SOUTH WEST OBSERVATORY

HOMEWORKING & THE SOUTH WEST ECONOMY

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BUSINESS AND ECONOMY

SUMMARY

- Around 350,000 South West residents were homeworkers during spring 2006, or 14 per cent of all residents in employment at that time. There were around 28,000 more homeworkers in the region in 2006 than 5 years previously, and 34,000 more home-based employee workers.
- Most homeworkers are based at home but actually work at a variety of different locations. This group has also been he primary source of growth in homeworking over recent years. Only a minority of homeworkers work from home itself.
- The South West has the 2nd highest proportion of homeworkers among the UK regions, behind the South East.
- High levels of homeworking in the region are partly due to the high rate of self-employment, since homeworking is particularly common among the self-employed. More than 60 per cent of South West self-employed workers work from home or use their home as their main base, and the self-employed account for around 60 per cent of all homeworkers.
- Men are more likely to work from home than woman, although this primarily reflects the much higher rate of self-employment among male workers. Home based working by women has been growing significantly faster than that by men during recent years.
- Skilled trades occupations make up around one third of homeworkers in the South West – a similar proportion to that for the UK as a whole. Homeworking is also, however, prevalent among managers and senior officials, professionals and associate professional and technical occupations. A relatively high proportion of women in personal service occupations also work from home. Homeworking is more common among older age groups. This partly reflects higher self-employment rates among older residents, but also higher homeworking rates among both self-employed and employee older workers.
- A number of benefits have been proposed for homeworking: including in particular higher rates of economic activity among groups for which conventional work is difficult or unattractive; increased worker productivity; reduced business costs; and reduced 'external' costs (pollution and congestion) associated with commuting to work. For individual regions and sub-regions, the ability to work from home may also spur increased in-migration (and/or reduced out-migration), as footloose workers seek to benefit from more attractive residential locations.
- Detailed evidence on these effects is, however, sparse. It is the case that homeworking is particularly prevalent amongst groups for which economic activity is generally low (older people, women with young children, people with disabilities or poor health). There is also some evidence that homeworking improves worker morale, and there is a statistical link between homeworking and pay.
- Under plausible assumptions, the macroeconomic implications of continued growth in homeworking are fairly modest at the regional level, although there may be more significant implications at a more local level. Our analysis suggests that further growth in homeworking at rates similar to those seen during the last 5 years, would increase the rate of growth of total employment in the region by around 0.1 points, and marginally raise the rate of productivity growth (by around 0.02 points).

INTRODUCTION

Advances in information and telecommunications techologies (ICT) over recent years have greatly enhanced the flexibility of working for many people. One important aspect of this has that workers are increasingly able to work at locations remote from colleagues and customers. This bulletin examines homeworking within the South West of England, and discusses the possible economic implications of increasing homeworking. It draws on an data on homeworking derived from the ONS Labour Force Survey, supplemented by analyses using SWBEM's economic modelling resources.

DEFINITIONS AND DATA

The principal source of information on homeworking within the UK is the Labour Force Survey (LFS). The LFS asks employed respondents (whether employees, self-employed or unpaid family members), whether they worked 'mainly':

- In their own home;
- In the same grounds or buildings as their home;
- In different places using their home as a base; or
- Somewhere entirely separate from home.

The first three of these categories comprise the LFS definition of 'homeworking'. The LFS also asks those respondents identified as homeworkers whether they use both a telephone and a computer to carry out their work ('home-based teleworking'); and whether they would be able to work from home without these tools (those who could not do so are termed 'TC teleworkers'). The LFS does not identify groups who work from remote locations other than those listed above (e.g. neighbourhood centres; community telecentres; trains and other forms of transport; etc.). Nor does the LFS properly account for occasional homeworkers. Although it does ask respondents whether they worked from home at some time during the reference week, this data is generally not believed to provide a reliable measure of occasional homeworking.

The distinction between homeworkers and teleworkers appears to be becoming less important over time, as the number of homeworkers who do not make use of telephone and computers has declined. In part this reflects the adoption of ICT by groups (such as skilled trades) who previously worked from home without those tools. Indeed, it may well be that these groups increasingly see these tools as essential to their ability to work from home (so becoming TC teleworkers). This bulletin focuses on homeworking as a whole, and ignores the distinction between homeworkers and (home-based) teleworkers.

