Labor Market's in the 21st Century: Skills and Mobility Proceedings of a Joint United States and European Union Conference

U.S. Department of Labori
Bureau of International Labor Affairs
September 2002

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- Dr Tevi Troy, Deputy Assistant Secretary for Policy, U.S. Department of Labor

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Opening Remarks

Ms.Odile Quintin, Director-General, Employment and Social Affairs DG, European Commission

I am very pleased to welcome you all here today, especially our guests from the United States. Returning to my home country means a three-and-a-half hour flight each way, so I am particularly aware that travel is a tiring process. Making it all the more important for us to use our time profitably.

There must have been a time when the contrasts in these Trans-Atlantic encounters were rather more dramatic that they are today.

Although the more dichotomous views had largely evaporated by the time of the first G8 Jobs Summit - chaired by President Clinton - nearly a decade ago, which concluded that both the US, and the EU, had things to learn from one another.

On our side, we can learn about the benefits of efficiency and flexibility in the labour market. On your side, you can learn about the benefits of supportive social policies.

Since then, some things have changed, and some things have not.

Among the things that have not changed is the fact that average US living standards are still around 45 per cent higher than in the EU - according to GDP data, adjusted for purchasing power, just as they were 30 years ago. Although we - European as well as Americans - have doubled our living standards during that time, this is not a bad achievement.

But we know the main reasons for our relatively poorer performance. And it is not a lack of productivity. Productivity per hour in Europe is very close to that in the EU.

Our differences in living standards are primarily due to two factors.

- The first is our much lower rates of employment in Europe. Which we see as a bad thing since we are relying on too few people to maintain our living standards.
- The second is the rather longer average annual working hours in the US. About which we are much more ambiguous, since we do rather like our long holidays!

But we are doing things about our employment rate. The level remains way below that of the United States. But it has risen strongly, all the same, in the past 4 to 5 years. It has risen from little more than 60 per cent for most of the 1980s and 1990s to 64 per cent today. And, there is a political commitment to hit a target of 70 per cent before the end of this decade.

For that we can offer thanks to the example of the United States. As well as to some of our own Member States - notably Denmark, Sweden and Austria - who have also achieved employment rates on a par with the United States.

We recognise the challenge we face. But we are pleased to have created some 10 million additional jobs over the past 4 to 5

years, and to have brought unemployment down from close to 11 per cent in the mid-1990s to below 8 per cent today without increasing inflation pressures in any way. This undermines all those carefully concocted theories that sought to prove that Europe was forever condemned to live with high intransigent levels of structural unemployment!

But the greatest significance is not in what we have achieved, but in what we intend to achieve. And how we intend to do it.

Despite all the temporary short-run difficulties our economies face - and we do not under-estimate them - we plan to continue our progress in increasing the employment rate. Through a combination of renewed economic growth, and a continued radical transformation of Europe's labour market and social systems.

The aim is not the destruction of the European model, but its modernisation and revitalisation.

With the emphasis on the continuing reform of national employment policies through the so-called 'open method of co-ordination', in pursuit of common EU objectives, and respecting common EU guidelines. But acting primarily at national level, in line with the specific needs and priorities of the countries concerned.

This dynamic, inter-active, process of mutual support and incentive has spurred all our Member States to take action at a pace that few of them could have thought possible when we began.

The success of this 'method' means that it is now being applied in related policy areas - notably in tackling problems of social exclusion, which are so often linked to employment difficulties at the bottom end of the labour market.

Alongside the reform of national systems and policies, however, we are looking increasingly closely at the operation of the European labour market as a whole.

With the emphasis on increasing skills and mobility, we are bringing the same kind of single market logic to bear on the labour market, that we have employed in working towards a full single market in products, services and financial markets. Recognising that mobility of workers has been the 'poor relation' of EU freedoms.

To this end, we launched - earlier this month - an EU Action Plan on Skills and Mobility, which will be submitted to the Barcelona European Council. Focusing on removing barriers to mobility, investing is skills and education, and providing better information on jobs and mobility generally.

One proposal that has particularly caught the media's imagination concerns not a common EU social security card, as you have in the United States - for that we will have to wait a little longer - but at least a common electronic health card. A practical and symbolic step, which would simplify current paperwork systems, and give proof of the right of Europeans to have medical expenses incurred in another country, reimbursed by their own Member State. This is an important provision, especially for mobile workers.

You will be hearing more about the 25 specific proposals we have made to promote skills and mobility during the rest of the Conference. Like most changes, they take a little time to negotiate and implement. But they will happen. Overall, this programme represents a clear change of vision, and pace, in the European Union.

Just as we get all this underway, of course, we will be working alongside many of the candidate countries, who are looking forward to entry in 2004, although they will not have full labour mobility until several years after that date.

By the time all those transition periods have passed, however, I am sure you will see, in the new enlarged Europe, a labour market which is much more easily recognisable than the one you are used to witnessing, or reading about. But it will be a European labour market, which, I hope, will manage to combine the best of all possible worlds - our traditional standards of social

performance, and the new standards of economic and employment performance that we are seeking to achieve.

Thank you.

Mr. Thomas B. Moorhead, Deputy Under Secretary for International Labor Affairs, U.S. Department of Labor

Director-General Quintin, distinguished guests and colleagues!

This is my very first EU-US event and it's a real pleasure to be here. On behalf of the U.S. delegation, I want to thank you for hosting this important conference and to say how much we appreciate your warm welcome. Secretary of Labor Elaine Chao asked me to convey her warmest personal regards and her wishes for a successful conference.

We share a common goal: Helping people to achieve their hopes and dreams in the workplace of the 21st century. We are really partners in this pursuit. There is much we can learn from each other about the workforce of the 21st century and the challenges it presents to us.

The profile of employment policy has been raised. It is now routinely seen as a key element to economic success in our increasingly integrated global economy. The benefits that open trade and new technology can provide hinge to a large extent on the skills, mobility and adaptability of our work forces.

I understand that you had a very fruitful discussion in Washington last June before I joined the Department of Labor on this latter issue - work force adaptability - concluding that although labor market adaptability is important to lowering unemployment, we must not lose sight of the importance of flexibility in product and capital markets as well. Plus, the importance of the 'quality" of the jobs we are creating.

Let me build on the 'quality of jobs' issue because it relates to the main theme of our conference - to exchange views on future labor market needs, where it seems clear that knowledge is the driving force. This means understanding that we are part of a new global economy that places a premium on skilled workers, information, and technology.

A few important facts: this is really to just set the stage for the more detailed discussions we will have later as our conference unfolds. These facts support that acquiring skills pays off and there is a growing demand for skills.

- In the United States, the unemployment rate for a high school dropout is four times the rate for a college graduate.
- The earnings gap between high school and college graduates has ballooned to 70 percent.
- Over the next 10 years, 4 out of every 10 new jobs will require a postsecondary vocational or academic degree.

So, the DEMAND for skilled workers is increasing but the SUPPLY of workers is decreasing. The shrinking number of workers is a demographic certainty. For example, in the United States the number of people in the labor force ages 25-34, an age group comprised mostly of persons that work, especially men, is projected to decline by nearly 3-million in just the next 7 years.

If there is a silver lining to the demographic changes, it is that they provide us with an opportunity to reach out to groups whose participation in the labor force has been typically lower. They include -- people with disabilities, older workers, disadvantaged workers and others - that can help take up the slack. We may not have sufficient time to discuss all of these groups over the next day and a half, but they were worth noting because training some of them may require special attention.

If our nations are to remain competitive, and our people are to continue to enjoy the fruits of prosperity, we must build and

sustain a high-skill workforce that draws on the talents of our broad and diverse populations. We must recognize this tremendous challenge and commit to finding solutions. We must be open to new approaches and new ideas and share our experiences.

What are we doing in the United States to meet this challenge?

- We are starting by building a solid, basic education foundation.
- We are working more closely with business to identify the needed skills and, where severe shortages exist, we are helping them train their workforces [Workforce Investment Act]
- We are using technology to make it possible for more people with disabilities to work [New Freedom Initiative]
- We are moving to develop more flexible working arrangements for older workers like 'phased retirement.'
- We are opening our doors wider to immigration [H-1Bs]

The skills and demographic trends we are facing today did not start overnight - and they will not be resolved overnight. We are reaching out widely for solutions, as this conference illustrates, to the business community, the labor community, academic experts, and to other governments.

Thank you!

Keynote Addresses

Ms. Shelley Hymes, Director, Office of the 21st Century Workforce, U.S. Department of Labor

Good afternoon, and thank you for that warm welcome.

It is a great honor for me to be here today, and compare notes with some of the best and brightest looking at workforce issues worldwide. The nations of the European Union and the United States face so many of the same challenges, and I'm happy to have this chance to share my office's perspective on the issues we all care about.

First, let me tell you something about the office that I head up.

The Office of the 21st Century Workforce at the U.S. Department of Labor is about as new as the new century. After talking it over with President Bush, Secretary of Labor Elaine Chao announced creation of our office in March 2001 -- in her first major policy address.

As she put it, our mission is to identify the best ways to close the skills gap, respond to labor shortages, and make America's workplace more responsive to the realities of how people really work in the 21st century.

With a mission like that, you can see why our office crosscuts so much between government and the private sector.

The 21st century workforce is about new technology. It's about education and training, folks with disabilities, ethnic minorities, women, stay-at-home moms, and older workers.

In short, it's about just about everybody.

It has been quite a year. The first thing we had to do was get the word out, so we put together a Summit on the 21st Century Workforce last June at a major sports arena in Washington.

President Bush came, as well as so many leaders in economics, education, business and labor - a first-class think-tank for people to trade ideas on what's happening now and what's coming up for the workforce.

But it wasn't just futurist theory.

In everything we do, I try to strike a balance between exploring ideas about the future, while keeping our feet grounded in everyday reality.

With that in mind, the summit was also the scene of a regional job fair featuring more than 130 local employers reaching out to find real workers for real jobs in real time.

