number of businesses, and therefore output growth may have occurred in the past. However, using the growth of PAYE registered businesses as a proxy for the growth of unrecorded businesses is not sufficiently

accurate to say anything about the magnitude of possible under-recording of growth. Furthermore, the fact that the difference between the two growth measures diminishes dramatically in 2009 suggests that the current divergence, which emerged in the third quarter of 2008 and reached its peak in the first quarter of 2009, may only to a limited degree be attributable to the under-recording of the growth of small businesses.

There are currently plans to broaden the number of businesses whose output is recorded by making use of PAYE as well as VAT registrations in the ONS sampling universe. This will increase the coverage by approximately 20 per cent, but will still leave the output of an estimated three-quarters of construction businesses unrecorded. It is unlikely that it will be possible to extend the coverage to these very small businesses in the near future.

Conclusion

This article has noted that a lag between output and employment in the construction sector is not uncommon (a similar divergence also occurred in the 1980s), and it has examined various economic and statistical factors that may have contributed to the recent divergence between output and employment growth in the industry.

The UK construction industry is characterised by high levels of self-employment and small businesses which adds a degree of flexibility relative to other sectors. The industry is also seasonal and thus highly dependable on migrant workers (which helps the industry expand and reduce employment quickly when required), and existing statistical methods are unlikely to fully capture this section of the labour force. These factors make the

employment response harder to predict, and may contribute to the relatively mild adjustment in construction employment.

On the output side, ONS statistical methods used in the measurement of construction output do not pick up the output of very small businesses. Normally this can be assumed not to have a significant impact on output growth, as their growth rate tracks that of larger businesses. Given the high concentration of small businesses and evidence that suggests a growth in these businesses (which are largely unrecorded), it is possible that this may have contributed to the initial divergence between output and employment. Evidence of this is not conclusive at this stage, nor can we infer directly what happens to output from unrecorded firms when demand falls. It is therefore possible that there may be a bias in the construction output measure which relates to the cycle, but we do not know enough to be sure of its magnitude or direction.

Problems in estimating output and employment in an industry with the complexities of construction will always remain difficult. It is important to recognise that these are estimates and therefore will always include a margin of error. However, ONS's methods are continuously being reviewed and the appendix includes some of the proposed improvements to the measurement of migrant workers, construction output, and employment.

Notes

1. The EU-15 consists of Belgium, Denmark, Germany, Greece, Spain, France, Ireland, Italy, Luxembourg, The Netherlands, Austria, Portugal, Finland, Sweden and The United Kingdom.
2. In 2000 the UK construction industry had the largest rate of self-employment in the EU. However, with the accession of Slovakia and The Czech Republic as part of the 2004 expansion of the EU, these countries respectively now hold the title of highest and second-highest proportion of self-employed workers in their respective construction industries (European Labour Force Survey).
3. Large businesses are always part of the sample, while a proportion of smaller businesses are sampled. The sampling ratio of smaller businesses depends on the employment size-band of the company in question. A higher proportion of the higher size-bands are sampled than those in the lower size-bands.
4. Construction output is measured

in Great Britain (GB) only (that is excluding Northern Ireland (NI)), while employment is measured for the whole of the UK. However, NI jobs and output make up approximately 3 per cent of total figures for construction (NI devolved administration). In addition, construction jobs in NI have been dropping faster compared to GB, implying that the buoyancy of employment figures discussed in this article can not be attributed to the inclusion of NI jobs.

5. WFJ is not equal to the number of people in employment, as WFJ is a measure of jobs, not people. In other words, it is possible to have more jobs than the number of people in employment, because some people might have more than one job.
6. Long-term trends in employee jobs are based partly on the employer-based ABI1, as the LFS is benchmarked against this survey regularly. In the short term however, employee jobs are based solely on the LFS. The latest benchmark currently dates from the third quarter of 2007.
7. False self-employment is seen as self-employment with characteristics that are not different from employee jobs. For specifics on the Government's view of false self-employment and how this has been dealt with in the past, see: HM Treasury and HMRC 2009.
8. Polish citizens are the third largest immigrant group arriving in the UK in 2008 after British and Indian citizens (ONS, 2009a).
9. The accession 8 (A8), is a group of 8 countries that acceded to the EU in 2004. The A8 includes: Estonia, Latvia, Lithuania, Poland, Czech Republic, Slovakia, Hungary and Slovenia.
10. For more information on the methodology of BIS, see <http://stats.berr.gov.uk/ed/sme/>
11. For more information on pay and financing under different ownership structures see chapters 3 and 4 of HM Treasury (2004).

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CONTACT

✉ elmr@ons.gov.uk

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APPENDIX

Changes to construction employment and output surveys and publications

Employment

On 1 March 2008, the Office for National Statistics took over responsibility for the collection and publication of construction statistics from BERR (now BIS). ONS has continued to produce and publish most of the series using the existing BERR/BIS methodology, but new systems and methods are being developed in line with ONS's standard practices. Although the focus of the development has been on the output statistics, which will be published on the new basis from July 2010, the redeveloped survey will also collect employment data on a quarterly basis. Once the redeveloped survey has bedded-in, ONS will investigate using this employer survey as the measure of construction employee jobs in place of the LFS series that currently feeds Workforce Jobs. This would bring construction jobs in-line with the measurement of other industries. For more information contact Nick Barford (01633 456783).

Output

There will be changes made to the current construction publications 'Output in the Construction Industry' and 'New Orders in the Construction Industry' in the near future. These will mainly include releasing the current quarterly output publication on a monthly basis and the current new orders publication on a quarterly basis. For more information see 'Response to public consultation on proposed changes to construction statistics publications'. Available at: www.ons.gov.uk/about/consultations/consultation-on-construction-statistics/response-to-public-consultation-on-proposed-changes-to-construction-statistics-publications.pdf

Migrant workers

Improvements in the measurement of migrant workers are being undertaken through the Migration Statistics Improvement Programme (MSIP). For more information see: www.ons.gov.uk/about-statistics/methodology-and-quality/imps/index.html