Table 1: Number and proportion of workers who are homeworkers

	South West			UK		
	Works mainly in own home	Works in different places using home as a base	Total Homeworkers	Works mainly in own home	Works in different places using home as a base	Total Homeworkers
Number						
2001	113,300	205,800	319,100	893,800	1,899,800	2,793,600
2002	102,000	235,300	337,300	914,000	2,052,300	2,966,300
2003	102,600	234,000	336,600	941,300	2,193,400	3,134,700
2004	111,000	220,700	331,700	986,200	2,227,200	3,213,400
2005	118,900	240,900	359,700	987,400	2,306,200	3,293,600
2006	106,800	240,100	346,900	988,000	2,414,100	3,402,000
Homeworkers as % of all workers by category						
2001	5	9	14	3	7	10
2002	4	10	14	3	8	11
2003	4	10	14	3	8	11
2004	5	9	14	4	8	12
2005	5	10	15	4	8	12
2006	4	10	14	4	9	12

Source: ONS Labour Force Survey, Spring Quarter

The LFS identified just under 350,000 South West residents as homeworkers during spring 2006, around 14 per cent of the total resident workforce at that time (Table 1). This compared with 12 per cent of all workers for the UK as a whole. The number of homeworkers in the South West is estimated to have increased by almost 28,000 since 2001 – an annual growth rate of 1.7 per cent, significantly slower than the growth rate for homeworking in the UK over this period (4 per cent). The majority (69 per cent) of South West homeworkers work in different places using their home as a base, rather than working mainly from home itself. This category has also been responsible for all of the growth in homeworking within the South West since 2001, having grown by around 34,000 over this period, an average annual growth rate of 3.1 per cent. Growth in workers working in different locations using home as a base has also been the primary source of growth in total homeworking within the UK as a whole. The South West has the 2nd highest rate of homeworking among the UK regions, after the South East, although homeworking in the South West has been growing relatively slowly during the recent past (largely due to declining self-employment, where homeworking is most prevalent).

Homeworkers in the South West are predominantly male and self-employed, a pattern also seen in the UK as a whole (Table 2, below). Men made up around 65 per cent of all homeworkers in the South West during spring 2006, and 68 per cent of those nationally. Around 60 per cent of South West homeworkers at this time were self-employed, compared to 62 per cent nationally. The growth rate of homeworking among women in the South West, however, exceeded that for men between 2001 and 2006 (2.3 per cent a year for women compared to 1.3 per cent for men). The rate of growth in homeworking by men in the UK as a whole exceeded that for women over this period.

Table 2: Homeworking by Sex & Employment Status

	South West						UK					
	Male		Female		ALL		Male		Female		ALL	
	Employee	Self-Employed	Employee	Self-Employed	Employee	Self-Employed	Employee	Self-Employed	Employee	Self-Employed	Employee	Self-Employed
Number												
2001	65,900	145,900	42,000	65,400	107,900	211,200	622,900	1,301,300	407,300	517,800	1,030,200	1,819,100
2002	71,200	155,500	42,700	67,900	113,900	223,400	669,600	1,350,500	405,900	540,400	1,075,400	1,890,900
2003	61,900	157,400	46,100	71,200	108,000	228,600	674,600	1,455,600	423,100	581,300	1,097,700	2,037,000
2004	61,200	166,300	41,600	62,600	102,800	228,900	704,900	1,488,700	435,100	584,800	1,140,000	2,073,400
2005	81,100	159,100	50,100	69,400	131,200	228,500	728,300	1,536,300	436,100	592,900	1,164,400	2,129,200
2006	86,300	140,000	53,500	67,100	139,800	207,100	799,900	1,517,600	463,100	621,500	1,263,000	2,139,100
Homeworkers as % of all workers by category												
2001	6	60	4	63	5	61	5	54	3	59	4	56
2002	7	64	4	67	6	65	5	56	3	61	4	58
2003	6	64	5	66	5	65	5	58	4	61	5	59
2004	6	62	4	63	5	62	6	57	4	61	5	58
2005	8	64	5	67	6	65	6	59	4	62	5	60
2006	8	61	5	65	7	62	6	58	4	62	5	59