Little did we know how practical that exercise would be.

September 11 came as a shock to the whole country and the world - but particularly, of course, to the Washington and New York areas, where the jobless rate suddenly took off as tourists stayed home, travel and transportation industries faced massive layoffs, and slumping sales made economic recession real to thousands of workers.

In our hometown, the department stepped up to the plate in the most practical way we knew how.

On January 10, we took over the Washington Convention Center and hosted the Workforce Recovery Conference - a job and skills fair to help put people back to work. Everything was in one place -a full range of services for workers seeking jobs and companies looking for qualified people. Over 200 exhibitors took part, and over 8,000 jobseekers showed up to check out the opportunities.

Next month, my office is cosponsoring a conference on Women Entrepreneurship in the 21st Century - a two-day event focusing on American women business owners today. We expect about 1,000 women entrepreneurs from across the country to join us.

The time is right. In addition to making up nearly half the U.S. workforce, women have launched 9 million businesses in recent years, employing more than 27 million workers.

By any standard, women-owned enterprises are a driving force in the U.S. economy and they deserve this kind of attention from Washington. I'm very excited about it.

We are also soon publishing the first edition of a magazine called "21," which will be widely distributed and serve as a clearinghouse for both new ideas and best practices in the workforce.

In many ways, the title of the lead article says it all: "It's not your Parents Workplace."

And it's not.

In the 1960s, the typical American worker was a male, white, full-time, wage earner who generally stayed with one employer and learned most of their skills on the job. Women and minorities were not a large part of the picture - let alone older workers, immigrants and the disabled.

Today, our workplace is transformed. The ethnic, racial, age and gender makeup of the U.S. workforce has been hugely altered due to a fundamentally tight labor market, increased labor force participation, and changes in demographics and immigration.

And workers are on the move like never before. Nobody is staying in one place. By age 34, the average American worker holds nine jobs, which might mean nine skill sets, nine health programs, nine retirement plans, and nine different employment markets around the country.

I know we're going to talk about mobility elsewhere at this Conference. It's a great topic and deserves all the attention it gets.

But wherever they go, people relying on old skills, old habits and old ways of working are in trouble. Too many people don't have the skills today that employers are looking for.

As you know, it's called a skills gap - the short name for the long distance between what an employer needs and what a prospective employee has to offer. Employers are having a tough time finding qualified job applicants. At the same time, thousands of workers want those jobs, but lack the skills.

The problem isn't new, but I think it has gotten worse. There has probably always been a skills gap to one degree or another as mankind progressed through the ages.

But they are particularly severe when expanding markets and new technologies meet and greet with such historic impact - which has been true for the last 25 years - and the rate of change is likely to accelerate in the century ahead.

How should we face down the skills gap?

To me, the answer is common sense: Maximize the number of qualified workers in the workforce by --

- One, upgrading education and training for everyone who needs it;
- Two, opening the doors even wider for those who are too often shut out of the market, such as racial minorities and the disabled; and
- Three, making the workplace more attractive for men and women balancing demands of family and career.

At the Office of 21st the Century Workforce, we are pursuing all three.

First of all, closing the skills gap requires better education and training.

It's no secret that the returns to society from a more educated workforce are positive in any number of ways, in addition to providing the skills that a modern economy depends on.

What are workforce skills, after all? More and more, they are acquired from education.

We in the administration were pleased at the recent passage of the landmark No Child Left Behind Act. We are optimistic that it will improve overall student performance and help close the skills gap that no industrialized country can afford or tolerate.

President Bush's basic policy outlook - insisting on higher standards and greater accountability - will help America's children acquire the skills in K through 12 that they need for the working world ahead.

The U.S. business community knows this better than anybody, and is investing heavily in its human capital - skilled workers.

Last year, American business spent over $300 billion on training and education for employees - more than the budgets of all institutions of higher education in the United States combined. That commitment is likely to grow - and the business community is not alone in this effort.

It is not widely known, but the U.S. Department of Defense is the largest single training organization in the world - a clear recognition that mindpower is crucial to firepower. In 2000, the U.S. Armed Forces spent a combined total of $14 billion on training millions of members of the Armed Forces.

For our part, the Department of Labor is the largest organization in the U.S. government focused on training in the private sector. Therefore, we are exploring ways for the two Departments to combine forces to ensure that military training resources are more compatible with civilian ones, and do a better of job of making them universally available to promote civilian careers.

We are partnering with DOD in the Advanced Distributed Learning program to develop Internet hardware and software in a standard format, but tailored to individual needs. Instead of the old one-size-fits-all online classes, this program has the potential to reconfigure *slices* of knowledge, which then directly help people acquire credentials for specific careers. It is *personalized* learning at its best.

The academic community is also very active exploring new ways to deliver skill training. I recently met with the president's of 10 community colleges nationwide. Community Colleges are really great places for learning because they're inexpensive, fast, and focused. We're collaborating with them to promote e-learning programs where adult learners get homework from the Internet, take classes on the Internet, and talk to teachers on the Internet.

Again, the goal is to make learning available to anybody, anyplace, anytime.

In the lifetime of everyone here, technology has exploded to the point where the United States and the countries of the European Union have moved from economies based on manufacturing to one based more and more on information technology.

It's the age of the knowledge-based economy.

In the United States today, IT industries directly employ about 8 million people, and are projected to employ over 11 million by 2004. The industry has become the leading engine for growth across *all* sectors of the economy.

What does this mean for the skills gap? Plenty.

Technology provides the tools to make workers more productive -with all that means for national prosperity. But to *use* those tools, workers need more and new skills.

In a nutshell, technology contributed to creating the skills gap - but holds the key to closing it. Technology is also making a huge contribution to the more mundane task of even finding a job.

A common frustration among jobseekers in the U.S. has been the difficulty of tracking down quality intelligence on who is hiring and where - and having to go from one place to another to check it out.

At the Department of Labor, the vehicle for bringing together this array of information is our One-Stop Career Centers. These Centers are now in all 50 states - combining services in one central location for jobseekers and employers alike.

Finding jobs and training may never be easy - but it is certainly more convenient than ever.

Again, communications technology is the key. We recently partnered with Monster.com - the private sector's largest online job bank - to cross-reference all our job listings with theirs. It's a great example of a public/private partnership maximizing the power of the Internet for job hunters.

All of this is making it easier to reach out and make room for the skills of those people who have been shut out of the workforce in the past. To remedy the skills gap, we need to try even harder to make our workplaces free of discrimination on the basis of race, age, gender, color or disability.

Of course, laws in most of our nations are mandatory on this topic, but the realities of the skills gap mean that employers *need* to live up to its letter and spirit. As Secretary Chao recently put it, “Opening the doors of opportunity to all used to be a moral imperative. Now, it’s an economic one as well.”

In particular, too many skilled workers with disabilities are unemployed. To address the problem, President Bush recently launched the New Freedom Initiative to help Americans with disabilities buy computers, receive special needs education, and maintain health benefits when returning to work.

At the Department of Labor, we created a new Office of Disability Employment Policy to speak up for the disabled in the business community. The goal is to help disabled Americans enter the workforce, contribute to closing the skills gap, and enjoy better access to the kind of life that the rest of us take for granted.

Narrowing the skills gap also demands more flexibility in the way the workplace itself is set up. Employees want more freedom to choose their own terms of employment - and smart employers are listening.

In a flexible workplace, all kinds of workers - married, single, with or without kids, dual earners - must find jobs that fit their needs - and employers must find employees whose availability and skills fit the job.

In the past decade, so many of us have realized that technology is not only the driving force in the economy, but important in managing our personal lives. Everyone now seems to be interconnected, which is paving the way for more flexible, custom-fit working arrangements.

An office used to be a building filled with employees, a cafeteria and a water cooler. Now, it could be an airplane seat, or a desk in a kitchen with a laptop and a modem. Before long, an office could be nothing more than a cell phone and a Blackberry.

The trick is to make new technologies work *for* us, rather than the other way around - to use innovations like telecommuting and tele-work to give employees more options and more control over their time, rather than less, and keep them satisfied on the job.

We are entering a brave new world. A global marketplace for goods and services is creating a single, global supply of labor. The interests of working people in *all* nations are more and more interrelated.

I believe these men and women are at the heart of what we are doing here in Brussels.

I know there will be a lot of talk about various programs and policies to help workers adapt to a changing workforce, but at the end of day, what we really need to offer is *hope* -

- *hope* to the unemployed by providing the education and training to help them find work or a whole new career;
- *hope* to those who lose a job or promotion due to race, gender or religious prejudice;
- *hope* to the disabled who deserve a shot at the mainstream; and
- *hope* to anyone overcoming obstacles to joining the workforce.

Certainly, workers themselves must take the initiative to shape up their marketable skills and find the right balance in their professional and personal lives. But government can be a tremendous catalyst to set the stage, show the way and clear the path.

That's why it's such an exciting time to be at the Department of Labor. Under President Bush and Secretary Chao, the department is focused as never before on workforce issues.

It's open season in Washington for new ideas on how to solve immediate problems and put the right tools in the toolbox for success in the years ahead.

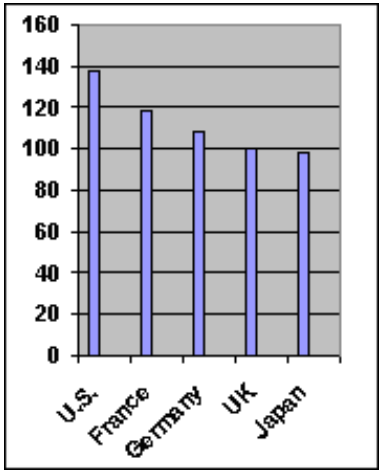
I know everyone here might define "success" in different ways, but I hope we can agree on one thing: No matter what path we take to get there, our shared goal for the 21st century workforce is a satisfying job for every man and woman who wants one.

Thanks for listening.

