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CentrePiece

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Inside this issue: Giles Radice replies to Alan Budd

The economic cost of a human crisis

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Cover photgraph: *A condom demonstration for women waiting at a health clinic in the Hlabisa District, Kwazulu.* ©Gideon Mendel/Network

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Editor's note

No apologies for the distressing cover story in this issue. The AIDS crisis in Southern Africa has reached epidemic proportions and threatens to inflict massive economic damage on the region. Against this disturbing background, Markus Haacker, until recently a member of the CEP and now with the Research Department of the International Monetary Fund, presents a sober, and sobering, analysis of the economic implications of HIV and AIDS infection in the region. Even if measures to stop the spread of HIV infection are wholly successful, the mortality rate will continue to rise until at least 2010.

Closer to home, and, it has to be said, less dramatic, is our examination of the true nature of regional inequalities in Britain. Gilles Duranton and Vassilis Monastiriotis have looked in detail at the underlying causes of these inequalities and conclude that their cause is not so much regional differences as such but the different composition of the workforce in each region. Their research suggests that far more work needs to be done before regional policy can be constructively revised as now seems necessary.

Anthony Venables reports on his examination of industrial specialisation within the European Union. Such shifts in industrial activity are to be expected as part of the process of economic integration. Perhaps surprisingly, though, the adjustments have been smooth and relatively painless. Thomas Kirchmaier reports on another industrial change in Europe: the growth of demergers. These are more obviously beneficial than mergers and acquisitions, he concludes.

In a new departure, we have two conference reports in this issue. The Centre is, as those readers familiar with its work will know, a hive of activity throughout the year, with major conferences taking place on a regular basis. Richard Freeman reports on the conference on the Internet economy that launched the Centre's new research programme on the Internet. And Leon Feinstein explains the thinking behind the Centre's groundbreaking conference which brought brain scientists, policymakers and social scientists together.

And a follow-up to Alan Budd's call for more transparency and accountability from the Monetary Policy Committee. Giles Radice MP, Chair of the Treasury Select Committee of the House of Commons, responds to some of Alan Budd's comments and I am delighted to welcome him as the first contributor to our letters column.

As CentrePiece enters its sixth year, it is time for me to say goodbye. Sixteen issues is probably enough for one editor, so I'm handing over to a new pair of hands. I offer my successor best wishes for the future stewardship of the magazine. I'd like to thank our many contributors since we launched CentrePiece – with some trepidation I might add – in February 1996. But most of all I should like to thank all our readers without whom we could not have flourished.

Graham Ingham

CentrePiece

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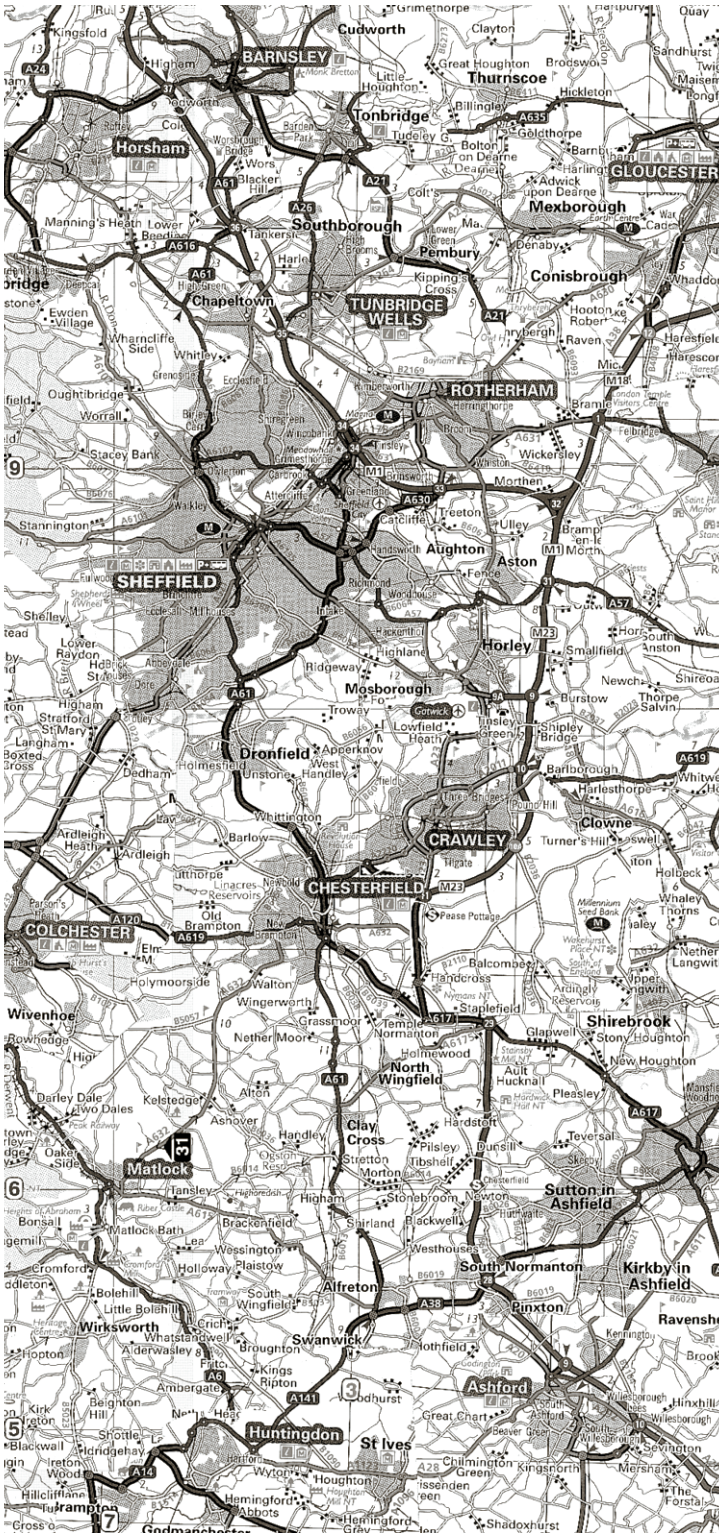


What goes where:

Integration and Industrial Specialisation in the European Union

As the economies of the European Union become more integrated, so they are becoming more specialised. Anthony Venables explains that this is to be expected and follows the long-established pattern seen within the US economy: the American experience, moreover suggests that Europe still has a long way to go.

European integration has brought big increases in trade flows between member states. In 1970, UK exports to the six founding members of the European Union (then known as the European Economic Community) represented just over 3% of GDP; by the mid 1990s that proportion had risen to 8%. This growth in trade comprises two elements. One is *intra*-industry trade, which takes the form of countries importing and exporting similar products as firms from each country penetrate the markets of other member states. *Intra*-industry trade can occur even if countries have identical industrial structures, and its economic benefit derives from the fact that it is pro-competitive, intensifying competition between firms located in different countries. The other element is *inter*-industry trade: economic integration is likely to lead to growing trade between different sectors of the economies of member states. One key result of European integration is that economies within the EU have come to specialize more. This is a process that will continue.

Why countries specialise

This national specialisation can occur for several different reasons. One is the comparative advantage of textbook

economics. Countries differ in their endowments of labour skills and other inputs to production, or in their technological capacities. Trade allows sectors to expand and contract in response to these advantages, the better to match production to each country's supply potential. Comparative advantage can also derive from geography. Proximity to markets might be particularly important for some sectors, in which case these sectors will relocate towards regions with good market access – the centre rather than the periphery of Europe. Agglomeration, or the clustering of economic activity, is also important: it might be that no country or region has any inherent comparative advantage in a sector, but that firms derive advantage from the presence of other firms in the same or related sectors. The advantage can come from knowledge spillovers; sharing a pool of common labour skills; or from forward and backward linkages between supplier and customer firms. Any of these forces will tend to induce firms to cluster together in particular locations, although the initial choice of location might be a matter of historical accident. Integration facilitates this sort of clustering, and it will show up as a process of increasing national (and regional) specialisation.

Specialisation brings with it both benefits and costs. The benefits are that gains from comparative advantage depend on countries actually specialising according to their advantages. Clustering usually brings with it efficiency benefits, as firms can interact more efficiently with neighbouring firms engaged in similar or related activities. But specialisation also increases the vulnerability of countries or regions to economic shocks – for example, the contraction of a particular industry in which a region is highly specialised. The magnitude of this potential problem depends on, amongst other things, the effectiveness of international (or inter-regional) adjustment mechanisms, and might be greater in monetary union, when the scope for adjustment via the exchange rate has been given up.

We show in this article that specialisation has been occurring in the EU and that – on the basis of comparison with the US – the process may have some way further to go. But, so far at least, the process has been gradual, and has not been dramatic enough either to cause major adjustment problems, or significantly to increase the vulnerability of regions to industry-specific shocks.

Who does what?

We are concerned here with the location of activities that are traded within the EU, and, in particular, with manufacturing, which accounts for around two-thirds of the exports of high income countries, and approximately 20% of EU GDP. Within manufacturing, have countries become more or less specialised in particular industries? There is consistent data for 36 manufacturing industries, across 14 EU countries, for the period 1970-97. We have constructed an index of specialisation that compares the share of a particular country's manufacturing in each industry with the share of industries in the rest of the EU. The index takes a value of zero if the country has industrial structure identical to that of the rest of the EU, and is higher the more different is the industrial structure (see Table 1).

Two striking points emerge from Table 1. First, countries became less specialised between 1970-73 and 1980-83: the index fell for ten of the 14 countries. But from the early 1980s onwards, the index registered a steady and substantial increase for all countries except one (The Netherlands), indicating a growing process of specialisation.

Table 1 How different are countries from the rest of the EU?

	70/73	80/83	88/91	94/97
Austria	0.314	**0.275**	0.281	0.348
Belgium	**0.327**	0.353	0.380	0.451
Denmark	0.562	**0.553**	0.585	0.586
Spain	0.441	**0.289**	0.333	0.338
Finland	0.598	**0.510**	0.528	0.592
France	0.204	**0.188**	0.207	0.201
G. Britain	0.231	**0.190**	0.221	0.206
Germany	0.319	**0.309**	0.354	0.370
Greece	**0.531**	0.580	0.661	0.703
Ireland	0.701	**0.623**	0.659	0.779
Italy	**0.351**	0.353	0.357	0.442
Netherlands	**0.508**	0.567	0.547	0.517
Portugal	0.536	**0.478**	0.588	0.566
Sweden	0.424	**0.393**	0.402	0.497
Weighted average	0.326	**0.302**	0.33	0.351

Minimum values for each country in bold

One key result of European integration is that economies within the EU have come to specialise more.

So far, at least, the process has been gradual, and has not been dramatic enough to cause major adjustment problems.

Figure 1 Specialisation indices: Countries grouped by EC entry date

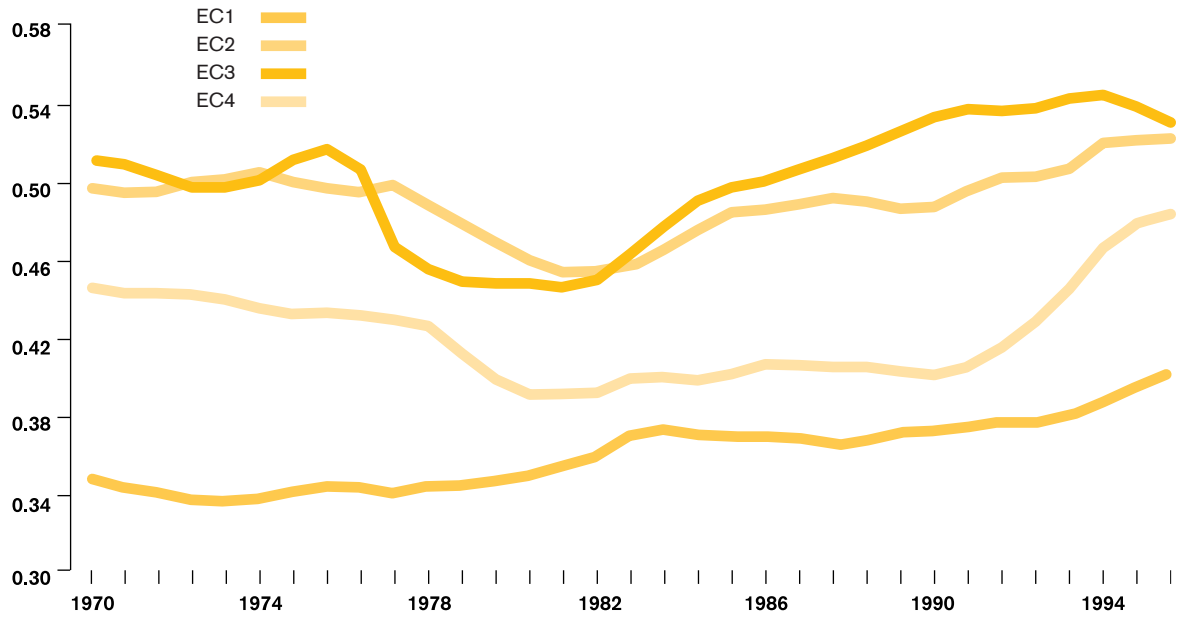


Figure 1 takes this a stage further, by combining the information for countries grouped according to their entry date – so EC1 is the original six, EC2 is Denmark, Ireland and the UK, EC3 is Greece, Spain and Portugal, and EC4 Austria, Finland and Sweden. The main point to note from this figure is the slopes of these curves (rather than their levels). There has been a more or less steady increase in the specialisation of the EC1 group over the entire period. For the other groups the index starts to increase after entry to the EU. This shows that, as theory would suggest, integration in the EU has led to increasing national specialisation.