Source: ONS Labour Force Survey, Spring Quarter

Table 3: Homeworking by Sex & Part-time/Full-time

	South West						UK					
	Male		Female		ALL		Male		Female		ALL	
	Part-time	Full-time	Part-time	Full-time	Part-time	Full-time	Part-time	Full-time	Part-time	Full-time	Part-time	Full-time
Number												
2001	34,300	177,500	67,000	40,400	101,300	217,900	237,300	1,651,700	534,300	392,500	771,500	2,044,200
2002	29,500	197,200	67,500	43,100	97,000	240,300	277,900	1,742,100	532,500	413,800	810,300	2,156,000
2003	36,400	183,000	71,000	46,200	107,400	229,200	323,700	1,806,500	571,500	433,000	895,100	2,239,500
2004	44,300	183,200	62,600	41,600	106,900	224,800	318,500	1,875,000	555,100	464,700	873,600	2,339,700
2005	39,500	200,800	71,200	48,300	110,700	249,100	326,000	1,938,500	548,000	481,000	874,100	2,419,500
2006	34,100	192,300	71,100	49,500	105,100	241,700	319,900	1,997,500	607,900	476,800	927,800	2,474,300
Homeworkers as % of all workers by category												
2001	25	16	12	8	15	13	18	12	10	6	11	10
2002	22	18	12	8	14	14	20	13	10	6	12	11
2003	22	17	13	8	15	14	21	14	10	6	13	11
2004	26	17	11	7	15	14	20	14	10	6	12	11
2005	24	18	12	8	15	15	21	15	10	6	12	12
2006	21	17	13	8	15	14	20	15	11	6	13	12
Part-time & Full-time shares in total homeworking												
2001	16	84	21	38	32	68	13	87	58	42	27	73
2002	13	87	20	39	29	71	14	86	56	44	27	73
2003	17	83	21	39	32	68	15	85	57	43	29	71
2004	19	81	19	40	32	68	15	85	54	46	27	73
2005	16	84	20	40	31	69	14	86	53	47	27	73
2006	15	85	21	41	30	70	14	86	56	44	27	73

Source: ONS Labour Force Survey, Spring Quarter

The much higher rates of homeworking by men, both regionally and nationally, appears to be almost entirely due to the higher prevalence of self-employment among male workers, since very similar proportions of men and women employees and self-employed workers work from home. Indeed, in the South West a slightly higher proportion of self-employed women are home based than is the case for men (65 per cent compared to 61 per cent during spring 2006). Although it currently makes up only a relatively small proportion of total homeworking, home-based working by employees has been increasing more rapidly than home-based self-employment over recent years. Employee homeworking in the South West increased at an average annual rate of around 5.4 per cent between 2001 and 2006, while self-employment homeworking declined marginally over this period. The rate of growth of employee homeworking was very similar between men and women. The share of employee homeworking in total South West homeworking increased from around 34 per cent to 40 per cent between 2001 and 2006. Home-based working by employees also become more prevalent nationally over this period.

Around 70 per cent of home-based workers in the South West during spring 2006 worked full-time. This is a similar proportion to that for the UK as a whole, and marginally less than the share of part-time workers in the total employed resident population of the South West (Table 3). Male homeworkers are slightly more likely to work part time than are male workers generally, while part-time male workers in the South West are substantially more likely to work from home than are full-time male workers. Similar patterns are also evident for women, and for the UK as a whole.

Table 4: Homeworking by Sex & Occupation, Spring 2006

	South West			UK		
	Male	Female	ALL	Male	Female	ALL
Thousands						
1 Managers and Senior Officials	44,200	21,000	65,100	409,700	175,500	585,200
2 Professional occupations	25,300	12,200	37,500	281,500	122,300	403,700
3 Associate Professional and Technical	31,000	23,800	54,800	333,200	217,300	550,400
4 Administrative and Secretarial	4,400	19,300	23,700	32,000	185,100	217,000
5 Skilled Trades Occupations	87,400	8,000	95,500	866,000	50,800	916,800
6 Personal Service Occupations	2,100	22,200	24,400	25,300	201,800	227,100
7 Sales and Customer Service Occs	3,900	3,700	7,600	44,900	46,000	90,900
8 Process Plant and Machine Ops	14,800	400	15,200	186,800	19,600	206,400
9 Elementary Occupations	13,200	10,000	23,200	138,200	66,300	204,400
Homeworkers as % of all workers by occupation						
1 Managers and Senior Officials	17	17	17	15	12	14
2 Professional occupations	14	9	12	14	8	11
3 Associate Professional and Technical	19	14	16	17	11	14
4 Administrative and Secretarial	7	8	8	4	7	6
5 Skilled Trades Occupations	33	34	33	31	21	30
6 Personal Service Occupations	7	13	12	7	11	10
7 Sales and Customer Service Occs	8	3	4	7	3	4
8 Process Plant and Machine Ops	10	3	9	10	7	10
9 Elementary Occupations	9	7	8	8	5	6