Mr.Clive Tucker, Chairperson of the Employment Committee of the European Union

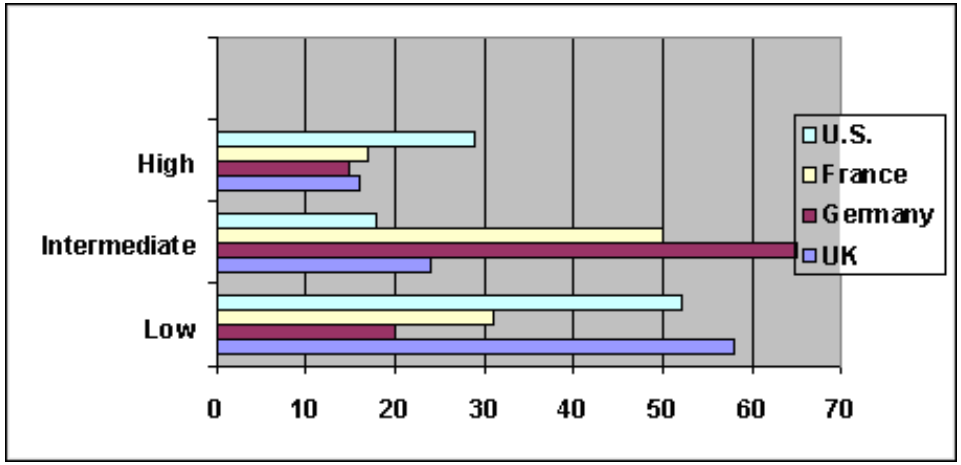
There is an important difference in the comparative performance of the US and EU in terms of employment growth and productivity.

Output per worker, 2000



Many factors can contribute to productivity improvements, including high levels of enterprise and innovation, high levels of domestic competition, high levels of capital investment, better management and a more highly skilled workforce. There is a well-established relationship between improvements in skills and increased productivity. Growth theory suggests that human capital is one of the prime determinants of labor productivity. Human capital is increased both by formal education and training and by learning-through-doing. Skilled workers can often adapt faster and more effectively to change and may be better at implementing new investments and innovation. They can thus increase the ability of a firm to update its practices and products and the rate demanded by rapidly changing markets, making the economy more flexible and more productive over the longer run.

Percentage of workforce by qualification level



The impact of skills on productivity also works partly through effects on capital investment levels. Evidence suggests that having highly skilled workers helps firms gain the full rewards of new investment and thus increases the likelihood that investment will occur. Research examining the causes of international productivity performance suggests that differing levels of skills play an important role. For example, estimates have been presented which suggest that between half and all of the UK productivity gap with Germany can be explained by skills differences. Plants with high productivity tend to have a higher proportion of skilled workers in their workforces. Differences in physical and human capital can explain around 60 per cent of the productivity gap between domestically owned firms and US-owned firms in the UK, and nearly all of the gap with other foreign-owned firms.

Research at the worker level finds that holding a tertiary qualification (e.g. a degree) in the UK increases productivity by between 30 and 100 per cent when compared to a worker with no qualifications. Holding an intermediate qualification at NVQ level 3 results in higher productivity of between 8 and 50 per cent when compared to productivity of an unqualified worker.

Turning to international comparisons of skills, although the UK has a large number of workers with high skills, it falls behind France and Germany in terms of intermediate skills, with a higher proportion of UK workers having low skills. More than a third of UK workers have low skills, compared to less than a fifth in Germany. It is difficult to be certain, but the UK may lag significantly behind the US as well as European countries in terms of immediate skills. It is important to recognise that the US data includes hardly any adult/workplace training due to the lack of recognised qualification structures, whereas UK data includes much of this training, as many people acquire nationally certified qualifications. Around 9 per cent of US workers cite long-term workplace training as their main source of skills, with a further 27 per cent citing moderate workplace training. This suggests that US skills might be substantially understated by the conventional data. Despite debates over some of the international evidence, some clear messages emerge from the data:

- The number of people in the UK with high skills compares well with international levels (although the UK still trails the world leader - the US);
- The level of intermediate skills in the UK is low, especially compared with Germany, other European countries and, under some interpretations, the US;
- There are a large number of people in the UK workforce with low skills. UK performance in terms of basic skills is very poor, as highlighted by the Moser Report. The International Adult Literacy Survey, for instance, found that over 20 per cent of the adult UK population lack functional literacy. Only Ireland and Poland of the thirteen countries surveyed fared worse.

The evidence also shows that the UK has fewer workers with vocational qualifications than its European competitors, and often provides young people with a less diverse academic education than does the US. There were important lessons to be learnt on both sides of the Atlantic from the data on skills and productivity. It is necessary to look behind the numbers, which oversimplify the differences between the European and US labor markets and look in detail at successes and failures on both sides.

Session 1: The knowledge based society and its implications for improving skills

Dr. Michael W. Horrigan

Labor markets in the 21st Century: A focus on skills

In its discussion of purpose, the abstract for this conference notes that ‘knowledge’ will be the ‘driving force’ shaping labor market needs for the 21st Century Economy. To create a focus for our discussion, the abstract further notes the importance of understanding the roles of “education, training, and skills as well as the need to promote occupational and geographical mobility of workers.”

This paper explores three issues related to the purpose of this conference using evidence from U.S. labor markets. The first examines the statistical evidence for United States’ labor markets that underlies the basic theme of this conference - namely, has

the well-documented trend toward hiring more-skilled workers in U.S. labor markets that began in the early 1980s continued as the economy entered the 21st Century?

Second, most discussions of the demand for skills in the labor market use educational attainment as a proxy for skill levels. While I do not depart from this tradition, I attempt to refine the discussion by examining the variability of the returns to educational attainment within each educational attainment category. I use a group decomposition approach to examine the role of gender, occupation, and potential experience as proxies for describing the nature of this heterogeneity within each educational attainment group. After controlling for gender, occupation, and potential experience, I find that the increased inequality in earnings that occurred between 1992 and 2000 was accompanied by an increased variability of earnings within each of the educational attainment groups. The human capital variables that are traditionally used to measure the skill/earnings relationship do not effectively capture the changes that occurred over the last decade.

After examining the recent trends in the returns to educational attainment and the variability of those returns within each educational category, I then turn to an examination of the prospects for the future using recently published Bureau of Labor Statistics' projections for occupational employment demand over the 2000-2010 period.

To lay the groundwork for these three themes, I first provide an overview of the concept of skills as it is used in this paper and provide a description of the data used to explore each of the three sections that follow:

Skills and education

The focus on education as an empirical proxy for skill levels, and the measurement of the returns to skills on the basis of the relative earnings of different educational attainment groups, reflects both the explanatory power of education in human-capital earnings models, as well as the limitations of existing U.S. cross-sectional data sets in measuring other dimensions or proxies for skill acquisition. For example, the data set used in this paper, the quarter-sample monthly earnings file from the Current Population Survey (CPS), does not collect routinely any measures of job training (formal or informal).

In contrast, there are some very significant longitudinal data sets, most notably the 1979 and the 1997 National Longitudinal Surveys of Youth (NLSY79 and NLSY97, respectively) that contain extensive information on both training and education. In addition, both surveys contain measures of skill levels through a series of tests known as the Armed Services Vocational Aptitude Battery. The NLSY97, an annual longitudinal survey that began in 1997, contains individuals who were 12-16 years of age on December 31, 1996. This survey is also collecting high-school transcript information (and intends to collect college-transcript information). This survey has tremendous potential to add to our understanding of the role of education, training, and skills on labor market returns as members of this cohort complete their education and enter the labor market.

For this study, however, I use the earnings file from the U.S. Current Population Survey, a nationally representative data set that provides a more complete picture of U.S. labor markets at the beginning of the 21st Century. The earnings file from the CPS is based on interviews with one-quarter of the monthly cross section (2 of the 8 rotation groups in the sample) and provides rich information on the demographic and socio-economic characteristics of individuals ages 16 and older in the U.S. population. While there is a relative loss in the level of detail in terms of information on training and other measures of skills, there remains an analytical benefit to the breadth of the CPS in terms of its information on the educational- and occupational-structure of earnings for the entire working population.

To focus on the workforce of the 21st Century, I examine full-time wage and salary workers, using usual weekly earnings as a measure of the returns to their human capital in the labor market. Throughout the paper, I compare 1992 to 2000, a period that roughly covers the latest U.S. recovery. I chose 1992 as the starting point because the CPS began collecting educational attainment data on degrees received (instead of years of school completed) in 1992.

The demand for more-skilled workers in U.S. labor markets at the turn of the Century.

The proposition that the demand for more-skilled workers is a 'driving' force underlying U.S. labor markets is perhaps without controversy. The extensive literature on trends in U.S. earnings inequality and earnings differentials between educational attainment groups since the early 1980s is well documented. However, to focus our discussion, it is useful to review the evidence as it pertains to the most recent period of economic expansion in the U.S. economy, and to document the extent to which this recent period has (or has not) continued the increase in the relative demand for more-skilled workers.

Table 1 provides median weekly earnings for full-time wage and salary workers in 2000 CPI-U dollars by educational attainment. Not surprisingly, those with less than a high school diploma lost ground in real terms over the 1992 to 2000 period. High school graduates experienced a gain of 3.5% in real earnings, while those with a bachelor degree and those with more advanced degrees experienced much more rapid gains (6.5% and 5.4%, respectively).

Most previous analyses of earnings inequality have used years of schooling completed as the proxy for educational attainment. The availability of data starting in 1992 on degrees received gives us insight into the potential impact of the acquisition of skills from attending community college. Those with some college, but without a degree saw a gain in real earnings of 3.1%. However, those with associate degrees, either on a vocational- or a traditional-educational track, experienced no real-earnings gains over the period as measured by real median weekly earnings.

Table 1. Percent change in real usual median weekly earnings in 2000 CPI-U dollars for full-time wage and salary workers, ages 16 and older, by educational attainment, 1992-2000.