We can develop this still further, by constructing the index to measure the difference between the industrial structures of any two selected countries. Table 2 shows that the large economies are most like each other – the lowest values of the indices occur within the group France, Germany, UK. However, these same countries are most different from Greece, Portugal, Ireland and Finland. (It also turns out that Greece and Portugal are similar to each other, although very different from Ireland and Finland.)

The UK economy becomes more different from all other countries except France and The Netherlands: France becomes more different from all others except the UK and The Netherlands: and Germany becomes more different

Table 2 How different are countries from each other?

	Aus	Bel	Den	Spa	Fin	Fra	UK	Ger	Gre	Ire	Ita	Net	Por	Swe
France														
1980-83	0.38	0.34	0.57	0.26	0.49	0.00	0.22	0.31	0.57	0.63	0.39	0.51	0.47	0.41
1994-97	0.43	0.44	0.57	0.33	0.62	0.00	0.19	0.35	0.69	0.78	0.51	0.46	0.55	0.51
UK														
1980-83	0.32	0.42	0.56	0.37	0.54	0.22	0.00	0.25	0.61	0.67	0.40	0.53	0.55	0.39
1994-97	0.39	0.48	0.58	0.38	0.58	0.19	0.00	0.36	0.72	0.77	0.47	0.46	0.59	0.51
Germany														
1980-83	0.33	0.43	0.65	0.40	0.66	0.31	0.25	0.00	0.73	0.75	0.43	0.64	0.64	0.42
1994-97	0.46	0.61	0.72	0.43	0.66	0.35	0.36	0.00	0.86	0.82	0.49	0.61	0.74	0.49

The largest changes are, as would be expected, for Ireland and Finland. ...The lowest levels are in Greece and Portugal

from all except The Netherlands. Once again then, this confirms the picture of divergence of industrial structures from the early 1980s onwards.

What sorts of industries are going to which countries, and what underlying factors are driving these changes? We can identify specific characteristics of industries, and ask what countries are attracting or losing industries with those characteristics. For example, industries are classified by the OECD into high, medium and low technology groups, which can be scored two, one, zero. We can compute the average score for each country, and compare these scores across countries and across time. Some of the results are striking. The technology scores are highest for Germany, France, the UK and Sweden, although they decline slightly for all these countries except Sweden. The largest changes are, as would be expected, for Ireland and Finland: these both start low and increase dramatically, measuring the growing share of high technology industries in these countries. The lowest levels are in Greece and Portugal, which start and remain low.

Industries can also be classified by their use of highly-skilled labour. The Netherlands has the highest score on this characteristic, indicating an industrial composition skewed towards skill-intensive sectors. The Netherlands is followed by the UK, Germany, France, Belgium and Sweden, although all these countries are overtaken by Ireland, rising from near the lowest to the second highest from the early '80s to mid '90s.

Spatial concentration

An alternative approach is to group industries according to their initial locational pattern, and then look at how this has changed. Table 3 classifies industries according to the extent to which they are spatially concentrated or dispersed across Europe.

What determines specialisation?

How can we explain these changing patterns of industrial location? Economic reasoning tells us that, for instance, skilled-labour-intensive industries are likely to be located in countries that are abundant in skilled labour. Industries that are intensive users of intermediate goods are likely to locate where they have good access to supply of these goods, and so on. Econometric techniques can be used to see which of these interactions are the most important determinants of the industrial structure of EU countries. The results of this analysis are in Table 4, which lists six pairs of interactions (each between a country characteristic and an industry characteristic) along with an indication of the relative importance of each.

The table shows the changing interaction between factor endowment and economic geography determinants of location. The results indicate the increasing importance of forward linkages and of the availability of skilled labour and researchers in shaping the industrial structure of each country.

Table 3 Industries grouped by levels and changes in concentration

Concentrated industries that have remained concentrated over time; (CC)	**Concentrated industries that have become less concentrated; (CD)**
Motor Vehicles	Beverages
Motorcycles	Tobacco
Aircraft	Office & Computing Machinery
Electrical Apparatus	Radio, TV & Communication
Chemical Products NEC	Professional Instruments
Petroleum & Coal Products	Machinery & Equipment NEC

Dispersed industries that have become more concentrated over time; (DC)	**Dispersed industries that have stayed dispersed; (DD)**
Textiles	Food
Wearing Apparel	Wood Products
Leather & Products	Paper & Products
Furniture	Printing & Publishing
Transport Equipment NEC	Metal Products
	Non-Metallic Minerals NEC
	Shipbuilding

(Residual group of 12 industries omitted.)

The largest changes are, as would be expected, for Ireland and Finland. The lowest levels are in Greece and Portugal.

Measuring up to the American experience

How much further is this process of specialisation likely to go? The obvious place to look is the US, an integrated market that has also experienced major reductions in internal transport costs. Recent US experience has, however, been quite different from that of the EU, as the specialisation of US states has been decreasing. The US has a long time series of data which indicates increasing state specialisation up to the 1940s, followed by a steady decline since.

More important for our purposes is a comparison of the absolute levels of industrial specialisation in the two continents. This comparison is inherently difficult, as the continents have quite different sizes and shapes, and there is no 'correct' way to aggregate US states to mirror the geography of European countries. But our analysis suggests that US industry remains somewhat more spatially concentrated than is the case in Europe.

The car industry

Take the location of the motor vehicle industries in the two continents. We identified the European countries and US states that are the main producers of motor vehicles, and then compared their shares of vehicle production with their shares of manufacturing as a whole. A high share shows these countries or states are highly specialised in motor vehicles.

Table 5 shows that the share of total EU vehicle production for the two largest producing countries (Germany and France) rose from 58% to 62%, while their share of manufacturing as a whole decreased slightly: in other words there was a small increase in the relative concentration of the industry in these two countries. In the US, the picture is somewhat different: if we take the number of states producing approximately the same share of American production as Germany and France account for in Europe, this went from two in 1970 to six in 1996. Yet the share of manufacturing as a whole produced in these matching states went from 13% to 33%. So there was considerable dispersion of US motor vehicle production relative to European, but it nevertheless remained more concentrated.

Table 4 Determinants of industrial structure: country and industry interactions

	Country characteristic	Industry characteristic	Effect
1	Secondary and higher education, as % population	Non-manual workers relative to manual	Significant, small increase
2	Researchers and Scientists as % of labour force	R&D, as % value added	Significant, large increase
3	Agricultural production as % GDP	Agricultural input as % of total costs	Weak, small increase
4	Market potential	Transport costs	?
5	Market potential intermediates, relative to mp final goods	Sales to industry as % total sales	Significant, large decrease
6	Access to suppliers	Intermediate goods as % of total costs	Weak, large increase

Table 5 European and US motor vehicle production

1970	Vehicle share	Manufacturer share
EU 2	58%	46%
US 2	56%	13%
EU 4	86%	76%
US 10	87%	56%

1982	Vehicle share	Manufacturer share
EU 2	59%	44%
US 4	61%	25%
EU 4	84%	74%
US 12	84%	61%

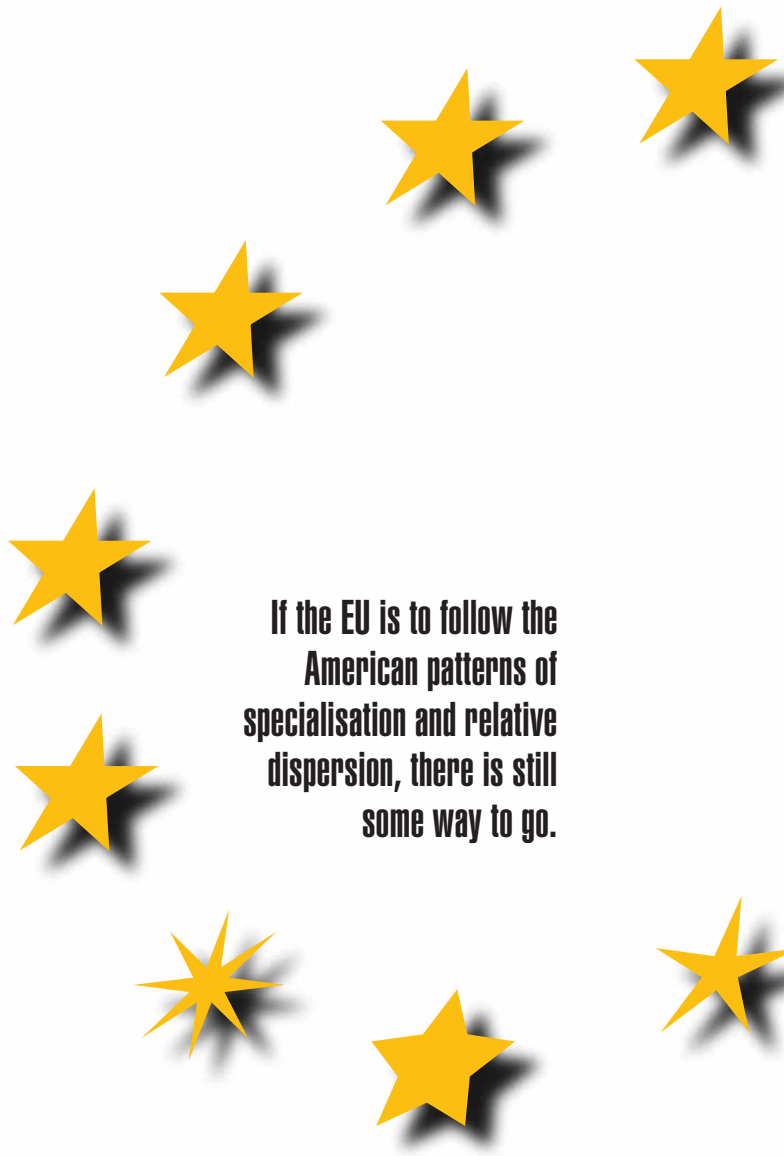
1996	Vehicle share	Manufacturer share
EU 2	62%	45%
US 6	63%	33%
EU 4	82%	65%
US 13	82%	61%

Spatial dispersion compared

We can use the vehicle production approach to construct an index of the location of each industry, relative to the location of manufacturing as a whole. The result shows that EU industry is relatively more spatially dispersed than its US counterpart in 16 of the 21 industries. In a few, including motor vehicles and apparel, the EU's high level of dispersion relative to the US has declined somewhat. But in the majority of others, the EU pattern was and remains more dispersed than that of the US. The index difference appears quite modest: but it is still clear that the gap between the EU and the US is generally considerably larger than the changes that have actually taken place in the EU since the early 1980s. If the EU is to follow the American patterns of specialisation and relative dispersion there is still some way to go.

A low cost process

The changes that are occurring are slow – over a 14-year period most economies have only seen a few percent of their industrial production move between manufacturing sectors. Looking at more detailed data (if it were available) might reveal more dramatic change, but nothing in our analysis suggests that the process is particularly rapid. This is good news, insofar as it suggests that the adjustment costs associated with structural change are likely to be modest. Furthermore, the degree of specialisation remains quite low, suggesting that vulnerability to industry specific shocks is modest. And as integration causes industrial specification, so it also facilitates diversification in other activities – for example international portfolio diversification – which would mitigate the effects of shocks. Is this process of growing dissimilarity among EU countries going to continue, or is it reaching some limit? There's as yet no evidence of a slowdown: EU industry appears to still be more dispersed than that of the US. EU specialisation still has some way to run.



If the EU is to follow the American patterns of specialisation and relative dispersion, there is still some way to go.

Anthony Venables is Professor of Economics at the LSE and Research Director of the CEP.

Further reading

The location of European industry, K.H. Midelfart-Knarvik, H.G. Overman, S.J. Redding, and A.J. Venables, discussion paper no142, Directorate General for Economic and Financial Affairs, European Commission.

Comparative advantage and economic geography: estimating the location of production in the EU, K.H. Midelfart-Knarvik, H.G. Overman and A.J. Venables, CEPR discussion paper no2618.

By Markus Haacker

Crisis in Southern Africa

The Economic Implications of the HIV/AIDS Epidemic

Southern Africa is facing an AIDS crisis of epidemic proportions: by 1999, almost one in ten of the population was HIV positive. Markus Haacker examines the economic consequences of the disaster.

The AIDS epidemic in southern Africa has attained dramatic dimensions. The Joint United Nations Programme on HIV/AIDS (UNAIDS) estimates that by end-1999, that 9.4 million people out of a total population of 97 million were infected. For the 15-49 age group, the proportion of those infected rises to 20%. The crisis is such that even if measures to contain the epidemic were successful in bringing down the numbers of new infections, mortality rates would continue to rise until at least 2010. The economic implications are alarming.

The epidemic is overwhelming available health facilities; between 50% and 80% of hospital beds are reportedly occupied by AIDS patients. High mortality rates among public sector employees have led to a decline in the quality of public services, such as education. Personnel costs are rising – and will continue to rise – for the public and the private sector, because of the number of people off sick, and medical and death-related costs. Employers have less incentive to train their staff as increased mortality rates reduce the expected returns of training measures. The growth rate of total GDP will inevitably fall, though the effect on GDP per head is less clear. The capital-labour ratio may rise due to reduced population growth, whereas productivity and the supply of human capital will fall.