Source: ONS Labour Force Survey

As might be expected, there are substantial differences in rates of homeworking for both men and women across occupations (Table 4). In the South West, around a third of both male and female workers in 'skilled trades occupations' were homeworkers during Spring 2006. However, the markedly different contributions of this occupational group to total employment of men and women, means that homeworking by skilled trades is far more important to homeworking by men than is the case for women. Skilled trades comprised almost 40 per cent of male homeworkers in the South West, but only around 7 per cent of female homeworkers. At the other extreme, only around

4 per cent of workers in 'sales and customer service' occupations worked from home, although the rate of homeworking in this group was much higher for men than for women. 'Personal service occupations' made up around 18 per cent of total female homeworking in the South West during spring 2006, but only 1 per cent of total male homeworking in the region at this time. The occupational pattern of home-based working in the South West is fairly similar to that for the UK as a whole.

Table 5: Homeworking by Age, 2001 & 2006

	South West		UK	
	2001	2006	2001	2006
Thousands				
16-24	10,700	18,100	116,100	177,700
25-34	42,700	51,500	498,100	535,600
35-44	87,700	81,600	774,300	924,000
45-54	87,300	91,600	764,000	870,500
55-64	74,000	85,300	547,700	711,000
65+	17,100	19,200	120,500	190,800
Homeworkers as % of all workers by age				
16-24	3	6	3	5
25-34	8	11	8	9
35-44	15	14	11	13
45-54	16	17	13	14
55-64	24	21	17	18
65+	39	29	30	32

Source: ONS Labour Force Survey, Spring Quarter

In both the South West and the UK as a whole, the prevalence of homeworking increases with increasing age. Only around 6 per cent of South West workers aged between 16 and 24 years old were identified as homeworkers during spring 2006 (as compared to 5 per cent nationally). Among older workers, however, homeworking makes up a substantial proportion of overall employment – the LFS estimates that around 30 per cent of workers aged 65 and over in the South West worked from home, a similar proportion to that for the UK as a whole. Workers aged 55 and over made up almost 30 per cent of homeworkers in the South West, compared to less than 20 per cent of total employment. This supports the International Labour Organisation's (ILO) case that homeworking may promote the inclusion of older age groups within the labour market, by allowing older workers to continue working when commuting to an office or other place of business becomes too difficult or unattractive.

For the UK as a whole, homeworking is increasing most rapidly amongst the youngest and the oldest age groups. The South West has also seen rapid growth in homeworking among younger workers since 2001 (albeit from a low base), although homeworking among by older South West workers has grown only marginally in total (and the proportion of older workers working from home has actually declined), comparing spring 2006 with the same period of 2001. We need, however, to be cautious about the precision of the estimates presented in Table 5, particularly for regional data and for the older age group where sample sizes are particularly small. The estimated rate of homeworking among workers aged 65 and over in the South West fluctuated between 35 and 40 per cent over the period since 2001, and it is likely that the estimate for spring 2006 is an underestimate of the true propensity to homeworking for this group.

The age profile of homeworkers is linked to that for self-employment, since self-employment rates also increase steeply with age, and self-employed people are more likely to be home based than are employees. The LFS data will not support a detailed

analysis of this issue at the regional level, although the UK data show that rates of homeworking among older workers are higher than those for the general population among both employees and the self-employed. This suggests that high rates of homeworking among older workers reflect both relatively high rates of self-employment for this group, and relatively high propensities to homeworking among both employee and self-employed older workers.

ECONOMIC IMPLICATIONS OF INCREASED HOMEWORKING

The literature has suggested a number of benefits which may result from increased rates of homeworking. Higher levels of homeworking may be associated with increased economic activity rates among groups who would otherwise find work either difficult to access or unattractive (e.g. women with children, older people and people with disabilities). The ability to work from their own homes may encourage some people in these groups, and in the general population, to work who would otherwise have remained economically inactive. The analysis presented above supports the link between homeworking and age. There is also evidence from the LFS of a positive relationship between caring from young children and homeworking among women. Homeworking rates are also marginally higher amongst workers with long term health problems.