Degree obtained	1992 level	2000 level	Percent change
Less than high school	$ 358.75	$ 337.92	- 5.8%
High school diploma	$ 464.65	$ 480.87	+ 3.5%
Some college, no degree	$ 517.51	$ 533.62	+ 3.1%
Associate degree, vocational	$ 590.01	$ 589.22	- 0.1%
Associate degree, educational	$ 616.08	$ 616.45	+ 0.1%
Bachelor degree	$ 749.01	$ 797.71	+ 6.5%
Advanced degree	$ 974.77	$ 1026.96	+ 5.4%

The same trends emerge (as expected) by comparing changes in relative earnings differentials between 1992 and 2000. Table 2 provides the evidence. In terms of educational attainment, using those with a high school diploma as the base group, those with a bachelor or an advanced degree gained substantially, while the differential between those with an associate degree and a high school diploma did not change over the period. Those with some college, but without a degree maintained their relative earnings differential over high school graduates.

Table 2. Ratios of real usual median weekly earnings in 2000 CPI-U dollars for full-time wage and salary workers, ages 16 and older, by educational attainment, 1992-2000.

Ratio of earnings by educational attainment to median earnings of high school graduates	1992	2000
Less than high school	0.77	0.70
High school	1.00	1.00
Some college, no degree	1.11	1.11
Associate degree,vocational	1.27	1.23
Associate degree, educational	1.33	1.28
Bachelor degree	1.61	1.66
Advanced degree	2.10	2.14

The evidence on real earnings serves as a proxy for the workings of the labor market. Although educational attainment is but one aspect of the forces that shape the demand and supply of workers, an examination of this worker characteristic by itself is very telling. In table 3, I provide the levels and percentage changes in the supply of workers by educational attainment

category from 1992 to 2000. One approach to inferring that there has been a continued increase in the relative demand for more-skilled workers is to observe rising relative real wages for higher education groups even in the face of increases in the supply of these workers that outpace supply increases for less-educated groups.

Consider the group holding bachelor degrees. Between 1992 and 2000, this group experienced a 6.5% increase in real wages, and the relative earnings differential between those holding a bachelor degree and those with a high school diploma increased from 1.61 to 1.66. At the same time, the employment of those with a bachelor degree increased by 33.6% compared to the modest 5% gain among high school graduates. Ceteris paribus, such a relative supply shift should lead to a decline in relative wages between these groups being compared, but the rising differential suggests an increase in the relative demand for these higher-skilled workers that outpaced the movements in relative supply. A comparison of those with some college (but without a formal associate degree) with high school graduates shows the same trend.

Viewed against changes in the supply of workers, the nearly flat trend in real earnings of those with an associate degree from Table 2 takes on a different perspective. The substantial increase in the employment of those with an associate degree in the educational track (52%) largely has been met by a sufficient demand response to maintain the value of real wages over the period. The same holds true for those with a vocational associate degree.

The preponderance of evidence suggests that the returns to skill as proxied by levels of educational attainment increasingly favor those with more rather than less educational attainment. However, what these data do not provide is any insight into the variability of earnings across- and within-educational attainment groups.

Heterogeneity in the returns to educational attainment: A focus on occupational employment.

Table 3. Percent change in employment of full-time wage and salary workers, ages 16 and older, by educational attainment, 1992-2000.

	1992 level	2000 level	Percent change
Degree obtained			
< high school	9,989,221	10,674,424	6.9%
High school diploma	30,667,477	32,213,426	5.0%
Some college, no degree	16,179,385	19,403,266	19.9%
Associate degree, vocational	3,492,089	4,587,904	31.4%
Associate degree, educational	2,759,600	4,189,340	51.8%
Bachelor degree	14,625,896	19,534,018	33.6%
Advanced degree	7,121,710	9,315,033	30.8%

One important dimension to understanding these trends in the returns to educational attainment is to examine how these returns vary by occupation. An examination of both the employment composition of and the returns to educational attainment within occupational groups provides useful insight into the labor market demand for skills.

There are a variety of approaches that can be adopted to examine how the returns to educational attainment vary by occupation. Two alternative approaches are adopted here. The first examines differences in the patterns of median earnings that emerge across classes of jobs where each class is a collection of occupations that are grouped together based on similarities in the percentages of occupational employment found in each educational attainment category.

While very instructive, this method does not provide a statistical summary measure of the degree to which the variability in the distribution of earnings can be explained by differences between and within groups of individuals based on their individual occupations and levels of educational attainment. The second method provides such a measure by using the Theil decomposition technique for estimating the contribution of between- and within-

Table 4. Occupational classification by percentages of employment in each educational attainment category

	High school diploma or less	Some college	Bachelor degree or more		10th	50th	90th
(Bachelor degree or more) occupations	**5.8%**	**16.6%**	**77.6%**		**$ 417.92**	**$ 831.34**	**$ 1,597.40**
Lawyers and Judges	0.4%	1.3%	98.3%		638.41	1314.78	2920.84
Health Diagnosing Occupations	1.2%	1.2%	97.6%		588.85	1279.34	2924.88
Teachers, Colleges and University	0.4%	3.7%	95.9%		418.17	939.12	1759.68
Natural Scientists	2.8%	4.6%	92.6%		465.30	912.94	1786.06
Teachers, except College and University	4.9%	8.8%	86.4%		347.93	710.65	1252.44
Engineers	5.1%	19.3%	75.7%		607.17	1103.16	1775.89
Other Professional Specialty Occupations	10.8%	18.9%	70.3%		351.11	698.38	1366.28
Mathematical and Computer Scientists	7.0%	23.4%	69.6%		570.25	992.18	1770.93
Health Assessment and Treating Occupations	4.1%	34.8%	61.1%		454.36	800.16	1310.16
(Bachelor degree or more/some college) occupations	**16.8%**	**29.6%**	**53.5%**		**$ 419.98**	**$ 763.76**	**$ 1,531.92**
Administrators and officials, Public Administration	17.8%	28.2%	54.1%		450.57	866.27	1,523.13
Management Related occupations	17.4%	29.1%	53.5%		416.73	746.54	1,502.02
Technicians, except Health, Engineering and Science	14.5%	32.3%	53.2%		420.01	809.00	1,572.86
(Bachelor degree or more/some college/high school diploma or less) occupations	**25.6%**	**31.2%**	**43.1%**		**$ 361.52**	**$ 764.52**	**$ 1,760.18**
Engineering and Science Technicians	28.4%	50.4%	21.2%		378.27	679.34	1,173.91
Sales Representatives, Finance, and Business Services	20.5%	29.2%	50.3%		314.57	737.77	1,895.06
Sales Representatives, Commodities, Except Retail	24.3%	30.9%	44.8%		383.29	768.13	1,636.31
Construction Trades	69.8%	25.8%	4.4%		310.93	595.81	1,077.45
Motor Vehicle Operators	69.3%	25.5%	5.1%		290.30	542.33	982.78
Other Precision Production Occupations	65.3%	27.2%	7.5%		303.45	594.72	1,081.07
Health Service Occupations	61.0%	32.9%	6.1%		225.32	342.13	581.39
Forestry and Fishing Occupations	60.3%	27.6%	12.1%		216.02	491.89	950.73

group variations in earnings to explaining total variation, where each individual is assigned to a group based on their educational attainment and choice of occupation (as well as by gender and years of potential labor market experience).

The occupational classification used in both methods is based on the detailed occupational classification scheme from the CPS. There are 45-detailed occupations that are shown in table 4. These occupations have been grouped according to a 5-tier schema based on the distribution of employment in three different educational categories: high school diploma or less, some college (including associate degree), and a bachelor degree or higher. An

Table 5. Earnings of workers by job classification and educational attainment at the 10th, 50th and 90th percentile of the weekly earnings distribution

Classification of jobs	Educational attainment group	10th	50th	90th
(High school diploma or less)	All workers	$ 243.53	$ 426.11	$ 888.61
(Some college/high school diploma or less)	All workers	$ 270.08	$ 482.95	$ 915.01
(Bachelor degree or more/some college)	All workers	$ 419.98	$ 763.76	$1,531.92
(Bachelor degree or more/some college/high school diploma or less)	All workers	$ 361.52	$ 764.52	$1,760.18
(Bachelor degree or more)	All workers	$ 417.92	$ 831.34	$1,597.40
(High school diploma or less)	High school diploma or less	$ 237.75	$ 405.15	$ 823.18
(Some college/high school diploma or less)	High school diploma or less	$ 250.50	$ 436.02	$ 820.10
(Bachelor degree or more/some college)	High school diploma or less	$ 343.21	$ 611.73	$1,088.41
(Bachelor degree or more/some college/high school diploma or less)	High school diploma or less	$ 294.51	$ 583.56	$1,141.85
(Bachelor degree or more)	High school diploma or less	$ 246.90	$ 550.68	$1,102.59
(High school diploma or less)	Some college	$ 266.59	$ 499.53	$ 988.96
(Some college/high school diploma or less)	Some college	$ 284.53	$ 498.28	$ 913.91
(Bachelor degree or more/some college)	Some college	$ 382.10	$ 642.69	$1,201.86
(Bachelor degree or more/some college/high school diploma or less)	Some college	$ 399.84	$ 676.92	$1,371.44
(Bachelor degree or more)	Some college	$ 313.50	$ 697.52	$1,220.13
(High school diploma or less)	Bachelor degree or more	$ 282.94	$ 556.26	$1,149.33
(Some college/high school diploma or less)	Bachelor degree or more	$ 315.33	$ 605.08	$1,194.29
(Bachelor degree or more/some college)	Bachelor degree or more	$ 522.59	$ 930.08	$1,843.10
(Bachelor degree or more/some college/high school diploma or less)	Bachelor degree or more	$ 501.79	$1,047.38	$2,200.53
(Bachelor degree or more)	Bachelor degree or more	$ 485.12	$ 882.53	$1,725.34
All jobs	All workers	$ 279.32	$ 575.88	$1,266.18
All jobs	Bachelor degree or more	$ 429.38	$ 869.73	$1,837.20
All jobs	Some college	$ 290.66	$ 560.61	$1,089.33
All jobs	High school diploma or less	$ 246.18	$ 436.34	$ 881.07

occupation is classified as a predominantly (high-school diploma or less) occupation if more than 60% of employment is in this occupational category.