The demographic impact

Over the region as a whole, the adult HIV infection rate averages 19.1%; it ranges from 13.2% in Mozambique to 35.8% in Botswana (see Table 1 overleaf). This compares to an average rate of 8.6% for the whole of sub-Saharan Africa, and of 0.2% for the world excluding sub-Saharan Africa. In 1999, the Joint United Nations Programme on HIV/AIDS estimates that 742,100 (0.8% of the population) in southern Africa died of AIDS-related diseases. As a consequence, life expectancy at birth has fallen to around 40 years for most countries in the region; for the worst affected countries, it may decline to around 30 years by 2010.

A mother and child, both weakened and sick with the HIV virus.

By 2010 ... the population growth will fall close to zero for Lesotho, Mozambique and Namibia and will turn negative for Botswana, South Africa and Zimbabwe.

Table 1 The demographic impact of HIV/AIDS in southern Africa

	Total population	People living with HIV/AIDS	Adult HIV prevalence rate	Estimated AIDS deaths	Life expectancy at birth	Life expectancy at birth, "no AIDS"
	1999 thousands	1999 thousands	1999 %	1999	1998 years	1998 years
Botswana	1,592	290	35.8	24,000	40.1	61.5
Lesotho	2,108	240	23.6	16,000	54.0	62.0
Malawi	10,674	800	16.0	70,000	36.6	51.1
Mozambique	19,222	1,200	13.2	98,000	–	–
Namibia	1,689	160	19.5	18,000	41.5	65.3
South Africa	39,796	4,200	19.9	250,000	55.7	65.4
Swaziland	981	130	25.3	7,100	38.5	58.1
Zambia	8,974	870	20.0	99,000	37.1	56.2
Zimbabwe	11,509	1,500	25.1	160,000	39.2	64.9
Southern Africa	96,545	9,390	19.1	742,100	–	–
Sub-Saharan Africa	596,272	24,500	8.6	2,200,000	–	–
Global total	**5,362,577**	**9,800**	**0.2**	**600,000**	**–**	**–**
(excluding sub-Saharan Africa)						

Data sources: UNAIDS (2000) for columns 1-4, and U.S. Bureau of Census (1998) for columns 5-6.

Patients in a ward of the Nhkotakota Hospital queue up at 4am for their medication

Photograph © Gideon Mendel/Network

Companies relying on skilled workers will find it difficult to replace workers who have fallen prey to AIDS.

The combination of increased mortality and decreasing fertility has already led to a marked slowdown in the rate of population growth. By 2010, the International Programs Center at the U.S. Bureau of Census projects that the population growth rate will fall close to zero for Lesotho, Mozambique, and Namibia, and that it will turn negative for Botswana, South Africa, and Zimbabwe. The increase in mortality rates is most pronounced for the population between ages 15 and 49, where AIDS-related deaths account for an estimated 65-90% of total deaths in 2000.

Health

Can health services cope with the increase in AIDS-related illnesses? Can the most up-to-date and powerful AIDS treatments be made available in southern Africa? It's difficult to see how. Current estimates of the total cost of treating an AIDS patient in the region (excluding combination therapies) range from 72% (South Africa) to 144% (Zimbabwe) of a country's annual GNP per head. These estimated cost per case, together with estimates of the number of AIDS cases, suggest that, in 1999, the demand for AIDS-related health services amounted to between 0.6% (Mozambique) and 1.8% (Botswana) of total GDP. The actual cost incurred by treating AIDS patients would be lower, simply because health facilities in the region are limited, and so is the coverage offered by medical insurance schemes. But even meeting only 50% of the demand for additional health services would push total public health expenditure up by between 11% (for South Africa) and 33% (for Botswana); total health expenditure would rise by between 5% (South Africa) and 21% (Botswana). It's already clear from local indicators that health services are being overwhelmed by the demand. Even if health facilities were expanded rapidly, the quality of health services in Southern Africa would probably continue to decline. The number of AIDS cases is expected to continue to rise sharply: it may at least double for six of the nine countries in the region by 2010. At the same time, health staff are affected by the epidemic as well, and it will be difficult just to maintain current numbers of doctors or nurses, rather than increasing them significantly to meet rising demand.

Education

With mortality among teachers rising and student numbers declining, what impact will the epidemic have on educational standards? One way to try to answer this is to focus on the number of new teachers required to maintain given pupil-teacher ratios. This would reflect changes in the numbers of students, as well as changes in the size of the teaching body. Table 2 shows that, in 2000, 45% of all newly qualified teachers in the region will have found themselves replacing AIDS victims; this ratio will rise to 67% by 2010. The total number of new teachers required will increase only modestly, or even in some areas will fall, as the anticipated number of pupils declines. But as a proportion of a cohort entering the labour market, the number of required new teachers will rise. In Zimbabwe, for example, the share of those completing secondary education who will be needed as teachers is likely to rise from about 2% to more than 3%. These figures cast doubt on the ability of those countries affected to preserve even current standards of education, let alone plan for improvements.

The cost to business

HIV/AIDS affects companies in several ways: through its adverse effect on productivity; increased medical and death-related costs; and a decline in the supply of skilled

Table 2 The impact of HIV/AIDS on the education sector

	Pupil-teacher ratios		Total number of pupils (thousands)		Required teacher training		Training to replace AIDS victims		AIDS deaths, % of total training	
	primary	secondary	2000	2010	2000	2010	2000	2010	2000	2010
Botswana	25	17	452	437	1059	1008	164	611	15.5	60.6
Lesotho	47	24	471	502	646	817	141	395	21.8	48.3
Malawi	64	45	3295	3398	3462	3135	940	1413	27.2	45.1
Mozambique	58	33	1769	1901	2287	2466	447	1218	20.0	49.4
Namibia	32	21	509	522	1398	1362	618	791	44.2	58.1
South Africa	27	26	11421	9160	21700	16476	11436	12922	52.7	78.4
Swaziland	34	19	256	333	775	986	151	533	19.5	54.1
Zambia	39	–	1614	1876	3022	3298	998	1249	33.0	37.9
Zimbabwe	39	28	3269	2669	5448	4368	2960	3610	54.3	82.6

Data sources: IMF staff projections and calculations, based on demographic projections from the U.S. Bureau of Census and historical data on the numbers of pupils and teachers in primary and secondary education from the UNESCO Statistical Office. Data for Zambia refer to primary education only.

workers. The incentives for companies to invest in training will also fall. Productivity declines as the state of health of employees suffering from AIDS deteriorates, as absenteeism increases, and as the replacement of workers who die or have to leave the company results in disruptions to the production process. The few case studies available suggest that for a company in which 1% of the workforce suffers from AIDS, these losses in productivity may well amount to 0.5-1% of the wage bill.

Many companies in the region currently provide medical benefits and pensions or lump-sum benefits to surviving dependents. For Zimbabwe, a country with a well-developed insurance sector, UNAIDS reported that by 1998 life insurance premiums had quadrupled as a result of the HIV/AIDS epidemic. Similarly, a study by Metropolitan Life for the manufacturing sector in South Africa estimates that the costs of risk benefits will rise from 7% of the wage bill in 1997 to 14.6% in 2007, largely due to HIV/AIDS.

Companies relying on skilled workers will find it difficult to replace workers who have fallen prey to AIDS. While unskilled workers may, to some extent, be replaced by previously unemployed or workers from the informal sector, this is generally not possible for skilled employees. At the same time, companies will be less willing to provide training to employees. One way of measuring the returns from investments in human capital to companies is to assume that these are proportional to the time an employee can be expected to stay with the company, discounted by an appropriate interest rate. If mortality rates among employees were to rise from 0.25% to 3%, the returns from training employees would fall by 15%. In order to maintain a constant number of trained employees, the same analysis suggests that the company's training budget would have to increase by 54%.

So the impact of HIV/AIDS on companies will be substantial. For a company in which 3% of the workforce die of AIDS in a given year, the total resulting cost may amount to 10% of wage costs. At the same time, the supply of skilled employees can be expected to contract. As a result, competitiveness will decline, making it difficult to attract investment into manufacturing, export-oriented industries.

Economic growth and per capita income

The implications for economic growth and per capita income are equally significant. The HIV/AIDS epidemic is likely to affect growth through its effects on productivity, the supply of labour, human capital, and physical capital. For the purposes of this analysis a neoclassical model has been used, a key assumption of which is that human capital can take two forms, *education* and *experience*. *Education* reflects the average level of schooling of the labour force, which may change as the quality of the education system changes, or if HIV infection rates differ across skill categories. Because data for the region is poor, education is assumed to remain constant for the purposes of the analysis. *Experience* represents skills acquired through learning on the job. The level of experience depends on the number of years in the workforce, and is specified in such a way that efficiency increases by an average 1.5% with each year spent in the workforce. When the labour force grows rapidly, the average level of experience is low, because younger (i.e. inexperienced) cohorts are relatively large. If mortality rates among the workforce rise, the average level of experience will also decline, as more workers die early.

The analysis also assumes that for a company which has 1% of its workforce affected by AIDS, total factor productivity falls by 0.5%; and that households affected by AIDS do not save, thus reducing domestic private investment. The levels of foreign direct investment and of public investment are assumed to stay constant as a proportion of GDP. The two main channels through which the epidemic affects GDP

Table 3 The impact of HIV/AIDS on per capita income, "medium run"

	Change in GDP per capita (%)
Botswana	-4.9
Lesotho	-3.6
Malawi	-3.3
Mozambique	-2.9
Namibia	-4.0
South Africa	-3.1
Swaziland	-3.9
Zambia	-3.7
Zimbabwe	-3.8

A female medical ward, where all the floor space is taken up by patients and their guardians

Photograph © Gideon Mendel/Network

per capita are its effect on the capital-labour ratio and the impact on human capital. The capital-labour ratio will rise mainly because the rate of growth of the labour force declines. In measuring the impact on human capital, it is important to distinguish between the "medium run" and the "long run". Initially, HIV/AIDS affects the level of human capital only through increased mortality. As more workers die, the level of experience in the workforce, and thus of human capital, falls.

But in the long run, the number of new entrants to the labour force will grow at a slower rate, once the generation born after the HIV epidemic has spread enters the labour market. This alone would mean that the size of younger cohorts relative to the size of the workforce will fall, and that the average level of experience in the workforce will therefore rise. In the medium run (until about 2020), per capita income is projected to decline by between 3% and 5% for the countries covered here (compared with a situation with no AIDS), mainly because of a decline in the level of human capital.

In the long run (by 2050), most of the negative effect of increased mortality rates on the average level of human capital is offset by the decline in the growth rate of the number of new entrants to the labour force. Thus, the level of GDP per head might increase, responding mainly to an increase in the capital labour ratio. These results apply to an open economy. If capital is perfectly mobile, the increase in the capital output ratio, corresponding to a decline in the returns to capital, would trigger a capital outflow until the capital output ratio is back at the original level. In this case, output per head would decline by 7%-15% in the medium term, and by 1%-3% in the long run.

Table 4 The impact of the HIV/AIDS epidemic on per capita GDP, "long run"

	Change in GDP per capita (%)
Botswana	+12.9
Lesotho	+10.5
Malawi	+6.7
Mozambique	+5.7
Namibia	+7.7
South Africa	+10.3
Swaziland	+9.8
Zambia	+7.8
Zimbabwe	+11.1

Data sources: IMF staff estimates.