Taken together, this evidence would suggest that the increasing availability of homeworking leads to an increase in (or an increase in the growth rate of) the total supply of labour within the UK economy. Moreover, the more rapid growth of employee homeworking and the concentration of home-based working among higher occupation groups may suggest that any increase in labour supply associated with increased homeworking would be biased towards more highly qualified, and more productive, workers. An analysis of the LFS data on qualifications shows that while overall homeworking rates are broadly constant across qualifications groups, employee homeworking is somewhat more concentrated amongst those with higher qualifications.

Related to this, the possibility of homeworking may result in increased average hours worked among people working from home, as compared with the hours that they would have worked had they been based in a more conventional business location. If so, this would also contribute to an increase in the overall supply of labour within the UK economy, measured in terms of total hours worked. Indeed, it has been argued that this may not be entirely a ‘good thing’, if homeworking blurrs the division between time spent working and non-working, and may make it more difficult for home-based workers to find a satisfactory ‘work-life balance’. On the other hand, such workers may value the additional flexibility associated with home-based work over any increase in total hours worked.

There has been some debate over whether homeworking leads to higher levels of worker productivity compared with more conventional working practices. The Department of Trade and Industry (DTI) has supported homeworking at least partly on the grounds that it provides workers, particularly those with caring responsibilities, with greater flexibility with which to achieve a more satisfactory work-life balance, which in turn may result in improved worker satisfaction, higher levels of motivation and energy, and higher productivity. To the extent that it reduces stresses associated with balancing hectic business and domestic lives, and the specific stresses of commuting, homeworking may also have benefits for worker health – with a corresponding reduction in days lost through illness, another source of additional labour supply. Homeworking will also generally result in a reduction in staff accommodation costs (although there will often be offsetting costs associated with providing necessary ICT equipment and networks to home-based workers), reducing overall production costs

and improving business competitiveness in national and international markets. The ability to work from home may provide a means for organisations to retain experienced staff, and so avoid the loss or attrition of valuable job-specific skills. On the other hand, home working may make it more difficult for organisations to ensure adequate supervision of remote staff, and to maintain effective information flows – with possibility detrimental implications for knowledge transfer within the organisation, innovation and productivity. It might also be possible that increased homeworking leads to a greater psychological 'separation' between the individual and their employing organisation, with a resulting reduction in organisational loyalty and worker effort.

A number of studies have shown positive between the ability to work for home, improved worker morale and reductions in sickness absence and staff turnover. Specific evidence on the other proposed links between homeworking and productivity is, however, sparse and inconclusive. Data on wage from the LFS suggests that homeworkers earn more than more conventionally-located workers – although this may simply reflect the different occupational structures of the two groups.

Appendix 1 shows the results of an econometric analysis of the relationship between pay (gross hourly wage) and homeworking based on LFS data, allowing for differences gender, experience (years since completed full-time education), part-time vs full-time working and educational qualifications. This suggest that, controlling for other factors which influence individual wages, homeworkers earn around 8 per cent more than non-homeworkers. This analysis relates to employees only. Clearly, we need to be cautious of interpreting this relationship as causal – it may be that highly productive (and highly paid) workers are more likely to choose to work from home. On the other hand, if the added autonomy (and other benefits) of homeworking are 'normal' goods, then individuals may be willing to accept *lower* pay if they are permitted to work from home. In that case, this analysis would tend to underestimate the benefits from homeworking. In addition, homeworking shifts the balance of employment and travel costs between employers and employees, which may raise or lower the financial returns to employees for any given wage. Finally, although we would expect higher pay to be associated with higher individual productivity, it is not likely that these variables are related in any simple, direct way, so that there are dangers associated with interpreting higher pay amongst homeworkers as evidence of the productivity benefits from homeworking.

The above suggests that increased homeworking may have direct economic benefits in terms of increased labour supply and increased labour productivity. In addition, the increased flexibility and autonomy and possible reductions in stress associated with home-based working may directly improve workers well-being, in terms of improved physical and psychological well-being. Associated with this, from the employee's point of view, homeworking may result in a reduction in travel costs (both financial and in terms of time spent commuting), which also provides a genuine increase in welfare, although not one which is adequately reflected within standard economic statistics. It is, however, worth recalling that most of the growth in 'homeworking' in recent years has taken the form of workers working at different locations using their home as a base: which may or may not reduce the overall costs of travel (although for employee homeworkers, it may well mean an increasing share of total travel costs are borne by employers).