Similarly, an occupation is defined as (some college) if 60% or more of the employment in the occupation has an education

attainment level of some college (with or without an associate degree). An occupation will be defined as (bachelor degree or more) if 60% of the employment in the occupation consists of individuals with a bachelor degree or an advanced degree. There are three mixture occupations that are classified according to the educational attainment categories having at least 20% and no more than 60% of the employment in an occupation. The three mixture occupations are the (bachelor degree or more/some college) mixture occupations, the (some college/high school diploma or less) occupations, and the (bachelor degree or more/some college/high school diploma or less) occupations.

This division, while based on reasonable criteria, is arbitrary nonetheless. Some jobs are easily classified in terms of a college path, such as the group of occupations at the beginning of table 4. The jobs at the bottom of Table 4--classified as (high school diploma or less) occupations-are based on having over 60% of employment in the occupation being in the high school diploma or less educational attainment category. These occupations are ones associated with on-the-job training and few formal educational requirements beyond secondary school.

However, the large number of mixture occupations, having significant percentages of employment from each of the educational attainment categories, are much more difficult to describe as ‘requiring a college education’ or ‘only requiring a high school diploma’. This difficulty is testimony to the variety of pathways that individuals can take to obtain employment in a variety of occupations. Computer-equipment operators are a prime example that comes to mind, with the assortment of training courses, community college, and 4-year colleges that provide background training in this occupation.

Table 4 shows a rising trend in median earnings across the classes of occupations as the average level of educational attainment increases for each class of occupations. The group of occupations classified in the (high school diploma or less) category has median earnings of $426.11 as compared to the median earnings of $831.34 for jobs classified as (bachelor degree or more) occupations. There is a significant jump between the jobs classified as (high school diploma or less) or (high school diploma or less/some college) occupations and the jobs classified as (bachelor degree or more), (bachelor degree or more/some college), or (bachelor degree or more/some college/high school diploma or less) occupations. This trend seems to follow the general observation that there is a continuing higher relative demand for workers with higher levels of skills.

However, this raises the natural question of how does a member of an educational attainment group fare when he/she is in an occupation that is classified as having an average educational attainment category that is higher than his or her own level of education? For example, the median weekly earnings for those with an educational attainment of high school diploma or less were $436.34 in 2000. A member of this group who is working in an occupation classified as (bachelor degree or more) earned $550.68 in 2000 (see table 5). In contrast, a college graduate who is working in an occupation classified as (high school diploma or less) earned $556.26 in 2000 as compared to the median earnings for all college graduates of $869.73. As well, a worker in the some-college educational group earned $697.52 in occupations classified as (college) as compared to the $560.61 median earnings for all members of the some-college educational attainment group.

Table 5 also shows the heterogeneity present in the returns to mixture occupations. A worker with an educational attainment of high school diploma or less who is in a (bachelor degree or more/some college/high school diploma or less) occupation earns 34% more than the median earnings for all workers with a high school diploma or less. In fact, the mixture occupations (bachelor degree or more/some college) and (bachelor degree or more/some college/high school diploma or less) provide median earnings opportunities for members of each educational attainment group that outpace the median earnings for all of their educational counterparts.

The general lesson to be drawn from this analysis is that while the general trend favouring more skilled workers continues, there is enormous heterogeneity in the returns to both educational attainment and choice of occupation. This exercise is instructive, but it does not provide a summary statistical measure of the degree to which we can explain the variability of earnings in terms of differences between groups that are classified or grouped on the basis of both their educational attainment and their occupation.

Explaining the variability of earnings by educational attainment and occupation: The Theil decomposition technique

In this section I examine the degree to which the variability in the earnings of full-time wage and salary workers can be explained

by knowledge of each individual's level of educational attainment and detailed occupation. I also control for differences attributable to gender and years of potential labor market experience. I use the Theil inequality statistic, which allows decomposition of the total variability of earnings into two summary terms-one that measures the sum of differences between each group mean and the overall mean of earnings (in log form), and the second that measures the total variation within each group-where the groups are defined so as to be mutually exclusive and exhaustive.

Table 6 provides the results. The grouping used includes the 45 detailed occupations

Table 6. Results of the Theil group[1] decomposition approach

				Percentage of total variation explained by:	
Year	**Overall Theil**	**Between group differences**	**Within group variation**	**Between group differences**	**Within group variation**
1992	.179418	.087865	.091552	49.0%	51.0%
2000	.210080	.097921	.112159	46.6%	53.4%

[1]Forty-five detailed occupational, four potential experience, two gender, and seven educational attainment groups (for a total of 2,520 groups) are used in this table. Occupations are based on the 1992 and 2000 CPS occupational classification system. The potential experience groups are 0-9 years, 10-19 years, 20-29 years, and 30-39 years. Potential experience is defined as (age – years of schooling completed – 6). The educational attainment groups are less than high school, high school graduate, some college but no degree, associate degree – vocational, associate degree-educational, bachelor degree, and advanced degree.

discussed above. Each of these groups is further divided by gender, 4 potential experience groups, and 7 educational attainment groups. Theil decomposition statistics are calculated for 1992 and for 2000. In 1992, these detailed groups helped explain 49% of the total variability in earnings in terms of the contribution of the sum of differences between each group and the overall mean. From 1992 to 2000, the overall Theil statistic increased suggesting that overall earnings inequality increased over the period. At the same time, between-group differences now only explain 47% of total earnings variability. In other words, as overall inequality increased, so too did total within-group variability.

In the context of examining the demand for skills for the 21st Century workforce, the importance of this finding is to add a note of caution to our interpretation of the general results that there has been a continuing shift in the relative demand for more skilled workers. While this trend is clear, it is also the case that there remains a substantial amount that we cannot explain about the variability of earnings. Often termed unmeasured heterogeneity, the variation in earnings within each educational attainment/ occupation/gender/potential experience category means that receiving a degree and choosing the 'right' occupation is not a complete guarantee of success in the labor market.

In truth, some of the unmeasured heterogeneity in these results could be explained by a fuller specification of the human capital variables in the Theil definition of groups. However, the general finding in the literature is that there is no set of currently measurable characteristics that will increase the explanatory power of between-group differences to a level that is much higher than what has been found in this exercise. There are some potentially key measures that are not captured by the CPS, such as training or an independent test-based assessment of skills. However, there will always be a large degree of unexplained variation

within groups that remains owing to characteristics such as motivation, as well as the process of self selection by which individuals choose different education and occupational career paths.

Prospects for the future: BLS occupational employment projections 2000-2010

Every two years, the U.S. Bureau of Labor Statistics publishes ten-year long-term projections of the U.S. economy, including projections of occupational employment. The latest round of projections was released in November 2001 for the 2000-2010 period. The material in this section of this paper is based on these results and on the analysis that appeared in the November 2001 Monthly Labor Review article on occupational employment projections. Some of the material is taken directly from the article without direct attribution.

As mentioned previously, the occupational employment projections are largely based on data from the Occupational Employment Statistics (OES) Survey, an establishment survey with 400,000 sampled units per year. The OES does not collect information on individual characteristics such as educational attainment, gender, or potential experience (among others) as in the CPS. The OES data are supplemented by data from the CPS in order to include estimates for private household workers and the self-employed. Due to sample size differences, the level of occupational detail in the OES is far greater than in the CPS. Any discussion of the demand for skills in the context of the underlying educational attainment distribution of occupations requires that comparisons between the OES and the CPS surveys be at a more aggregate level of detail in the CPS (for example, the 45 detailed occupations considered in earlier sections of this paper).

Under usual circumstances it is possible to use the projected occupational employment trends based on OES data to examine the changing demand for skills as measured by educational attainment using the more aggregated CPS occupational codes. However, the OES is currently on the 1998 Standard Occupational Classification System, and the CPS will not convert to this system until 2003. For the purposes of this discussion, I will present projected trends as they relate to the OES-based projections data, and relate them in a heuristic manner to the demand for more skilled workers.

Total employment is projected by BLS to increase by 22.2 million jobs from 2000 to 2010, an

Table 7. Employment by major occupational group, 2000 and projected 2010

[Numbers in thousands of jobs]

Occupational Group	Employment				Change	
	Number		Percent distribution		Number	Percent
	2000	2010	2000	2010		
Total, all occupations*	145,594	167,754	100.0	100.0	22,160	15.2
Management, business and financial occupations	15,519	17,635	10.7	10.5	2,115	13.6
Professional and related occupations	26,758	33,709	18.4	20.1	6,952	26.0
Service occupations	26,075	31,163	17.9	18.6	5,088	19.5
Sales and related occupations	15,513	17,365	10.7	10.4	1,852	11.9
Office and administrative support occupations	23,882	26,053	16.4	15.5	2,171	9.1
Farming, fishing, and forestry occupations	1,429	1,480	1.0	0.9	51	3.6
Construction and extraction occupations	7,451	8,439	5.1	5.0	989	13.3
Installation, maintenance and repair occupations	5,820	6,482	4.0	3.9	662	11.4
Production occupations	13,060	13,811	9.0	8.2	750	5.7
Transportation and material moving occupations	10,088	11,618	6.9	6.9	1,530	15.2

* Numbers in tables do not necessarily add to totals due to rounding

increase of about 15 percent. Table 7 shows how these projections are distributed based on the major occupational categories.

The two largest major occupational groups, professional and related occupations and service occupations, are projected to increase the fastest and to add the most jobs of any occupational categories over the period. In general, these two categories are at opposite ends of the earnings and educational attainment spectrum, and are expected to account for more than half of the employment growth from 2000 to 2010.