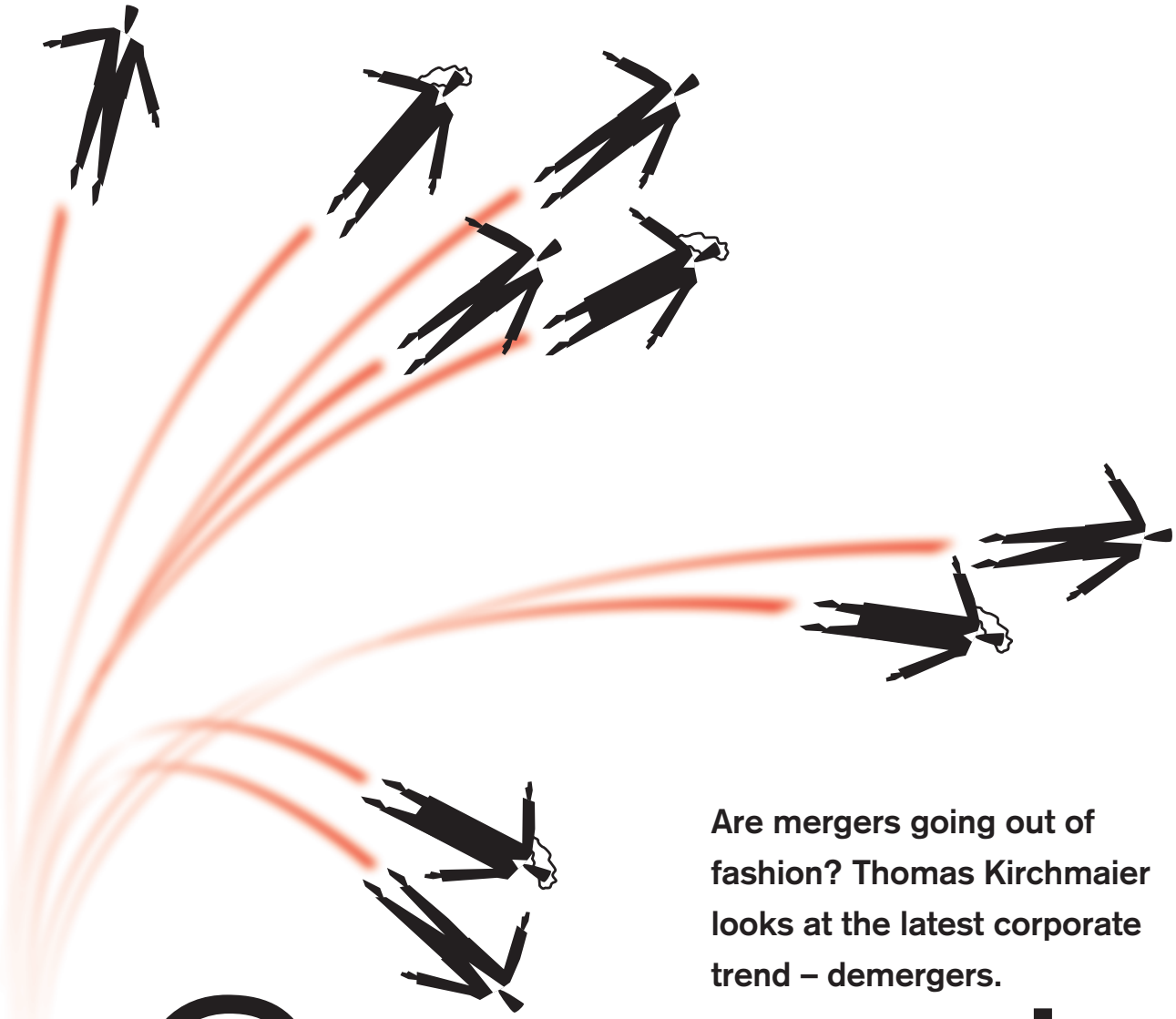
A disaster in progress

It is hard to underestimate the scale of the demographic, social, and economic impact of the AIDS epidemic in southern Africa. Mortality rates for the working-age population (ages 15-49) will increase dramatically, and under-age AIDS orphans will make up between 3.4% (Lesotho) and 7.2% (Botswana) of the population. Health services are already overwhelmed by the epidemic, and it is difficult to see how even the current standards of education can be maintained. Personnel costs in the region will increase significantly, quite possibly resulting in a decline in investment. At least for the next two decades, the average level of human capital per worker will decline, as the number of experienced workers declines.

On the positive side, governments and private enterprise in the region, as well as NGOs and various international organisations, are making major efforts to halt the spread of the disease. Measures to combat the spread of HIV range from a broad national education campaign, starting early in primary school (which was successful in bringing down HIV infection rates in Uganda, for instance), prevention measures targeted at high-risk groups (e.g. migrant workers or prostitutes) to training and measures to make condoms freely available within companies. Strenuous though these efforts now are, however, they cannot reverse the damage already done: mortality rates will rise for several years to come whatever measures are taken now.

Markus Haacker is an economist in the Research Department of the International Monetary Fund. He was a member of the CEP from 1996-99.

Except where otherwise stated, all numbers and tables are taken from: Markus Haacker, *The Economic Consequences of HIV/AIDS in Southern Africa*, International Monetary Fund, 2001.
Data source: International Programs Center, U.S. Bureau of the Census.



Are mergers going out of fashion? Thomas Kirchmaier looks at the latest corporate trend – demergers.

Corporate demergers:

or is divorce more attractive than marriage?

By Thomas Kirchmaier

"In the last few weeks, it has seemed that it could not be long before the whole of the British industry was merged into a single company. …Never has the cult of gigantism gone so far" wrote John Kay in the *Financial Times* recently. It's true that Britain and other Western economies have experienced an unprecedented wave of mergers and acquisitions (M&A) activity over the last two decades. It was driven by a common hunger amongst many CEOs to increase the size of their corporation. The trend has persisted despite the fact that the impact of mergers and acquisitions on a firm's profitability remains very uncertain. For example, the available academic evidence on the performance effects of America's merger waves over the last 100 years suggests that, on average, mergers and acquisitions did not help to improve the performance of the firms involved. In fact they more often destroyed value than created it. Reasons for the failure are plentiful, but it seems that managers systematically underestimate the problems attached to the merger and acquisition process.

Perhaps some managers are getting the message. While M&A activity has been – and, in certain sectors at least, remains – intense, there has also been a growing number of demergers. The CEP has been analysing the impact of demergers on shareholder wealth. The results of the analysis are striking: whereas mergers bring, at best, questionable benefits, demergers by contrast are in most cases clearly beneficial for shareholders.

What are demergers exactly?

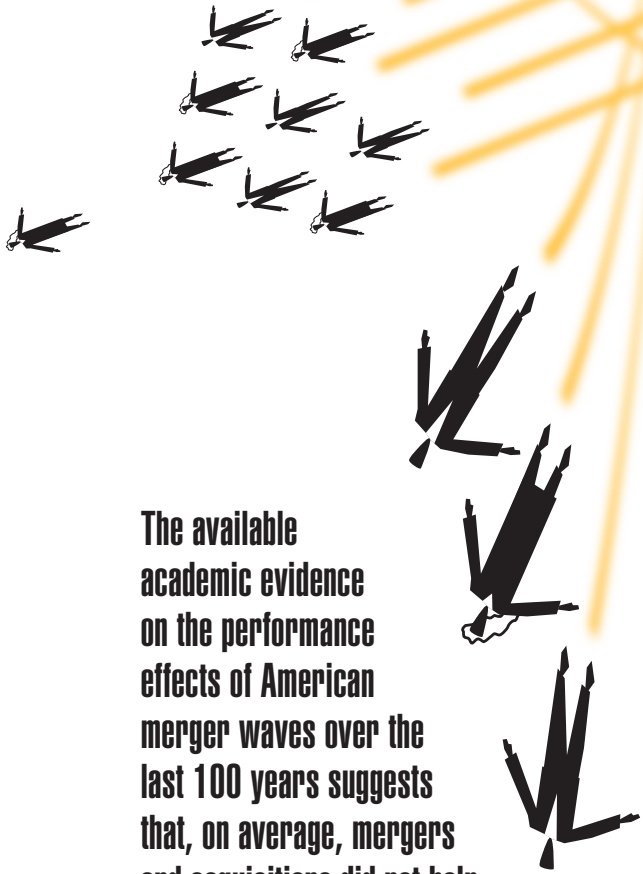
In a demerger, usually referred to in the US as a spin-off, a company is split into two or more fully independent parts. A wholly-owned subsidiary becomes an independent entity, with its shares being distributed to the shareholders of the parent company on a pro-rata basis. This process is considered to be a non-cash dividend by the parent firm and is tax-free provided that a substantial proportion (though not necessarily all) of the shares in the spin-off are distributed to the shareholder at no cost. Demergers are sometimes confused with an equity carve-out in which a minority stake in a company is sold to the wider public in an Initial Public Offering (IPO). Demergers are an American invention of the 1920s and have been a common feature in America since the 1950s. In 1980, Geoffrey Howe, then British Chancellor of the Exchequer, introduced tax incentives for demergers to facilitate the de-conglomeration of British industry. He reasoned: "There are cases where businesses are grouped together under a single company umbrella. They could in practice be run more dynamically and effectively if they could be demerged (…) and allowed to pursue their own separate ways under independent management". This legislation paved the way for the first British demerger. In 1990, the European Community adopted demerger legislation, thereby introducing the concept of demergers to many European countries for the first time. Since then demergers have been taken up very slowly in most European countries, with the bulk of European demergers being of British origin.

What's the impact?

Demergers are of interest for a variety of reasons. First and foremost, are they a form of corporate restructuring that can create value for the shareholder? Demergers also make it possible to evaluate changes in the size of an organisation and its impact on performance. If an increase in size through M&A has at best no impact on performance, would the inverse process have a similar impact? Analysing demergers also enables us to assess the impact of corporate focus, one of the key management phrases of the last two decades.

Value creation through demergers

The CEP study examined European demergers, most of them British, which took place over the past ten years. We used shareholder wealth as an indicator of firm performance. The results showed that, unlike mergers, demergers are indeed on average beneficial for the shareholder. Often they are preceded by a period of distinct underperformance compared with a market benchmark. Demerger announcements appear to be welcomed by the market. Announcement effects are particularly important when assessing demergers or similar events. If financial markets are operating efficiently, the response to new information should be immediate and correct at the time of the demerger announcement. Ideally, the market should correctly anticipate all future value gains (or destruction) from such an event and adjust the market price accordingly. Looking at the results of individual firms we can see that demergers do not guarantee success. The announcement effects are very diverse, with one quarter of all announcement effects being received negatively by the markets. Over the three years following the demerger, the spin-off or smaller part seems to do considerably better than the parent firm. Whereas the parent tended slightly to underperform the market, the spin-off significantly outperformed it by approximately 18% after three years, with most of the value creation occurring in year two after the demerger. It seems that it takes the spin-off roughly one year to reorganise itself in a way that allows it to reap the benefits of the restructuring activity. Combining the performance effect of parent and spin-off and weighting them according to their relative market value shows no statistically significant effect. Taken together, the market appears to have correctly predicted the long-term effect of a demerger. The long-term results are depicted in the chart (overleaf).

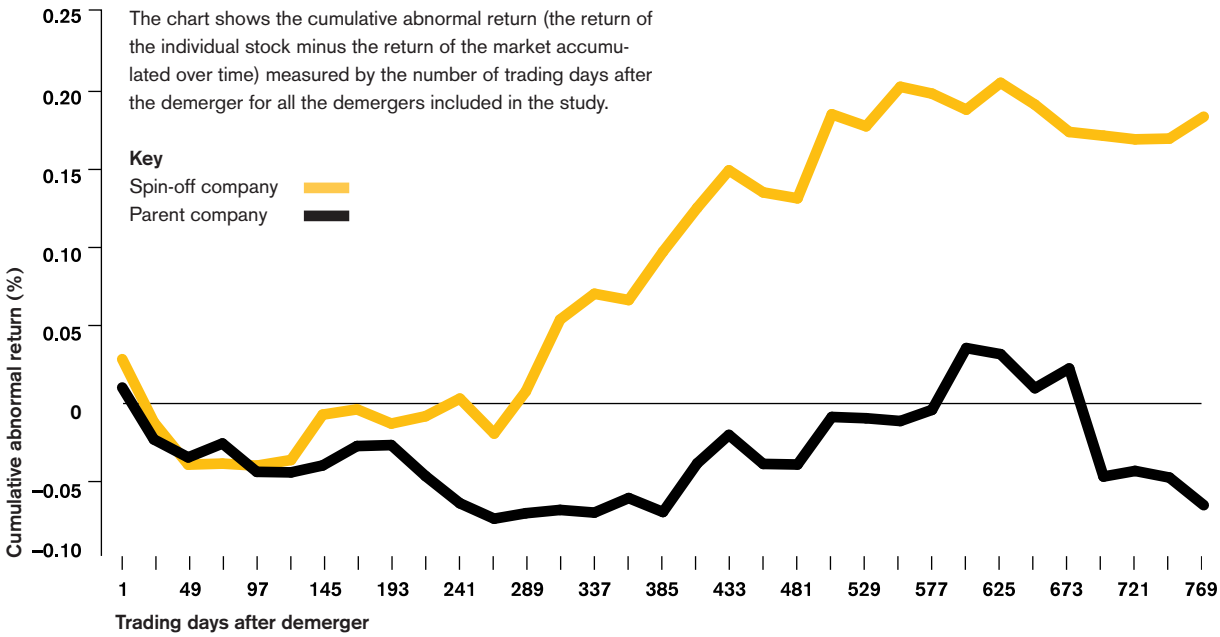


The available academic evidence on the performance effects of American merger waves over the last 100 years suggests that, on average, mergers and acquisitions did not help to improve the performance of the firms involved.

Demergers of *hidden jewels* have been particularly successful. These are business units that were, for one reason or another, starved of cash within the former parent company. For the purposes of our analysis, these hidden jewels are defined as those demergers that were able to raise new capital in the market within weeks after the break-up. In this type of demerger, the announcement had a beneficial effect on shareholder wealth of 14% for the three-day time window analysed. The long-term effects seem to be particularly strong but because there is only a small number of firms in this category the results are not statistically significant and should only be taken as anecdotal evidence. Nevertheless, the evidence available from similar cases in America (such as Lucent Technologies) appears to support these findings.

Demerger announcements of small firms were more successful, on average, than those of large ones. The long-term effects, however, show quite a different picture. On a combined basis, large firm demergers underperformed the market by 20%. The dismal performance of the large parent firm is responsible for this as a result of significantly underperforming the market by 29% in the three years after the demerger. The reverse happens with smaller firms where the market tended to underestimate the positive effect of a small firm's demerger. In the following three years, parent and spin-off together significantly outperformed the market by 26% after a positive announcement effect of 7%. The results are surprising as they somehow indicate that a reduction in size and an increase in corporate focus only seem to have a positive impact on smaller firms. Intuitively one would have expected the contrary effect, or no difference at all between the two groups. To

Measuring the benefits of demergers



Demergers of "hidden jewels" have been particularly successful.

test if the size of the demerged entities determines performance, the sample was divided by size at the time of the demerger. This reinforced our findings that smaller spin-offs are far more successful than larger ones, and that smaller parent firms are more successful than larger ones following a demerger. The performance difference between large firms and small firms is about 30% in both cases. In part this is because of the higher takeover likelihood of smaller firms. In particular, smaller parent firms are more likely to be taken over than larger ones. But takeover likelihood cannot fully explain the performance difference between large and small demergers.