The importance of 'working in different places with home as a base' to overall homeworking (and the growth of homeworking) within the UK should also be noted when considering other economic and environmental benefits frequently proposed for homeworking – reduced commuting flows resulting in reduced pollution emissions (in particular CO_2 emissions associated with global climate change) and traffic congestion.

To the extent that increased homeworking is responsible for reduced congestion on roads and public transport, this would mitigate the 'external' costs of congestion – i,e. the increased travel times and costs, and the increased uncertainty over journey times for business and individual travellers. We would also expect lower car-based commuting flows to provide some benefit in terms of reduced road casualties.

Increased homeworking may also have additional benefits for particular regions like the South West. The region's attractive landscape, towns and mild climate may make it a favoured location for workers seeking to exchange conventional, city-based employment for home-based work in a more appealing location. This could lead to increased in-migration of (often highly skilled) workers in to the region, with particular benefits for rural and coastal parts, often regarded as particularly attractive locations for quality-of-life relocation. We have no direct evidence on the strength of this effect. As noted above, rates of homeworking are higher in the South West than in most other parts of the UK. Evidence from the LFS also suggests that homeworking is particularly prevalent in the more rural parts of the region (the highest rates are in the NUTS2 areas Dorset & Somerset; Cornwall & the Isles of Scilly; and Devon), although these data are unreliable due to small sample sizes, and in any case may simply reflect higher rates of self-employment (for example, associated with agriculture and tourism) in those areas and in the region as a whole.

PROSPECTS FOR HOMEWORKING IN THE SOUTH WEST

The above analysis notes some important patterns and trends in homeworking by South West residents:

- The overall level of homeworking has been growing at an average annual rate of around 1.7 per cent since 2001, with growth among women at around 2.3 per cent a year.
- This is significantly above the rate of growth of total employment (0.7 per cent a year since 2001 for all workers), so that the proportion of workers who work mainly from home (or use their home as a base) has also been rising steadily, by around 0.9 per cent a year).
- There is no obvious reason to expect that the rate of growth of homeworking will decline in the near future. Growth of homeworking is supported by improvements in ICT, increased pressures on commuting from increased travelling costs and congestion, demographic ageing (since older workers are more likely to work from home), changes the employment structure towards more 'knowledge-intensive' occupations with higher propensities towards homeworking and other flexible forms of work; and the increased emphasis on quality-of-life issues.

These arguments lead us to expect that the prevalence of homeworking will continue to grow, at least over the medium term.

There is also some, albeit somewhat indirect, evidence to suggest that homeworking contributes to increased labour market participation (particularly among older workers, workers with health problems and/or disabilities; and women with children); to longer working hours; and to higher productivity. The next section considers the possible implications of these effects for the South West economy.

MODELLING THE EFFECTS OF HOMEWORKING ON THE SOUTH WEST ECONOMY

Detailed evidence on key elements of the economic impact of homeworking is, at best, suggestive. We argued above that there was some support for the proposals that homeworking expanded labour supply and raised labour productivity. There is,

however, little specific evidence on the scale of these effects. Similarly, although the argument that the availability of homeworking increases the attractiveness of the South West as a residential location, attracting knowledge workers to relocate from the larger UK cities feels 'right', we are not aware of any detailed evidence to support this, let alone to identify the quantitative size of these effects.

Our analysis of the economic impacts of homeworking is, therefore, rather speculative. We present the following as an exploratory exercise, which may indicate the mechanisms involved in determining the macroeconomic implications of homeworking for the South West region, rather than a forecast of the actual future effects from increased homeworking in the region.

The basic assumptions and results of the analysis are as follows:

1. The proportion of South West workers who work from their own home, or from different places using their home as a base, increases at 0.9 per cent a year during the next 10 years. This implies that the proportion of South West workers working from home rises from 14.3 per cent in 2006 to 15.7 per cent by 2016.
2. We also consider a 'high growth' scenario, in which homeworking increases at twice the benchmark rate (1.8 per cent a year) – still below the growth rate in the UK since 2001 of 2.9 per cent a year, and a 'low growth' scenario in which homeworking increases at half of the benchmark rate (0.45 per cent a year). Under the 'high growth' scenario, homeworkers make up 17.3 per cent of the South West workforce by 2016; under the 'low growth' scenario homeworkers make up 15.0 per cent of the region's workers at that time.
3. This, combined with growth of total employment at the rates projected within the long-run ('growth trends') SWBEM projections (mid scenario of employment growth at 0.4 per cent a year; 0.7 per cent and 0.3 per cent growth in the 'high' and 'low' scenarios respectively) implies that the numbers of home-based workers in the region rises from around 347,000 in 2006 to between 375,000 and 449,000 in 2016, with a benchmark scenario in which the number of homeworkers reaches 398,000 by this time.
4. The results in (3) do not explicitly allow for any increase in total employment due to the increased participation associated with wider opportunities for homeworking. However, the growth-trend employment projections are themselves based on recent growth in total employment which includes growth in homeworking. The benchmark growth trend employment projection assumes that the South West employment rate increases at around 0.3 per cent a year, due largely to increasing labour market participation rates. Under the assumptions outlined above, growth in homeworking accounts for between 38 per cent and 58 per cent of the overall growth in South West employment over the next decade.
5. If a substantial proportion of additional homeworkers would have been economically inactive were they not able to work from home, and assuming that this effect is *not* fully captured within the growth trends projections, then growth of homeworking would provide a significant boost to growth of total employment. To illustrate, if one third of additional homeworkers would otherwise have been inactive (and assuming this is not captured in the growth trend for employment), then this raises employment in the region by around 16,900 by 2016, and the total employment growth rate rises by around 0.1 points per year: i.e. from 0.4 to 0.5 per cent a year under the benchmark case.
6. It is also possible that the increasing availability of homeworking might stimulate increased migration into the South West. It is, however, questionable whether

this is likely to have any significant effect on overall population growth at the regional level. In addition, if this effect has been active for some time then it should already be captured within the population assumptions for the growth trend analysis (which are based on the ONS sub-national population projections, which in turn incorporate migration assumptions based on recent trends). For this reason, and given the lack of any quantitative evidence on the magnitude of this effect, we do not allow for population growth due to homeworking-associated in-migration, other than that implicitly incorporated within the benchmark case.

7. The wage analysis suggested that homeworking directly increases employee homeworkers' wages by 7.7 per cent compared to similarly-qualified 'conventional' employees. There are, however, substantial difficulties in interpreting this as indicating a similar increase in worker productivity. Nevertheless, in the absence of other evidence, our benchmark case assumes that employee homeworkers are 7.7 per cent more productive than non-homeworkers. Assuming that the productivity benefit from homeworking continues over time, growth of homeworking has only a negligible impact on overall productivity growth in the South West. We estimate that the estimated productivity benefits to employees (and their firms) from homeworking adds only around 0.02 points to South West's productivity growth rate. (We see no particularly strong reasons for assuming similar productivity benefits among the self-employed). This is because homeworking remains relatively rare, if fast growing, among employees, with only around 8 per cent of employees South West employees working from home during 2006. In addition, the productivity benefits of homeworking, if real, should have influenced regional productivity growth in the recent past, and effect which is already incorporated within the growth trends analysis.

The above does not allow for any of the potential 'external' benefits from homeworking – from reduced accommodation costs among the region's firms, lower transport costs and higher certainty of delivery times due to reduced congestion, etc. It is worth noting that these effects would benefit the competitiveness of South West businesses only to the extent that they were unique to the region (or, at least, unusually large). This would be the case if homeworking in the South West was significantly more prevalent than elsewhere, and/or if any economic efficiency gains were particularly large – e.g. because transport links were unusually congested or important to business competitiveness.

Table 6: Homeworking & Economic Growth in the South West

	Average Annual Growth Rate (%)		
	High	Mid	Low
Benchmark Assumptions (SWBEM Projections)			
GVA per hour	2.4	2.2	2
Average hours	0	-0.1	-0.2
Employment Rate	0.3	0.2	0.1
Population of Working Age	0.4	0.3	0.2
Total Population	0.7	0.6	0.5
GVA	3.1	2.6	2.1
GVA per job	2.4	2.1	1.8
GVA per head	2.7	2.3	1.9
Employment (total)	0.7	0.4	0.3
Employment (hours)	0.7	0.3	0.1
Effects of homeworking			
Growth of homeworkers	2.61	1.37	0.77
Homeworking participation effect (additional to benchmark)	0.07	0.13	0.04