The three slowest growing occupations are expected to be office and administrative support; production; and farming, fishing and forestry occupations. Each of these occupations is expected to grow by less than 10 percent as compared to the overall expected growth of 15 percent. Administrative support occupations correspond to the category of “Other administrative support occupations, including clerical”, which in table 5 is classified as a ‘some college/high school’ occupation. The other two occupations have corresponding categories found in the ‘high school’ occupation list.

Employment in transportation and material moving occupations, corresponding to a similar category in table 5 in the (high school diploma or less) occupation list, is projected to grow as fast as overall employment. Occupations that will grow slightly less than the average 15 percent include management, business and financial occupations (bachelor degree or more/some college); construction and extraction occupations (high school diploma or less); sales and related (bachelor degree or more/some college/

high school diploma or less) and (some college/high school diploma or less); and installation, repair and maintenance occupations (some college/high school diploma or less) and (high school diploma or less) occupations.

Professional and related occupations. Employment in professional and related occupations is projected to grow faster and add more workers (7 million) than any other major occupational group. Three industries, business services; education-public and private; and health services, will account for about 60% of this growth (data on industry composition of occupational employment growth not shown). The remainder of services, which includes legal, engineering and management, and social services, will account for another 20% of the growth.

Almost 75 percent of the job growth for professional and related occupations is projected for three particular detailed occupational subgroups - computer and mathematical occupations; health care and technical occupations; and education, training, and library occupations. Computer and mathematical occupations are projected to add the most jobs, 2 million, and grow the fastest among the 8 detailed professional and related occupation groups. Overall, three out of five new jobs for computer and mathematical occupations are projected to be in the rapidly growing business services industries-primarily in computer and data processing services.

Table 8. Employment in professional and related occupations, by major occupational subgroup, 2000 and projected 2010

[Numbers in thousands of jobs]

Occupational Group	Employment				Change	
	Number		Percent distribution		Number	Percent
	2000	2010	2000	2010		
Total, professional and related occupations*	26,758	33,709	100%	100%	6,952	26.0%
Computer and mathematical occupations	2,993	4,988	11%	15%	1,996	66.7%
Architecture and engineering occupations	2,605	2,930	10%	9%	325	12.5%
Life, physical, and social science occupations	1,164	1,386	4%	4%	223	19.1%
Community and social services occupations	1,869	2,398	7%	7%	529	28.3%
Legal occupations	1,119	1,335	4%	4%	216	19.3%
Education, training, and library occupations	8,260	9,831	31%	29%	1,571	19.0%
Arts, design, entertainment, sports and media occupations	2,371	2,864	9%	8%	493	20.8%
Healthcare practitioners and technical occupations	6,379	7,978	24%	24%	1,599	25.1%

* Numbers in tables do not necessarily add to totals due to rounding

Table 9. Employment in service occupations, by major occupational subgroup, 2000 and projected 2010

[Numbers in thousands of jobs]

Occupational Group	Employment				Change	
	Number		Percent distribution		Number	Percent
	2000	2010	2000	2010		
Total, service occupations*	26,075	31,163	100%	100%	5,088	19.5%
Healthcare support occupations	3,196	4,264	12%	14%	1,067	33.4%
Protective service occupations	3,087	3,896	12%	13%	809	26.2%
Food preparation and serving related occupations	10,140	11,717	39%	38%	1,577	15.6%
Building and grounds cleaning and maintenance occupations	5,549	6,328	21%	20%	779	14.0%
Personal care and service occupations	4,103	4,959	16%	16%	856	20.9%

* Numbers in tables do not necessarily add to totals due to rounding

Health care practitioners and technical occupations are projected to add 1.6 million jobs over the 2000-2010 period, with 75 percent of this job growth in the health services industry. Education, training and library occupations are also projected to add 1.6 million jobs. Four of five new jobs in this occupational category are projected for public and private educational services. Among these occupations, social services will have the fastest growth from its 2000 level at 36 percent (not shown in table).

Legal occupations are projected to add 216,000 jobs. Paralegals and legal assistants are expected to grow the fastest, while lawyers should add the most jobs.

Architecture and engineering jobs are projected to increase by 325,000, or 12.5 percent, the slowest growth among the eight professional and related occupations. Life, physical and social scientists are expected to add 223,000 jobs, or 19.1 percent growth.

Service occupations. They are expected to add 5 million jobs over the 2000-2010 period, the second largest numerical gain of the major occupational groups. More than one half of the growth in service occupations is projected to be in the services industry-primarily in the health, business and social services. About 30 percent of new service occupation jobs will be in retail trade, primarily in eating and drinking establishments.

Within the 5 major subgroups making up service occupations, food preparation and serving related occupations are projected to add the most jobs, about 1.6 million. Healthcare support occupations are projected to add 1.1 million jobs, while protective services are projected to add over 800,000 jobs. This latter estimate is certainly an underestimate, given the changes that have occurred since the tragic events of September 11, 2001.

Personal care and service occupations are projected to add over 850,000 jobs, while building and grounds cleaning and maintenance occupations are projected to add about 780,000 jobs.

The remaining major occupational groups can be seen in tables 10-16. Employment in management, business and financial occupations is projected to increase by 2.1 million, but only grow by 13.6 percent. Nearly 25% of employment gains will be in business services industries. About 354,000 new jobs are projected for the rapidly growing engineering and management services and 238,000 for finance, insurance, and real estate.

Employment in office and administrative support occupations is projected to increase by 2.2 million, but only grow by 9.1 percent. In nearly all industries, employment of workers in these occupations is projected to grow slower than overall employment due to

continued trends in office automation and electronic communications.

Farming, fishing, and forestry occupations are projected to grow by only 50,000 over the 2000-2010 period. BLS projects that self-employed individuals in these occupations will decline by 9.1 percent.

The construction and extraction occupations are projected to add 989,000 jobs, a 13.3 percent increase. Not surprisingly, a high percentage (60%) of new jobs are projected for the construction industry, but the fastest growth of jobs in these occupations will be in business services (58%), which should account for 10% of new jobs. A decline of 18,000 is projected for the mining industry-mainly for extraction workers.

Installation, maintenance, and repair occupations are projected to add 662,000 new jobs with only an 11.4% percentage change. Approximately 1 new job in 5 in these occupations are projected for the automotive repair, services, and parking industry. Most growth, however, is projected to occur over a wide range of industries.

Production occupations are projected to add about 750,000 jobs, with only a 5.7% increase. In 2000, nearly 3 of 4 production workers were employed in manufacturing industries, but only a quarter of new jobs in these occupations are projected for this industry. More than half of new jobs are projected for the business services industry.

Transportation and material moving occupations are projected to add 1.5 million jobs, with a percentage change of 15.2, about the same as the overall economy. More than 1 of 3 new jobs in this occupational category will be in the transportation and public utilities industry, while 30% of new jobs will be in the business services industry. Water transportation occupations are projected to grow slowly, while railroad occupations will continue their long-term decline.

Conclusions

This article has examined three issues related to the theme of this conference. First, I find that the strong relative preference in U. S. labor markets for higher-skilled workers continued over the most recent recovery and expansionary period in the U.S. economy. Second, while U.S. labor markets continue to differentially reward, on average, those with greater levels of educational attainment, there is substantial and increasing heterogeneity in these returns. One significant measurable aspect that underlies the variability of earnings is the distribution of occupations and educational attainment. These variables, along with gender and years of potential experience, explained 49% of the total variation in earnings in 1992 and 47% in 2000. There remains substantial variability in individual earnings, however, that we cannot explain, a variability that has grown--as has overall earnings inequality--over the 1992-2000 period.

Finally, the BLS projections for occupational employment for the 2000-2010 period were examined. The largest- and fastest-growing occupations are projected to be in the professional and related group, occupations that tend to have higher average levels of educational attainment. At the same time, the second- largest and also second-fastest growing occupations are projected to be in the services group, which tend to have lower average levels of educational attainment.

In the end, the evidence points to an economy that is increasingly skill based, with a widening gap between different skill groups. At the same time, the widening variability in earnings suggests that beyond one's decision on educational attainment and choice of occupation, there are other significant, difficult to measure characteristics--such as motivation--that are key to determining one's actual labor market success.

Table 10. Employment in management, business and financial occupations, by major occupational subgroup, 2000 and projected 2010

[Numbers in thousands of jobs]

Occupational Group	Employment				Change
	Number		Percent distribution		Number
	2000	2010	2000	2010	
Total, management, business, and financial occupations*	15,519	17,635	100%	100%	2,115
Management occupations	10,564	11,834	68.1%	67.1%	1,270
Business and financial operations occupations	4,956	5,801	31.9%	32.9%	845

* Numbers in tables do not necessarily add to totals due to rounding

Table 11. Employment in office and administrative support occupations, by major occupational subgroup, 2000 and projected 2010

[Numbers in thousands of jobs]

Occupational Group	Employment				Change	
	Number		Percent distribution		Number	Percent
	2000	2010	2000	2010		
Total, office and administrative support*	23,882	26,053	100%	100%	2,171	9.1%
First-line supervisors/managers of office and administrative support workers	1,392	1,522	6%	6%	130	9.4%
Communication equipment operators	339	273	1%	%	-65	-19.3%
Financial, information, and record clerks	9,006	10,178	38%	39%	1,172	13.0%
Material recording, scheduling, dispatching, and distributing occupations	4,238	4,579	18%	18%	341	8.1%
Secretaries, administrative assistants, and other office support occupations	8,908	9,500	37%	36%	592	6.6%

* Numbers in tables do not necessarily add to totals due to rounding

Table 12. Employment in farming, fishing, and forestry occupations, by major occupational subgroup, 2000 and projected 2010

[Numbers in thousands of jobs]

Occupational Group	Employment				Change
	Number		Percent distribution		Number
	2000	2010	2000	2010	
Total, farming, fishing, and forestry occupations*	1,429	1,480	100%	100%	51
First-line supervisors/managers/contractors of farming, fishing, and forestry workers	100	113	7%	8%	13
Agricultural workers	987	1,024	69%	69%	37
Fishers and fishing vessel operators	53	46	4%	3%	-6
Forest, conservation, and logging workers	90	88	6%	6%	-2
All other farming, fishing, and forestry workers	199	209	14%	14%	10