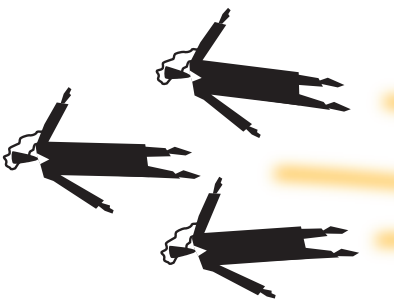
The motivations for demergers

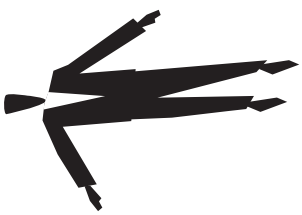
There are many explanations for the value creation of demergers. Firstly, there is the initial argument of untangling conglomerates that were created in the 1960s and 1970s but by the 1980s had ceased to add value with the advancement of the capital market. In addition, there is some anecdotal evidence that by demerging, firms can recover some of the value that was destroyed in an unsuccessful merger or acquisition. It might therefore be reasonable to expect that some of the firms currently involved in a value-destroying merger or acquisition will attempt to demerge parts at some point in the future. Some firms might find that they become simply too big (either through organic growth or acquisition) thereby experiencing diseconomies of scale. The costs of running large organisations in this case outweigh the benefits, making it beneficial to create smaller entities. Some firms diversify into an apparently related business, without analysing rigorously enough whether this business fits their core resources, i.e. the firm's unique assets, skills and capabilities. Synergies that appeared to exist ex-ante turn out to be destroying value after the transaction. Demergers are a relatively easy way to undo the merger process.

As mentioned above, corporate focus has been the managerial buzzword since the 1980s and 1990s. It is claimed that focused firms are more successful than diversified ones. This idea is intuitively convincing: it is better to do one thing well than many things badly. But what is it that makes corporate focus such a convincing concept? Consistency seems to provide a partial answer. A firm's strategy is dependent on having the appropriate organisation to deliver its products or services, and its control mechanisms, employee skills and incentive systems need to be in line with its business. The integration and optimisation of all parts of an organisation can be essential to a firm's success.

Changes in the economic and technological environment can make obsolete combinations of business units that made sense in the past. In this case there is nothing to be gained – and perhaps much to be lost – by keeping them in one organisation, especially since two head offices might have much better parenting skills. In this case and others, a demerger will also avoid cross-subsidisation and the creation of large bargaining costs between the business units. Independent parts cannot fight over the same pool of resources. Most importantly, however, demergers are a deliberate move by the CEO to increase corporate focus. They are therefore likely to remain a feature of the corporate restructuring scene for the foreseeable future.

Thomas Kirchmaier is a member of the Centre for Economic Performance.

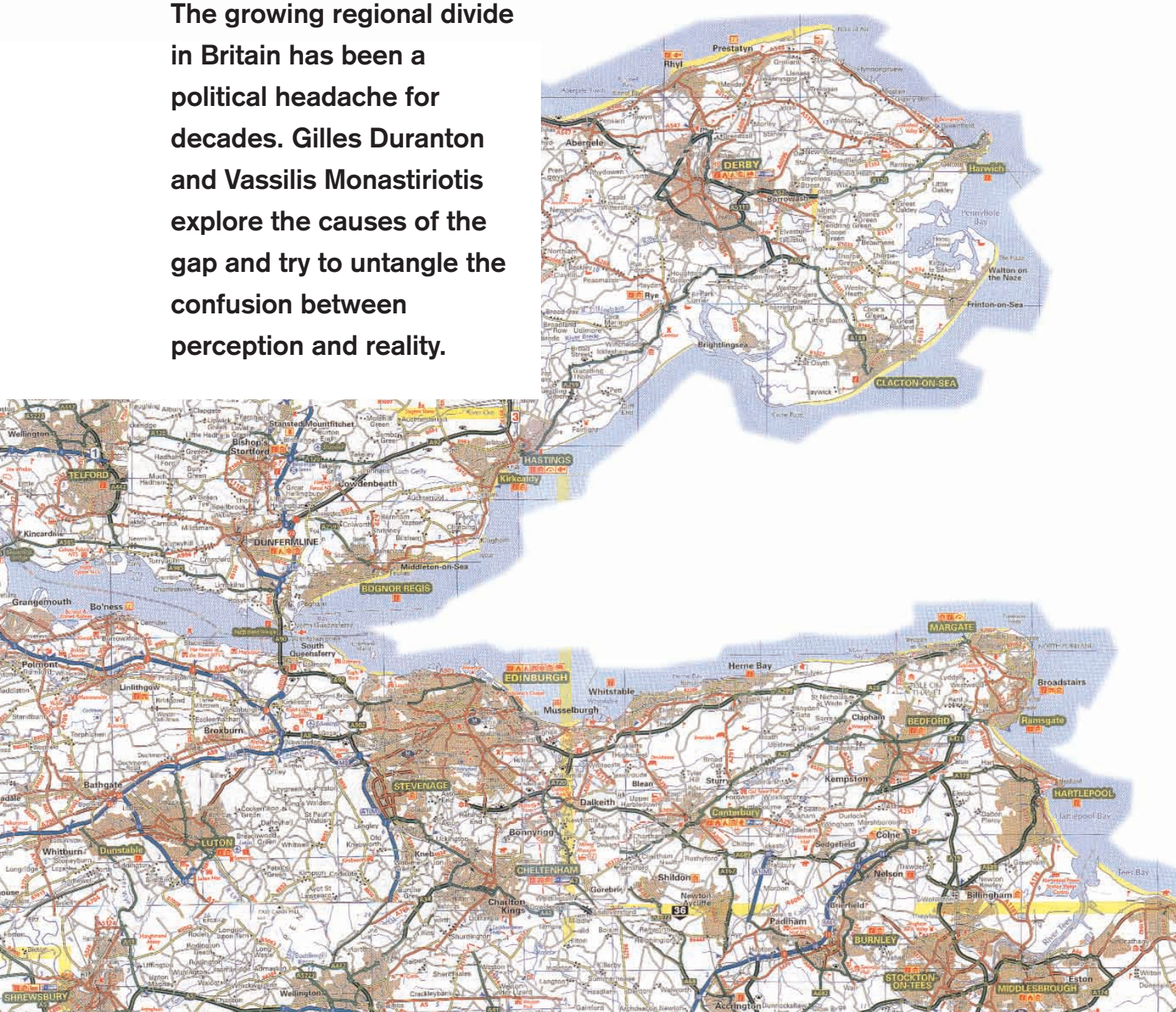




Mind The Gap

How much does Britain's north-south divide matter?

The growing regional divide in Britain has been a political headache for decades. Gilles Duranton and Vassilis Monastiriotis explore the causes of the gap and try to untangle the confusion between perception and reality.



On the face of it there's no mistaking the extent of regional inequality in Britain. Aggregate figures from the Office for National Statistics show that in 1982, average earnings in London and the south east were, respectively, 121% and 103% of the national average: by 1997, those ratios had risen to 137% and 109%. Using regional GDP per capita instead of average earnings gives a similar picture. And comparable inequalities across UK regions can be found for unemployment, educational attainments, and even mortality. This is the notorious north-south divide, a prosperous south east and an increasingly impoverished north.

These figures, however, are quite misleading. A more useful comparison would be to use not the average wages of workers across regions, but the wages of specific groups of workers across regions. This makes it possible to distinguish those inequalities which result from workers in the same jobs being paid different rates from inequalities which reflect the different composition of the workforce in different regions. The result is a somewhat different picture of the extent and nature of regional inequalities.

It's what you measure

Figure 1 uses the conventional approach: it plots the average relative nominal wage for three regional groupings between 1982 and 1997. Figure 2, by contrast, plots average nominal wages for a specific hypothetical worker, a 25 year-old with secondary education. This shows a striking difference from the traditional analysis. London and the south east are much closer to the national average with London actually being below the south east at the end of the period. There is also evidence of convergence between the three regions. This pattern is repeated for other, similarly constructed hypothetical cases. Once the distribution of human capital is controlled for, the regional returns of all key labour market characteristics (education, experience and sex) and regional fixed-effects converged during the 1980s and 1990s.

How can we explain the very different results obtained from the two approaches? There seem to be three principal factors. First, London had, initially, lower returns to education. The catch-up in returns to education implied large gains in average wages in London. Second, during the 1980s and 1990s, inequality among individuals rose in every region. Rising inequalities between skilled and unskilled, in combination with the uneven spatial distribution of human capital, helped magnify aggregate UK regional inequalities. And, third, rising average educational attainment in London and the south east relative to the rest of the country also played a role in explaining the aggravation of regional inequalities.

The questions to be answered

Our findings reflect two questions:

Do "similar" individuals have the same wage across UK regions?

How have the differences, if any, evolved in the last 20 years?

We used data from the Family Expenditure Survey for 1982-1997, examining a number of specific characteristics, including sex, education and labour market experience, for each region and each year. Educated workers, for instance, earn, on average, more than less-educated workers, males earn more than females and experienced workers earn more than workers with no labour market experience. Workers tend to accumulate skills at the beginning of their career which subsequently become obsolete.

Figure 1 Average regional earnings in the UK 1982-97 (UK Average = 100%)

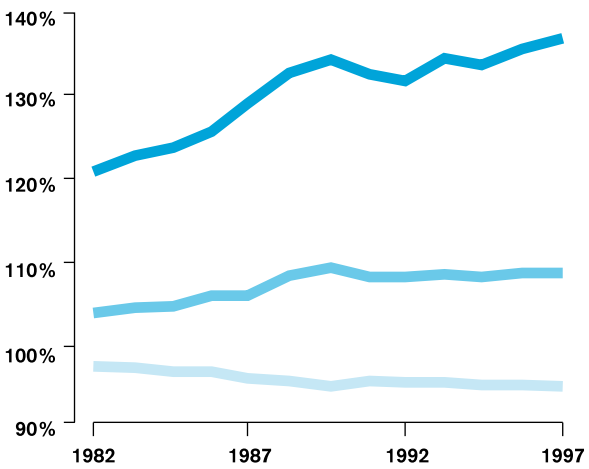
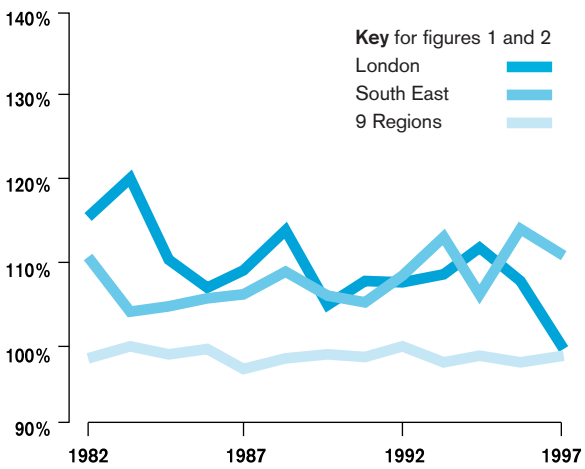


Figure 2 Nominal regional earnings for a 25 year-old with 25 years of education employed full-time. (UK Average = 100%)



A more useful comparison would be to use not the average wages of workers across regions, but the wages of specific groups of workers across regions.

Over the life cycle, therefore, wages first increase, then peak before starting to decline. Our calculations specifically took account of these factors.

Our analysis produced five specific and relevant factors, again for each region and each year:

The gender gap, that is how much differences in wages were affected by whether workers were male or female;

The returns to education, which indicates by how much wages increase for each extra year of schooling;

The returns to experience, which shows the impact of one year's experience on an individual's wage;

The depreciation of skills, which takes account of any negative impact on wages flowing from time away from education;

The regional fixed-effect, i.e. the basic wage that someone with no experience and minimum education in any particular region.

It is instructive to average the results across regions to observe national trends over the period 1982-1997. These trends are very clear and point towards a slight decline in the fixed-effects, i.e. a decline in the wage of a hypothetical uneducated male with no experience. They also document a strong decrease (of around a quarter) in the gender gap as well as strong increases in both the returns to education and experience. These "national" results are very much in line with previous findings regarding the evolution of wage inequalities in the UK. However, in spite of these marked national trends, regions have behaved differently.

The gap in regional fixed-effects at the beginning of the period was very large at 0.9 (from 3.35 in Northern Ireland followed by the north west with 3.77 to 4.25 in London at the other extreme). For the end of the period, the range is much smaller at 0.41 (minimum for Northern Ireland at 3.72 and a maximum for London at 4.13). Again, extrapolating these figures suggest that the differences in base wages across regions would disappear after 22 years.

The regional divergence for the gender gap was also initially very large at 19% (from 43% in the south east to 26% in Northern Ireland and 24% in London). But by the end of the period, the range had fallen to 14% (19% in London and 33% in East Anglia). Extrapolating these figures suggests that the regional divergence would disappear altogether after 26 years.