Source: South West Business & Economy Module

Sub-Regional Impacts

The above analysis is for the South West region as a whole. Evidence on homeworking at a sub-regional level is rather patchy due to the relatively small samples sizes for sub-regions within the LFS, making a detailed sub-regional analysis impractical. Nevertheless, the data that do exist suggest higher levels of homeworking is particularly prevalent in the more rural parts of the region (the highest rates are in the NUTS2 areas Dorset & Somerset; Cornwall & the Isles of Scilly; and Devon). The data are, however, rather noisy making it difficult to discern clear trends over time. It is plausible, however, that the benefits from increased homeworking outlined above, may be concentrated in the coastal and rural parts of the region, so that effects which are relatively small at the regional level may be much more significant within some sub-regions. On the other hand, the economic and environmental benefits stemming from reduced commuter traffic would most plausibly be concentrated in the urban areas. In the absence of further evidence, however, quantifying these effects would be an especially speculative endeavour, and is not attempted here.

CONCLUSIONS & POLICY IMPLICATIONS

Homeworking is relatively prevalent in the South West, due in part to the region's high rate of self-employment. Homeworking in general, and particularly among employees, has been increasing steadily over recent years, and it seems likely that this trend will continue, supported by public policy support for flexible practices working. Growth in the prevalence homeworking is likely to contribute to increasing economic activity rates in the South West, particularly among currently 'marginal' groups, and supporting growth in total employment. Increased employee homeworking may also contribute directly to more rapid productivity growth, although this effect, if it exists, is likely to be rather small.

The wider benefits of homeworking in terms of reduced pollution and congestion may significantly contribute to the quality of lives for the region's residents, although we should bear in mind that recent growth in 'homeworking' has actually been concentrated among people who work at a variety of locations using home as a base – which may involve substantial amounts of business related travel. In any case, the recent growth in homeworking has not been sufficient to reduce the overall growth in traffic, suggesting that homeworking will not itself solve the region's transport problems.

APPENDIX 1 – HOMEWORKING & WAGES

A basic econometric analysis of the relationship between homeworking and pay was carried out using individual level data from the Spring 2005 LFS. The dependent variable is the log of the gross hourly wage. The estimating equation is a simple 'earnings function' of the following form:

$$\ln W_i = \beta_1 + \beta_2 HOMEWORK_i + \beta_2 FEMALE_i + \beta_3 \ln EXPER_i + \beta_4 PARTTIME_i + \beta_5 DEGREE_i + \beta_6 ALEVEL_i + \beta_6 GCSE_i + \varepsilon_i$$

HOME is a dummy variable where 0 represents that the individual workers at some location separate from home, and 1 represents that the individual is some sort of homeworker as defined by the LFS. FEMALE, PART, DEGREE, ALEVEL and GCSE are additional variables controlling for whether the individual works part-time or full-time; and whether the individual's highest qualification is a degree of other HE qualification; ALEVELS or GCSEs. mpleted full time education (age less age completed full time education). The benchmark case is, therefore, a male worker with no post-education work experience and who is qualified to below GSCE level. ln EXPER, is the natural log of the number of years since the individual completed full time education. The equation was estimated by OLS and the results are shown in the following table:

DEPENDENT VARIABLE: ln W

	Coefficients	S.E.	t	Sig.
(Constant)	1.595	0.019	84.765	0.000
HOMEWORK	0.077	0.018	4.170	0.000
FEMALE	-0.134	0.009	-15.260	0.000
LN EXPER	0.142	0.005	28.074	0.000
PARTTIME	-0.214	0.010	-21.012	0.000
DEGREE	0.677	0.011	59.674	0.000
ALEVEL	0.284	0.012	23.390	0.000
GCSE	0.167	0.012	13.852	0.000
N	13815			
F	870.314			
Adj. R-Square	0.306			

The coefficient estimates indicate the marginal effect of changes in the relevant variable on individual gross hourly wages. All coefficients are highly significant, and have the expected signs (we would expect wages to be positively associated with experience and educational qualifications, for women workers to earn less than equivalent men; and for part-time workers to earn less than full-time workers). The coefficient on HOMEWORK indicates that homeworkers earn 0.077 per cent more than equivalent individuals who do not work for home.

The Business and Economy Module of the South West Observatory provides a dynamic source of economic and business research and intelligence, with comprehensive data and analysis to support regional development and evidence based decision making. To improve the availability of regional data the Business and Economy Module has developed a set of Regional Accounts which are freely available to all. For further information please visit the Business and Economy Module website (**www.swo.org.uk/bem**).

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