* Numbers in tables do not necessarily add to totals due to rounding

Table 13. Employment in the construction and extraction occupations, by major occupational subgroup, 2000 and projected 2010

[Numbers in thousands of jobs]

Occupational Group	Employment				Change
	Number		Percent distribution		Number
	2000	2010	2000	2010	
Total, construction and extraction occupations*	7,451	8,439	100%	100%	989
First-line supervisors/managers of construction trades and extraction workers	792	923	11%	11%	131
Construction trades and related workers	6,466	7,328	87%	87%	862
Extraction workers	193	189	3%	2%	-4

* Numbers in tables do not necessarily add to totals due to rounding

Table 14. Employment in the installation, maintenance, and repair occupations, by major occupational subgroup, 2000 and projected 2010

[Numbers in thousands of jobs]

Occupational Group	Employment				Change
	Number		Percent distribution		Number
	2000	2010	2000	2010	
Total, installation, maintenance, and repair occupations*	5,820	6,482	100%	100%	662
First-line supervisors/managers of mechanics, installers, and repairers	442	513	8%	8%	71
Electrical and electronic equipment mechanics, installers, and repairers	683	726	12%	11%	43
Vehicle and mobile equipment mechanics, installers, and repairers	1,931	2,218	33%	34%	286
Other installation, maintenance, and repair occupations	2,764	3,026	47%	47%	262

* Numbers in tables do not necessarily add to totals due to rounding

Table 15. Employment in production occupations, by major occupational subgroup, 2000 and projected 2010

[Numbers in thousands of jobs]

Occupational Group	Employment				Change	
	Number		Percent distribution		Number	Percent
	2000	2010	2000	2010		
Total, Production occupations*	13,060	13,811	100%	100%	750	5.7%
First-line supervisors/managers of production and operating workers	819	827	6%	6%	9	1.0%
Assemblers and fabricators	2,653	2,824	20%	20%	171	6.5%
Food processing occupations	760	783	6%	6%	23	3.0%
Metal workers and plastic workers	2,907	3,156	22%	23%	249	8.6%
Plant and system operators	368	384	3%	3%	16	4.4%
Printing occupations	534	543	4%	4%	8	1.6%
Textile, apparel and furnishing occupations	1,317	1,285	10%	9%	-32	-2.4%
Woodworkers	409	446	3%	3%	37	9.0%
Other production occupations	3,293	3,563	25%	26%	269	8.2%

* Numbers in tables do not necessarily add to totals due to rounding

Table 16. Employment in transportation and material moving occupations, by major occupational subgroup, 2000 and projected 2010

[Numbers in thousands of jobs]

Occupational Group	Employment				Change	
	Number		Percent distribution		Number	Percent
	2000	2010	2000	2010		
Total, Transportation and material moving occupations*	10,088	11,618	100%	100%	1,530	15.2%
Supervisors, transportation and material moving workers	357	427	4%	4%	70	19.7%
Air transportation occupations	166	186	2%	2%	20	12.2%
Motor vehicle operators	4,237	4,982	42%	43%	745	17.6%
Rail transportation occupations	115	94	1%	1%	-21	-18.5%
Water transportation occupations	70	74	1%	1%	3	4.4%
Related transportation occupations	309	341	3%	3%	32	10.4%
Material moving occupations	4,833	5,514	48%	47%	681	14.1%

* Numbers in tables do not necessarily add to totals due to rounding

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Discussion

Mr. Randall L. Johnson, Director, Legislative Affairs, Motorola, Inc.

Michael Horrigan's presentation regarding the demand for educated workers in a knowledge-based society was developed and presented in a highly effective manner. It is clear that he is extremely gifted in his profession, and it is my intent to respond from the perspective of a high-technology employer rather than analyze his methodology and findings.

Prior to assuming my current role with Motorola, I served as a leader in strategizing and developing our employee benefits programs. Part of that role required that I review the reports of our health care vendor partners; in doing so, I would ask three questions:

- What…do the data show?
- So what…difference does it make, are the trends, is the relevance, etc.?
- What now…is the action we should be taking?

Mr. Horrigan has already articulated what the data show, and I will not repeat that.

So what difference does it make to Motorola? Motorola has experienced a dearth of highly qualified software engineers. First, at one time, we have had up to 3,000 open engineer positions that we could not fill. Second, we have been one of the largest users of H-1B visas in the United States. Third, we have found it necessary to make increased use of the flexible work force that Shelley Hymes discussed in her opening remarks.

What now?

First, our education programs need to be enhanced. In the United States we have recently passed the “No Child Left Behind” legislation, which is a huge step in improving our education system. It will increase the emphasis on ensuring that each child in the United States is provided a quality education with standards established, and teachers and school districts held accountable for those standards in an atmosphere of what we call a “six sigma quality” focus on continual improvement in quality. Schools will be recognized for their achievements and face the consequences if they don’t improve to meet the standards. There will be an increased emphasis on teachers teaching in the subject areas in which they have attained an academic major, and steps will be taken to especially increase the number of math and science teachers.

Second, Barbara Clark, one of Motorola’s leaders in integrating education and the work force has advised me that the following skills must be emphasized and improved if we are to be successful as employers:

- Communication skills. The ability to read, write and listen. This is especially important in a the diverse work force of companies such as Motorola
- Computation skills. The ability to learn to think. Employees must be able to disaggregate in their thought processes, and to think logically.
- Critical thinking and problem solving. My wife, who is a third grade teacher, informs me that this is emphasized in early grade school in her district.
- Individual and teamwork skills. A person must learn to take individual responsibility to work as a team member. Individuals will continue to be asked to work as team members in the future.
- Knowledge about a specific job.
- Systems thinking skills. The ability to think about entire systems in which one works…such as accounting systems, government systems, educations systems, health care systems, etc., and the interdependence of them.
- Technological skill. The ability to understand technology and its continued role in our society.
- Resource management. The ability to manage money, time, people and material.

Third, we must have a cross-fertilization of cultures and thoughts. With a diverse work force, we will have strengthened education and skill sets. By allowing, and encouraging, the movement of people from culture to culture, country to country, we will better serve our publics. Motorola must have such diversification in our thinking processes and education if we are to compete in a global economy.

Fourth, and this may sound “too far out”; we must change our mindset about work. Too often, work is seen as drudgery. “Thank goodness, it’s Friday!” Work is often seen as something to be minimized.

In reality, however, work can be one of the most rewarding aspects of our lives. If one is provided excellence in education, enters a vocation in which she is “gifted” and has a “passion” for what she does, and is provided with competent leadership, work can be very fulfilling. So, we must find ways to match education, skill sets, gifts, abilities, and passion to available positions to maximize the opportunities for a successful work force. When we do that, people will want to continue their learning and enhancing their skills throughout their lives.

Finally, I would merely close by quoting one of Michael Horrigan’s summary statements. “Beyond one’s decision on educational attainment and choice of occupation, there are other significant, difficult to measure characteristics, such as motivation, that are key to determining one’s actual labor market success.”

We concur. We have found that there are other intangibles such as “passion” or “fire in the gut” that are just as key to success as the school from which one graduates or one’s grade point average.

Mr. Jerry Zellhoefer, European Representative, AFL-CIO

In introducing this intervention, it would be useful to recall the Director General’s opening comments on the need for strong social partners to help face the challenges before us and the Deputy Under Secretary’s remarks that, in dealing with this subject, it is important to reach out to the business, labor and academic communities.

With that in mind, it would be useful to reflect on some points made by the Trade Union Advisory Committee (TUAC) to an OECD International Conference on Adult Learning Policy, last December in Seoul, Korea. In recent years, trade unions, realizing the problems that a lack of skills and competencies mean for their members, now seek to foster wider access to learning. They have continually argued the case that there is a need for individual entitlements to access foundation levels of learning skills, and for employers to be given obligations and incentives to provide such opportunities.

Trade unions negotiate training agreements with employers, raise their members’ awareness of learning, mentor their members and help to broker the provision of education and training with colleges and universities. An important issue on the trade union agenda is how to prevent employers from creating low-end jobs instead of relatively well-paid, skilled jobs. This is at the heart of the discussion of “high road” versus “low road”. The high road is characterized by the expansion of relatively well-paid, skilled jobs, particularly in the middle of the employment structure and the low road by the expansion of low-skill, low-wage jobs.

What may help close off the low road approach is the fact that organizational innovation and the skilling of workers are increasingly considered as key factors in company competitiveness and continuing training has become seen as an area in which the interests of employers and workers can converge. Although it is now widely recognized that lifelong learning has a central role to play in the knowledge economy, there has been slow progress so far in making it really happen.

For the US and the EU, the experience in most OECD countries contain some useful lessons, including training participation is significantly higher for those in employment than for the unemployed. In almost all countries, less educated workers are significantly less likely to be trained. Companies that are unionized train more than non-union companies. Workers on temporary contracts and in part-time jobs - most of whom are women - are significantly less likely to receive training.

In general, findings also suggest that schooling and training are complementary, therefore policies to strengthen schooling can also encourage further training. Against this background is the point that employers and unions should negotiate agreements including with levels of government and providers of education that make participation in lifelong learning feasible in practice. According to a recent study by the International Labor Office (ILO), the influence of bargaining is greatest in those countries where the continuing training system is based on agreements between employers’ organizations and trade unions, which have a high degree of joint responsibility in the regulation and management of training and are strongly linked to sectoral collective bargaining.

In the United States, the AFL-CIO participated along with employers, educators and the government in developing a “Blueprint for Improving Workers’ Ability to Thrive in the New Economy”. The 1999 report titled “Skills for a New Century: A Blueprint for Lifelong Learning” underscored that “the challenge was too large and too complex to be met by any single stakeholder. Partnerships must include students, workers, employers, unions, educators and government and occur at all levels.”