For education, too, the pattern of declining divergence is visible. The annual returns initially ranged from 6.0% in London to 9.6% in the north west and 10.5% in Northern Ireland. At the end of the period the extremes remained

Figure 3 Regional convergence in the real fixed-effects
Trend 1982-97

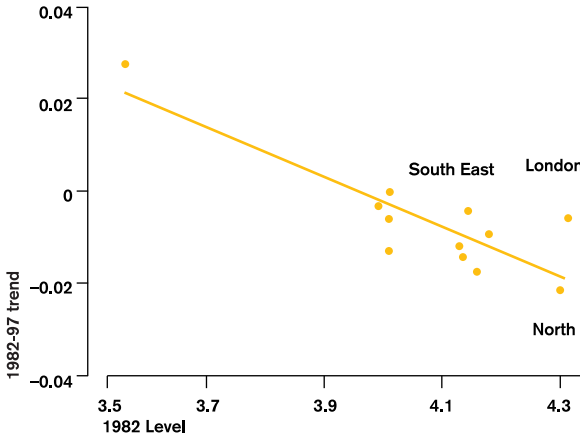


Figure 4 Regional convergence in the gender gap
Trend 1982-97

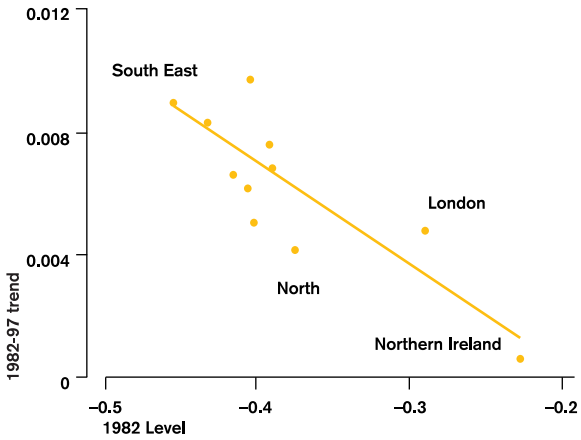
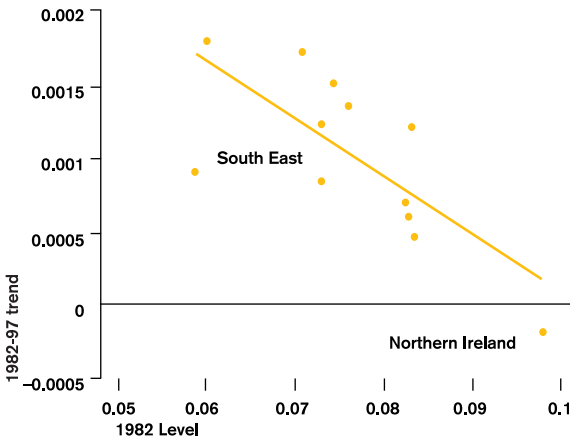
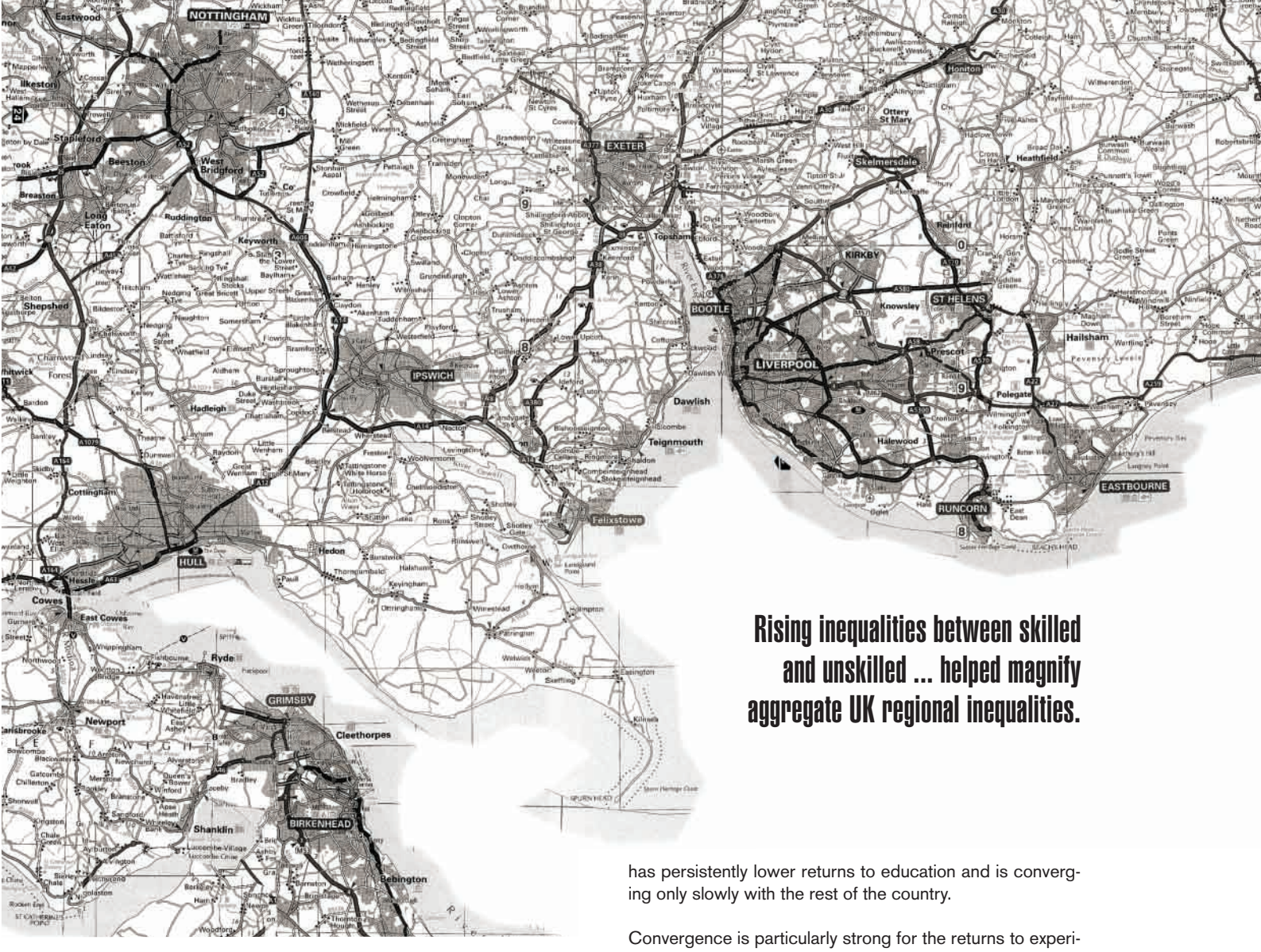


Figure 5 Regional convergence in the returns to education
Trend 1982-97





Rising inequalities between skilled and unskilled ... helped magnify aggregate UK regional inequalities.

London with 7.4% at the bottom end and Northern Ireland with 10.4% followed by Yorkshire with 10.3% at the top end: that's a fall of more than one third, from 4.5% to 2.9%. But regional differences in education returns will disappear more slowly than the other measures we examined – again extrapolating our findings, convergence is likely to take 35 years. This is partly because London has persistently lower returns to education and is converging only slowly with the rest of the country.

Convergence is particularly strong for the returns to experience. The lowest returns were initially in the north with 4.8% whereas the highest were in Northern Ireland with 7.9%. By the end of the period, the range had only fallen from 3.1% to 1.4% with the extremes being the south west with 5.5% and East Anglia with 6.9%. The convergence periods are likely to be 12 years for experience and nine years for the depreciation of experience.

Convergence in every single dimension stands in sharp

Figure 6 Regional convergence in the returns to experience
Trend 1982-97

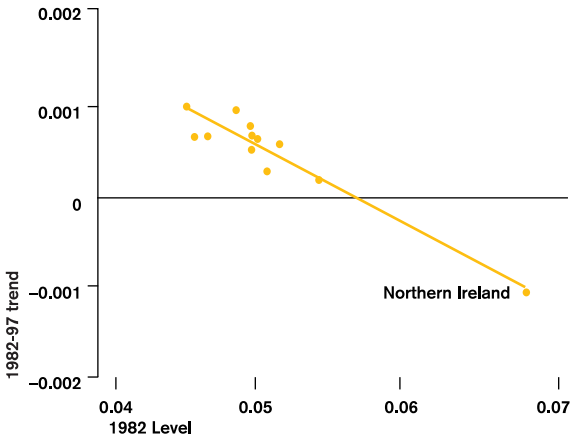
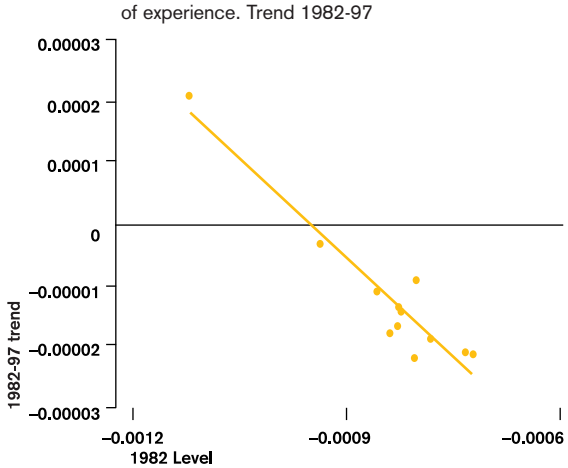


Figure 7 Regional convergence in the depreciation of experience. Trend 1982-97



contrast with the rising wage gaps observed in the aggregated figures. This discrepancy can only be resolved by looking at regional structures.

How regional inequalities evolved

For simplicity, we looked only at the evolution of regional inequalities between London and the nine regions between 1982-83 and 1996-97 (Northern Ireland has a behaviour that is different from the rest of the UK whereas the south east is somewhat halfway between London and the nine other regions of Great Britain). We broke down the aggregate increase in regional inequalities into

(1) changes in the characteristics across the country (e.g. an increase in average education);
(2) changes in the differences in characteristics across regions (e.g. the increase in education being stronger in London);
(3) cross-country changes such as the impact of a lower gender gap; and
(4) changes in the differences across regions such as a narrowing of the cross-regional differences in the gender gap.

The results are in Table 1.

The evolution of the nominal fixed-effects led to greater regional equalisation. The decline of the London premium for the regional fixed-effects accounted for 32% of the rise in regional inequalities between London and the nine regions. Gender variables accounted overall for 10% of the increase in regional inequalities. This small aggregate effect is the result of conflicting price and composition effects. The national increase in female participation implied an increase in regional inequality because of the lower gender gap in London. The relatively stronger increase in female participation in the nine regions reinforced this push towards greater inequality and the national decline in the gender gap reinforced this. But the

Table 1 Decomposition of aggregate increase in regional inequalities.

Increase in regional inequalities 1982-1997	100.0%
Component 1: changes in characteristics	-31.6%
Gender	9.7%
Education	-51.0%
Experience	9.7%
Component 2: changes in cross-region differences in characteristics	39.0%
Gender	16.0%
Education	58.8%
Experience	-35.8%
Component 3: changes in prices	23.8%
Gender	6.3%
Education	23.9%
Experience	-6.4%
Component 4: changes in cross-region differences in returns	68.9%
Fixed-effects	-32.0%
Gender	-21.9%
Education	114.9%
Experience	7.9%
Total	**100.0%**

stronger relative decline in the gender gap in the nine regions moved in the opposite direction. For experience, the overall effect is one of cross-region equalisation.

The combined effect of the regional fixed-effects, gender and experience variables accounts negatively for 47% of the rise in inequality. In other words, if it were not for education, inequalities between London and the nine regions would have decreased significantly. Overall education accounts for 147% of the increase in regional inequalities.

It's important to break things down

It is interesting to note that across all variables, the fourth component, relating to the evolution of cross-regional differences in the returns to individual characteristics (i.e. convergence in this case), accounts for 69% of the rise in inequality. This highlights the importance of taking a disaggregated approach to regional inequalities. In the UK between 1982 and 1997, the most important cause of the increase in aggregate inequality is convergence in the returns to labour market characteristics (experience and education). In other words, differences in average wages across regions in 1982 were actually lower than would have been predicted by the differences in characteristics across regions. Regional differences in the returns to labour market characteristics in the early 1980s helped to hide regional inequalities which resulted from the differences in labour force composition. The decline in these price differences over the 1980s and 1990s, then, contributed to increased differences in average wages.

It is also worth noting that the evolution of regional prices for goods and housing on the one hand and that of the returns to labour market characteristics on the other are unrelated. But there is a positive link between the evolution of regional prices and that of the population in UK regions. Over the period, the population of London and the south east increased by 6.5% compared with 3.3% for the nine regions – a marked population shift towards the south. This may have been triggered by the initially more favourable sectoral composition of this area (business services, hi-tech, etc). This rise in demand for labour attracted more workers, which in turn caused a rise in the demand for other types of workers (personal services, etc) – the trends reinforced each other. This inevitably created widening divergence in prices, with land prices in particular rising sharply in London and the south east. These price effects may be so important as to make these two regions unaffordable for the least skilled workers – many of whom end up leaving. This in turn could explain the increasingly uneven distribution of skills observed in the country.

For education, too, the pattern of declining divergence is visible.

Implications for policy

Our results suggest that there is no large labour market unfairness across UK regions. Regional inequalities caused by differences in returns to labour market characteristics have decreased significantly. But at the same time, the differences in the composition of the labour force across regions have become more pronounced. If the objective is to equalise earnings for comparable individuals, there may therefore be no case for a regional policy aimed at ironing out regional differences of this kind. That doesn't of course mean that there can be no efficiency gains from regional policy. For example, the increasingly uneven distribution of skills across regions is at least partly the result of strong institutional restrictions on the supply of land in London and the south east. It may be tempting to argue for some planning deregulation in this area. That would be premature, however, since an even greater concentration of population in London and the south east could have a significant impact on the environment and on congestion. Such reforms are also likely to have distributive effects through potentially large changes in house prices everywhere in the country.

There is one potential bias in our findings. The analysis presented here refers to only one particular geographical scale: the region. Inequality has also risen within UK regions, at country level. Even at the regional level, what may be true for wages may not be true for other important issues like health or the educational attainment of youngsters. Our findings should therefore be seen as setting the agenda for further research rather than as a blueprint for regional policy.

Gilles Duranton and **Vassilis Monastiriotis** are members of the Department of Geography and Environment at the LSE. Gilles Duranton is a member of the CEP.

This article is based on CEP Discussion Paper 485, *Mind the Gaps: The Evolution of Regional Inequalities in the UK 1982-1997*, by Gilles Duranton and Vassilis Monastiriotis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By Richard Freeman

The Internet: hype vs reality

The millennium year was the best time and the worst time for that (growing) part of the world economy associated with the Internet. Richard Freeman explains how the CEP has been responding to the changes and challenges which the Internet has brought.

In 2000, the numbers of households on the Internet rose sharply throughout the world. In the UK, about a third of all households were online by the end of 2000, placing Britain below only North American and Scandinavian countries in the extent of Internet access. 11 million people in Britain used the Internet every month from their home in September 2000 – a number certain to grow.

At the beginning of 2000 the Internet economy boomed with investors throwing cash at almost anyone with a business plan that involved the Internet. Digital tulips? Count me in. Internet fashion company? Sounds good. Free Internet service? Let's start up.

But by the end of the year, the bodies of dot.coms lay strewn along the ground. Share prices for business to consumer Internet firms plummeted, and many questioned whether even highly successful Internet firms like Amazon would eventually turn a profit.

It's global

The great advantage of the Internet is that it provides potentially massive quantities of information at low cost to persons anywhere in the world – the globalisation of what many economists believe is the key to economic progress and success: knowledge and information. But what will people do with this explosion of potential information? Will the Internet change buying habits or social behaviour and create a genuine world community? Or will it turn out to be more hype than reality? These are some of the questions the Centre for Economic Performance is now seeking to address and in November 2000, a ground-breaking conference took place at the Centre.

What is the Internet Doing to the Economy, Labour, and Society? illuminated some of the ways in which the Internet is affecting business and society (and it was held in the midst of the dot.com turbulence). The Conference marked the launch of Centre efforts to analyse the reality of the Internet economy and to exploit the online digital data that will change work in the social sciences in the future.

The business world

The mid-Cambrian explosion in life forms that Stephen Jay Gould describes in his book *Wonderful Life* was, to paleontologists, one of the most exciting periods in the

By the end of the year, the bodies of dot.coms lay strewn along the ground.

history of the world. Thousands of diverse creatures found themselves competing in a new environment. Most would become extinct, but some would leave descendents who would survive for aeons.

The Internet economy explosion in business form in the late 1990s-early 2000s is an equally exciting period for economists. Most of the new businesses – some say 90% – will fail as the market weans out those that can deliver value and make profits from those that cannot do so. The dynamics of firms forming and failing or succeeding represents the essence of capitalism *à la* Schumpeter. It offers a striking opportunity for economists and other social scientists to study the dynamics of economic change.

The CEP conference paid particular attention to two types of market developments: consumer auctions and recruitment sites.

Internet auctions

One striking development in the new Internet economy is the development of auction sites to sell goods from consumer to consumer; from business to consumer; and from business to business. By auctioning a good to consumers around the world, sellers can obtain higher revenues than they could otherwise get. Consumers can get bargains on goods that they would never previously have had access to. By bidding on goods, moreover, consumers send a signal to firms about their interest in the firm's goods and the price they are willing to pay. This information can help firms set prices and provide firms with information on potential purchasers for comparable products in the future.

Consumer behaviour at e-auctions diverges from the simplest models of auctions that economists have used to analyse bidding on auctions. Consumers tend to delay putting in their bids until very late in the timing of the auction, rather than specifying a reservation bid at the outset. One reason seems to be to avoid setting off a price war. Another is that consumers with expertise in a particular product – for instance antiques – want to keep that knowledge private, for fear that once others know that someone views a particular antique as valuable, they will also bid, raising the price and reducing the possibility that the expert can benefit from her special knowledge.

Recruitment sites

By the end of 2000 there were approximately 400 job boards and Internet recruitment sites in the UK, and about 5,000 such sites in the US. The most popular type of Web-based recruitment was the job board – a simple listing of jobs comparable to newspaper classified advertisements. But the business form with the greatest potential value added are those sites that include searchable CV databases and search engines to enable an employer to whittle down potential employees to a small number of applicants most compatible with its job needs.

E-recruitment should reduce the time spent by workers searching for the appropriate job and the time spent by firms looking for the employee with the right set of skills. Employers could find someone who has the required skills for any job at the click of a mouse. By lowering frictional unemployment it should reduce unemployment rates. Public employment services in Sweden and Germany, among other countries, have made great use of Internet recruitment. The CV of every unemployed person in Germany is available on the Web for employers. The UK public employment service will use IT to have information on all available jobs at every job centre this year.

But there are other potentially less desirable possible outcomes from Internet recruitment. It could be that the Internet will focus employer demand on a limited number of "super star" workers, whose wages will be bid up, while normal workers will suffer. The Internet will increase the brain drain from less advanced countries to the west, making it more difficult for those countries to develop. Throughout the Third World, people with access to the Internet log on and check the jobs available in London, New York, Munich, and anywhere else they are interested in. Mobility via Internet information will benefit those workers and their employers, but may not benefit the citizens in poor countries whose taxes paid for their education.

Social behaviour

The Internet is also influencing the way non-profit organisations operate. The CEP conference examined the use that unions were beginning to make of the Internet. According to Eric Lee, the world authority on online union activity, union websites have changed from first-generation brochure sites, with a grinning picture of the general secretary, to hi-tech savvy third-generation sites incorporating the latest multimedia and clever programming. The information provided is, he argues, creating a new internationalism among labour that harks back to labour internationalism before World War II.

Some unions try to enlist members online and others have begun to experiment with e-unions, to organise members in fields where the members are never close enough to have traditional meetings. Others have used the Web to conduct votes and provide union members with a wide range of information. The ability to perform some activities online could be essential in further democratising unions. As in the business area, there are several competing models of how unions adjust to the Internet.

Politics too

After the US Florida voting fiasco, the notion that the

By the end of 2000 there were approximately 400 job boards and internet recruitment sites in the UK, and about 5000 such sites in the US.

Internet offers potential ways to strengthen democracy from voting over the Web to connecting government and citizens over the Web has taken on a greater sense of reality. The Internet can increase connectivity between the government and its citizens. Millions of citizens throughout the world currently pay taxes through the Internet. Millions download government forms on the Web rather than traipsing off to some office or using the ordinary mail. E-government is in its infancy, and here too different groups and states are experimenting with alternative models; but it will undoubtedly make the democracy of the 21st century very different from the democracies of the 19th century.

As people communicate more and more on the Web, the way they write and speak (and think?) will change. Young people who use the Web seem to have developed an "on-line" language, with short words and catch symbols for phrases. Young Internet users also seem to have developed exceptional multi-tasking skills with some children holding up to six conversations online simultaneously. The increased use of the Internet in homes highlights the challenge that the "digital-divide" creates for the social structure of modern economies. Internet use in the UK is biased towards the south east and higher income groups, and it may be that some government intervention is needed to provide PCs and cheap Internet access to less well-off parts of the population. It is intriguing that the two parts of the world which lead the Internet economy are the US, with a highly unequal distribution of income and skills, and Scandinavia, with an unusually equal distribution of income and skills.

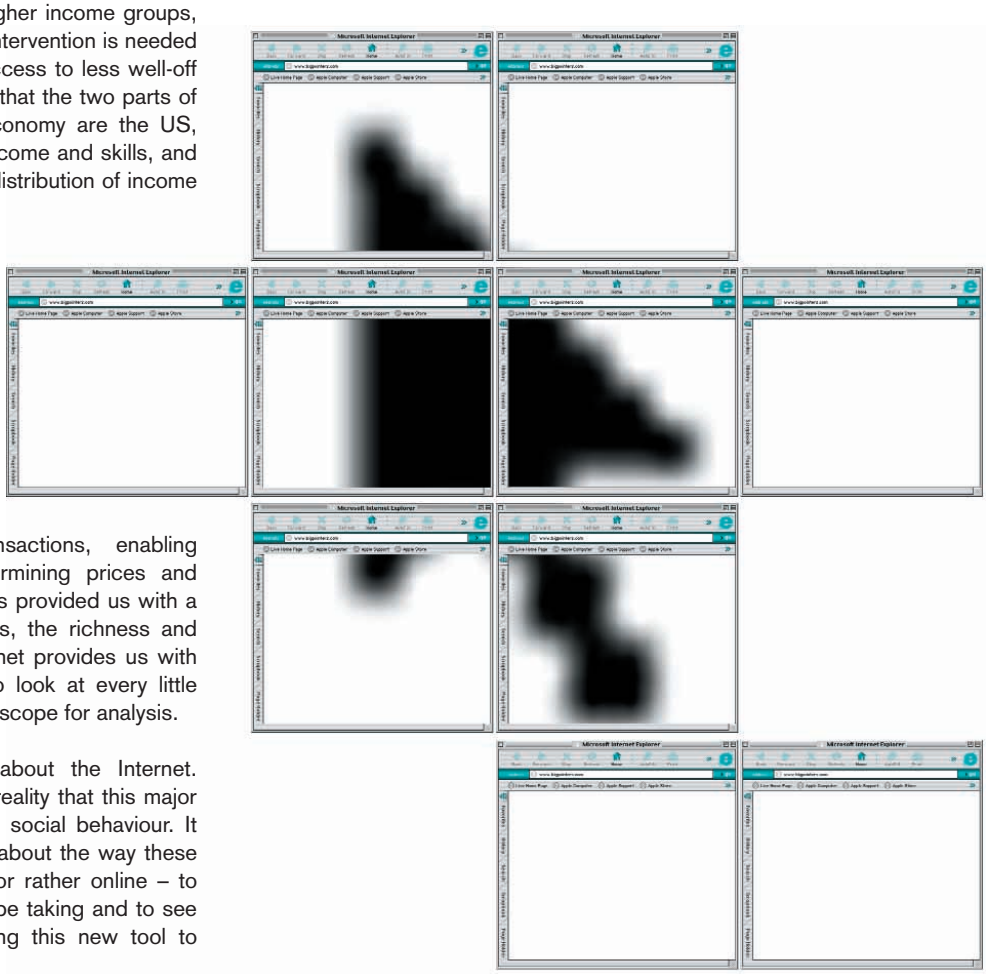
It will affect CEP as well

The Internet will also change the way the Centre conducts its research in the future. Computerised datasets have greatly advanced empirical social science by allowing researchers to analyse huge bodies of data. The Internet will revolutionise this even further by providing virtually real-time data on economic transactions, enabling researchers to watch markets determining prices and transactions. If computerised data sets provided us with a microscope to look into various fields, the richness and amount of data provided by the Internet provides us with an electron microscope; a chance to look at every little thing going on and thus a much larger scope for analysis.

There is undoubtedly much hype about the Internet. The CEP conference highlighted the reality that this major innovation is changing economic and social behaviour. It also highlighted the great uncertainty about the way these changes will proceed. Stay tuned – or rather online – to see which directions the Internet will be taking and to see how Centre researchers will be using this new tool to better understand the UK economy.

Richard Freeman is Co-Director of the CEP and runs the Internet research programme. He is also Professor of Economics at Harvard University.

A full set of papers from the conference is available: the Centre's website (http://cep.lse.ac.uk) has full details.



Brain development and childhood

By Leon Feinstein

When it comes to helping disadvantaged children, what can social scientists learn from neurological research? Leon Feinstein reports on a CEP conference.

Rapid scientific advances in brain science and genetics have potentially significant implications for the extent to which policy can help disadvantaged children become fully participatory members of the economy and society. But most social scientists and policy-makers know little about the latest advances in brain science and childhood development nor how they might exploit this accumulation of knowledge in order to frame more effective policies which could help more children.

The trouble is that brain scientists, social scientists, and policy-makers rarely interact. The Centre for Economic Performance held a conference in the summer of 2000 on the theme of the early years as part of what is intended to be a longer-term effort to develop contacts between social scientists and their colleagues in the natural sciences. *What Do We Know about Brain Development and Childhood Interventions?* brought together a number of leading practitioners in neuroscience, biological psychiatry, human psychology, and economics, as well as UK policy-makers responsible for devising and evaluating early childhood programmes. There was no shortage of questions for the respective disciplines to address collectively.

What's the connection?

Social scientists and policymakers have debated endlessly about the effects of government policies aimed at helping poorly adjusted and troubled children and adolescents. Many advocates have stressed the need to intervene very early in the child's life, up to three years old. But to what extent are such arguments supported by the scientific evidence?

There has also been considerable argument about the merits, or otherwise, of pre-school programmes aimed at helping children from under-privileged backgrounds. Some of the gains of such programmes appear to be only temporary, while others appear to benefit the child much later in life. Some programmes seem to work better than others. Can the scientific evidence help policymakers assess the relative merits of one programme compared with another? Can other disciplines help social scientists judge why programmes have variable success rates? To what extent can successful small programmes be scaled up at a national level?

Similar questions arise when trying to decide how best to develop policies with limited resources. The proponents of early policy intervention argue that such policies can have a bearing on what happens to a person later in life – such as the likelihood of their being unemployed or involved in crime. These issues are particularly important for the UK, since current policies envisage significant investment in the *Sure Start* programme, targeted at the very young. *Sure Start* gives local areas considerable leeway in deciding how to run policies affecting the very young. Providing helpful guidance as to which policies work best obviously makes sense.

And the conclusions?

As the conference progressed it became clear that neurological science can provide considerable insight for policy formulation. The most significant issues to emerge over two days of discussion were:

■ There is considerable plasticity to the brain. Brains change and adjust to environmental stimuli throughout a person's life, though plasticity declines with age. Environments with normal stimuli lead to greater brain development than impaired environments.

■ Synapses, connections between brain cells, form at an early age and are then pared back, but this does not mean

Few 8-year-olds can grasp calculus, so it makes sense to teach advanced mathematics at a later stage.

that the only time to intervene is early. The paring back is part of healthy brain development and how we use the synapses we have may well be as important for development as the initial growth in synapses. Policy should not focus exclusively on children up to three years-old.

■ Different aspects of behaviour and brain function have different points at which intervention is most fruitful. For example, when it comes to languages, early training in foreign languages is more efficient than later training because the phonological aspects of language are more readily learned before the age of eight. But few eight year-olds can grasp calculus, so it makes sense to teach advance mathematics at a later stage.

■ Genes affect the likelihood that individuals will have specific behavioural characteristics. There is variation in the extent to which such characteristics are inherited: but even those heavily influenced by heredity can still also be influenced by environmental factors. Genetic analysis can be used to inform intervention strategy but ultimately policies aimed at influencing childhood development should be judged in their own right.

■ The old-fashioned debate about the relative importance of nature and nurture is seriously misleading in its implication that the two are independent. There is an important interplay between genes and environment so that many outcomes depend on the two working together. Genes influence both the likelihood that individuals will experience particular risk environments and also influence their susceptibility to those risk environments. Because of that, the outcomes of any given genetic pattern or any given environmental situation will vary substantially among individuals. This has implications for the individual tailoring of some intervention policies.

■ Successful pre-school interventions can improve children's scores on standardised tests and their performance for years into the future. But the most successful programmes require high quality intensive resources and are, therefore, expensive. Their effects are more likely to persist if they are followed up in the school years. The best programmes are often small scale, which raises questions about how effective they will be if broadly expanded.

■ Child-based interventions – those that target children – are more effective than parent-based interventions – those that try to get parents to interact differently with their children. Some of the most impressive interventions place disadvantaged children into what amounts to middle or upper income pre-school environments for extended periods of time.

■ Science can provide tools to analyse intervention policies. Advances in brain-scanning can measure the effects of interventions on the physical brain. Advances in DNA analysis can provide a better understanding of the role of genes in various forms of social behaviour and give early warnings to potential problems an individual may face later in life.

Where does this leave future research?

The conference discussions highlighted the potential value of tackling difficult questions on interventions on a multi-disciplinary basis, bringing together researchers from the brain sciences and the social sciences and experts in policy development and implementation.

One obvious direction for future research is to explore the feasibility of adding biological data – for instance on individuals' genetic make-up – to social science databases. The Millennium Cohort, a new British birth cohort study getting underway in 2000-2001, will gather a wide range of data on children born at the start of this millennium. It may be prudent to invest now in gathering genetic data on the cohort members and their parents for use by researchers in the future.

Another potentially fruitful move would be to add neurological data to studies of the effectiveness of social interventions. Medical and psychiatric researchers study the impact of treatments on patients' disorders at the level of biochemical activity or brain functioning. It is possible that adding measures of biochemical activity or brain functioning to studies of the effectiveness of pre-school or school-age interventions could help document what changes had occurred and help generate or test hypotheses as to why.

While brain scans are not at this stage feasible for young children, the conference highlighted the potential value of examining the effects of different experiences and interventions on the physical brain as well as on social behaviour. Something that has demonstrable effects on the brain would, on the face of it, be more likely to have a long-term effect than an alternative policy which had no discernible impact on brain development. If the long-term behavioural improvements found in some small-scale studies could be traced to effects on certain aspects of the brain develop-

The best programmes are often small scale, which raises questions about how effective they will be if broadly expanded.

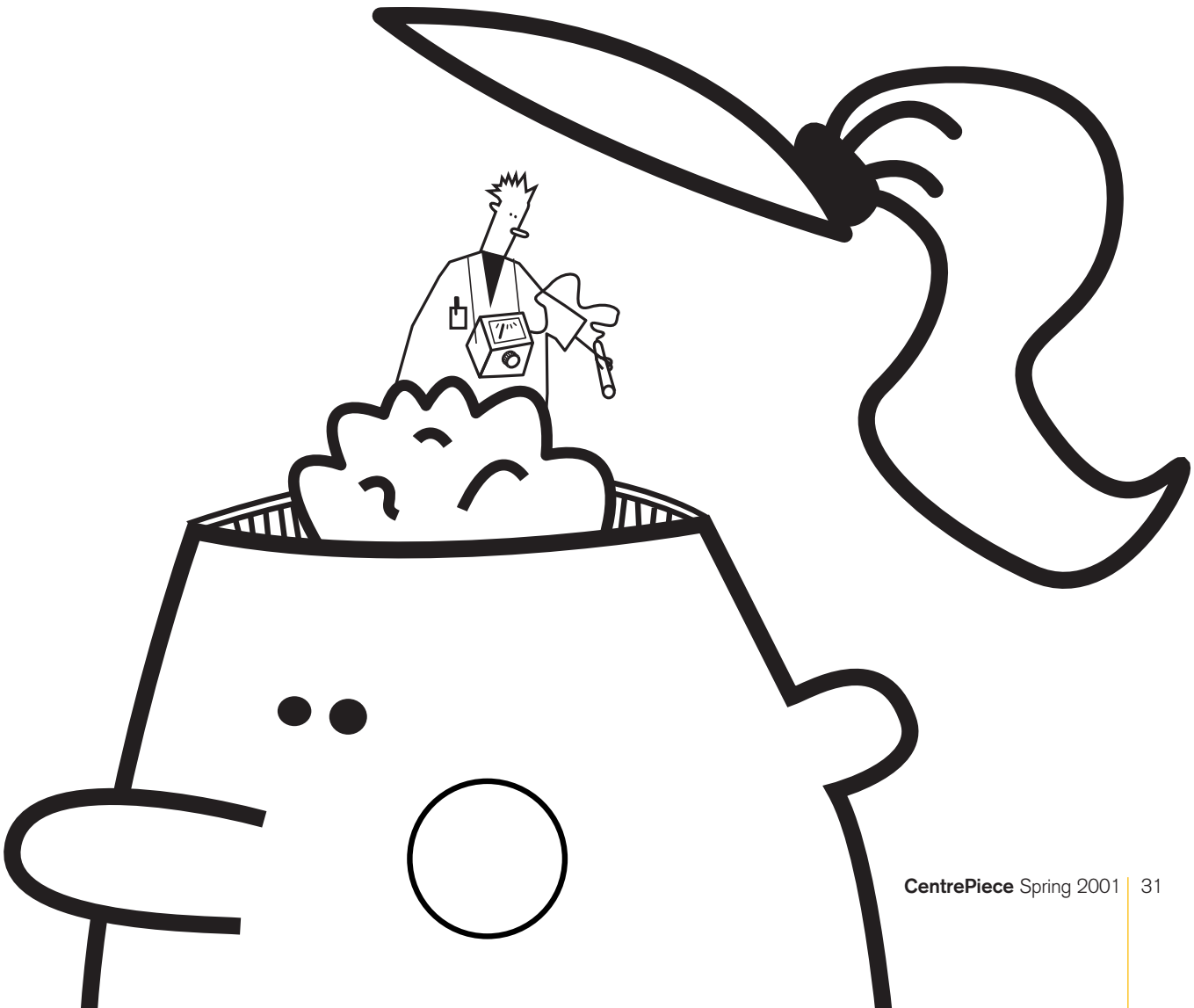
ment of those affected, we would have a much better notion of how to develop future policy.

The conference also identified the need for research on implementation of policy. Given the challenges in making large-scale social initiatives work, policy-makers and practitioners need not only to learn about the best evidence from current science, but also to find ways to motivate decision-makers at local level to act on this information. Such research could take the form of seminars or consultations, the distribution of information through postings on the Internet or mailings, and the evaluation of which groups made most effective use of which form of information.

The conference provided pointers for the future development of research in this challenging area. It also underlined the enormous potential benefits of interaction between the natural sciences and social scientists: and this is something the CEP plans to develop in future, both in this area and others.

Leon Feinstein teaches economics at Sussex University; he is also a research associate of the CEP.

More information about the conference proceedings will soon be available on the CEP's website: http://cep.lse.ac.uk



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Dear Sir

Sir Alan Budd: More transparency please!

I am writing in response to Sir Alan Budd's article in the Autumn 2000 edition of CentrePiece where he questions the adequacy of the Treasury Committee in holding the members of the Monetary Policy Committee to account for their actions.

The Treasury Committee takes its role of holding the MPC to account very seriously. Since the inception of the MPC we have held ten hearings with the MPC and, whilst it is not practicable to invite all nine members to each hearing, over the past year we have taken evidence from ten different members of the MPC and a number, including the Governor, on more than one occasion. In addition the Treasury Committee always makes a deliberate effort to spread the questioning amongst all the members of the MPC appearing in front of us in an effort to ensure that each member does have to justify their voting record to us.

In the Committee's 1997 Report on "Accountability of the Bank of England" we examined the best way to hold the MPC to account and concluded that "by bringing information into the public domain we can help clarify the thinking and actions of those responsible for the formulation of monetary policy and that the rigorous scrutiny of the basis for the policy decisions will enhance credibility and effectiveness of the monetary policy as a whole." We have endeavoured to follow this approach in our hearings to date.

Hence, in reply to Sir Alan's criticism that "only a very small proportion of the hearing is devoted to questioning of specific decisions," I would point out that we devote about a third of each hearing to the important issue of specific policy decisions. However, following the remit we set ourselves, we also believe that it is important to examine the outlook for future policy and the key issues effecting the economy and hence we also devote a substantial part of each hearing to covering these wider concerns.

Nevertheless the Treasury Committee, like the MPC, is always looking to improve procedures and we will be examining our own performance as well as that of the MPC as part of our forthcoming report on the monetary framework to be published in the New Year.

Yours sincerely

Giles Radice

Rt Hon Giles Radice MP
Chairman
Treasury Committee

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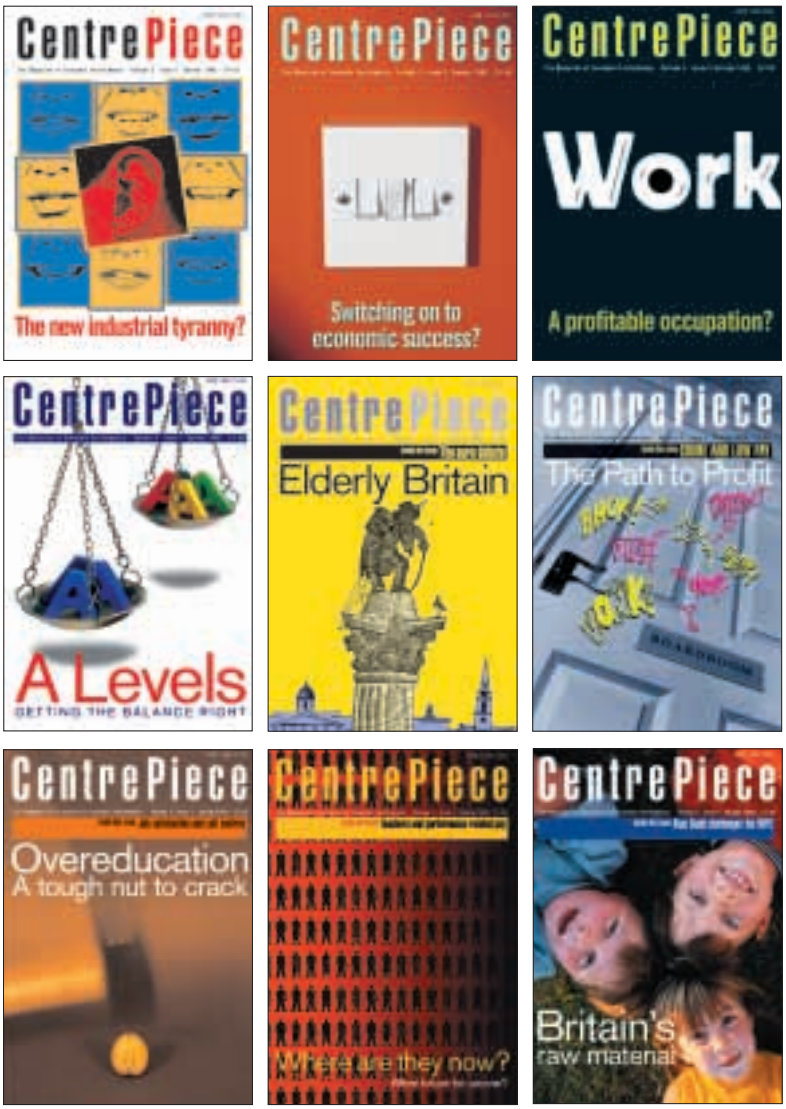

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