The 1999 Blueprint set out four key workforce learning goals: delivering education, training and learning that are tied to high standards, lead to useful credentials and meet labor market needs. Secondly, improving access to financial resources for lifelong learning for all Americans, including those in low-wage jobs. Thirdly, promoting learning at a time and place and in a manner that meets workers’ needs and interests, i.e. family friendly learning opportunities and, fourthly, increasing awareness and motivation to participate in education, training and learning.

Another focal point in recent years, especially for the OECD countries is the Internet in the “new” and other segments of the economy. The Internet is like a huge wave poised to crash against our shores. It is not only a major cultural force; it has emerged as a powerful engine of economic change. Employers, employees and, yes, labor unions, will need to learn how to ride this wave, or risk being submerged by it in the coming decades.

Unions, rather than opposing the Internet, are embracing it as a means to help working families obtain a greater voice in the global economy. They employ the Internet to enhance membership communications, do outreach, coordinate internal activities, conduct research, mobilize for political and organizing campaigns, and deliver training. The AFL-CIO, most major labor unions, and numerous local labor bodies operating their own web-sites. In December 1999, the AFL-CIO launched its “Workingfamilies.com” initiative, offering low-cost Internet services to active and retired union members, potentially reaching 17 million households.

The growth in information technology (IT) jobs and worker earnings reflect a tightening of IT labor markets. IT industry leaders have responded in two ways. First, claiming a severe “shortage” of IT workers, they successfully lobbied Congress to raise the cap on H1-B visas, which regulates the number of foreign, high-skilled workers U.S. firms are allowed to employ, on limited-time basis. Second, many IT firms employ large numbers of skilled U.S. workers on a contingent basis, many working alongside and doing work comparable to that of permanent employees on a year-round basis (“perma-temps”). For example, of Microsoft’s approximately 6,000 “temporary” workers - roughly 1/5 of its Seattle workforce - more than 20 percent are “perma-temps.”

While both approaches supposedly are aimed at filling short-term skill shortages, neither addresses the long-term labor force needs of the Internet economy. More important, they appear designed to apply downward pressure on labor cost. For large numbers of workers, IT employers are freed from providing pension, health insurance, stock options, and other benefits offered to regular employees. Not only is this unfair to U.S. workers, it sends a distorting signal to labor markets. It also creates disincentives for industry investment in attracting, recruiting, educating and training a domestic pool of IT workers.

In this highly volatile environment, governments and businesses are mostly concerned about obtaining an adequate supply of skilled workers. Unions and their members are worried about maintaining secure incomes, getting and keeping current the skills needed to get good jobs, developing career mobility, obtaining health care and family benefits, and providing for retirement. All therefore have a stake in revamping the U.S.’s poorly managed “pipeline” for skilled workers.

We need substantial public and private investments to help workers make the transition to the new economy. Along with income supports and job search assistance, we need new training initiatives to equip workers with the skills they need to obtain the newly created IT jobs. Unions have taken the lead in such efforts. In 1996, the Communication Workers of America (CWA), representing 630,000 workers in the IT-producing industries, joined AT&T, Lucent Technologies and the International Brotherhood of Electrical Workers in forming the “The Alliance”, a joint training trust which annually trains over 23,000 employees. CWA has also joined with Cisco Systems to provide hands-on-training for IT workers in sites around the nation.

We need to replicate the successful efforts of unions and employers, often government aided, to form regional and sectoral partnerships aimed at addressing workforce needs while promoting business objectives. in several different industry sectors.

Government, businesses, labor and communities must join together to help underrepresented groups - especially in low income and rural communities - overcome entry barriers into the IT labor markets. The AFL-CIO strongly supports government policies to ensure fair, affordable universal access to information technology and services. But bridging the “digital divide” between information “haves” and “have nots” requires more than putting computers and the Internet into schools and libraries, or even into people’s homes. It is equally essential that we give adults the skills they need to use information technology and compete for good jobs in the Internet economy. Achieving this goal, in the end, may be our most difficult and important challenge.

The AFL-CIO also has concerns about the future of low-wage employment. New technologies and innovations have and will continue to transform the economy and reshape jobs and the workplace. But this is only a partial view of the future. Receiving less publicity is the point that whenever major innovations take hold, income gains typically go to the better-educated workers who can quickly master the new techniques and technologies.

The truth is that low-wage employment is not going away in the 21st Century and that many of the ordinary, humdrum, low-skill, low-paid activities of the past will continue on as before in the years to come. In some places, low-wage employment may actually be leading gains in employment.

There were roughly 33.7 million low-wage jobs in the U.S. in 1998, roughly one in every four. These are jobs in occupations with median annual earnings that pay $ 16,800 or less a year. They are above the minimum wage, but just at the level it would take to lift a 4-person family out of poverty. By the year 2008, estimates are that there might be as many as 38.5 million such jobs, a 14% increase.

Most of the occupations are in the service sector, beginning with retail workers and cashiers. There is some agricultural, forestry and fishing work represented by farm workers, other related jobs and some production workers engaged in meat, poultry and fish cutting and trimming and cannery workers. A number of low-wage jobs are involved in the textile and garment industries, including such jobs as working at sewing machines and pressing machine operators and tenders.

About 14% of American workers are union members. The only fast-growing but low-wage occupations with higher union membership are teacher assistants and hand packers and packagers. Nursing aides, orderlies and attendants have 12% union membership, guards 13%. The other fast growing occupations have less union representation, most under 5%. The benefits of union membership will not be extended to many workers who need improved pay, benefits and working conditions unless union density is increased in these select occupations.

The importance of union membership for low-income workers can be seen by comparing the weekly earnings of union versus nonunion workers. Union cashiers, for example, may earn half again as much as nonunion cashiers. Union janitors may earn 60+ percent more than nonunion people doing the same work.

The above does not include the higher benefit levels that union members would probably have under a union contract such as, importantly, health insurance and provision for pension for example.

But are we really ready for the global, high-tech challenges of the new century? And will our new economy, which has been so slow to generate real economic gains for most of us, finally come around to meeting the needs of all working families? Such questions may best be answered by those who hold our nation's future in their hands - the young people who are just now embarking on their work lives. And so we asked them, in a nationwide survey of workers between the ages of 18 and 34 commissioned by the AFL-CIO.

These young workers are willing to do their part to meet the changing demands of today's economy. They are optimistic and confident, committed to working hard and upgrading their skills. They know lifetime jobs are a thing of the past, but they are hopeful that what the new economy lacks in security it will make up for in opportunities for advancement.

Unfortunately, young workers do not see employers meeting their end of the deal. Instead of fulfilling the prized American promise of upward mobility, they see employers failing to share the rewards for success with all who helped to create it. Corporations show too much concern for the bottom line and not enough for employees, they say, and employers fall short when it comes to sharing profits and investing in workers.

This helps explain why young workers are not particularly impressed with the nation's current economic performance. They think the media has lost sight of what makes for a good economy. The true measures, they say, are not the stock market or corporate earnings. Rather, they are living standards and the availability of good jobs-and from where young workers are standing, it looks as though the new economy is creating mainly low-paying jobs that do not offer the health care and retirement security they need.

Young workers believe education is a key tool for survival in the new economy. But for all the talk about the importance of knowledge in the global economy, higher education remains largely unobtainable: Fully three-quarters of young workers today do

not have college degrees. And young workers see fundamental inequities that education alone will not solve. They think it's time for new rules to hold corporations to a higher standard in the way they treat their employees. They support policy changes to protect good jobs and help them meet the needs of their families, such as requiring employers to provide basic health and pension benefits, strengthening equal pay laws for women, expanding the Family and Medical Leave Act.

Increasingly, they see another way to make the new economy more fairly distribute the wealth, and that is by joining together with their co-workers in unions. Today, 54 percent of young workers say they would vote to form a union, up from 47 percent just three years ago. And today's unions are changing and mobilizing to meet the new challenges, fighting for higher pay and rewards for good work, standing up for equal pay for women and people of color and improving access to education and health care and retirement security for all working families.

If working families are to thrive and prosper in the new economy, one of our priorities as a nation must be to restore the basic American freedom to choose to form a union.

Building career ladders is also a key strategy. Unions historically have spearheaded or supported programs that help workers advance their skills and careers through apprenticeship programs, community-based skills centers and creation of career ladders. Creating a career ladder also requires an employer willing to generate jobs with advancement potential and to think about developing the company's workforce. Yet, many companies have downsized their labor force and outsourced work that once provided steppingstones to more advanced jobs, and employers are ill-prepared to offer nontraditional ladders to the growing number of women and minority workers. Some industries, such as printing and metalworking, are dominated by small firms with few internal career advancement opportunities and without clear career structures, workers may find changing jobs among firms makes it difficult to advance.

At the same time, workers face many barriers when seeking to continue their education-including parenting responsibilities, financial costs, child care arrangements, lack of transportation and scarcity of time. Without paid time off and financial support for advanced education, workers may well find the next rung of the career ladder out of reach.

Unfortunately, a reduction in funding for important training programs is planned. Despite the sharp increase in unemployment and economic hardship over the last year, the Administration's budget makes significant cuts in critical worker training programs. Overall discretionary spending for these programs will be cut by 9%.

Additionally, the Administration has not effectively addressed the management of state and local block grants, which has led to an estimated $ 1.3 billion in carry-in into FY 2003. This carry-in will be used in place of increased funding for these programs, with the result being that those already denied service must wait alongside the newly unemployed for the meager resources the budget offers. Some states have questioned the accuracy of the Administration's carry-in estimates, which could mean even fewer resources available to help workers during the next fiscal year.

Adult training currently funded at $ 950 million, the Administration budget would cut 5% or $ 50 million below 2002 appropriated levels. The result of this cut could be to deny services to at least 18.000 new participants, including many who have left welfare and are seeking help to enter or stay in the labor market.

Session 2: Occupational and geographical mobility of the workforce in the 21st century

Mr. Géry Coomans

On external and internal labour mobility in the EU and U.S.

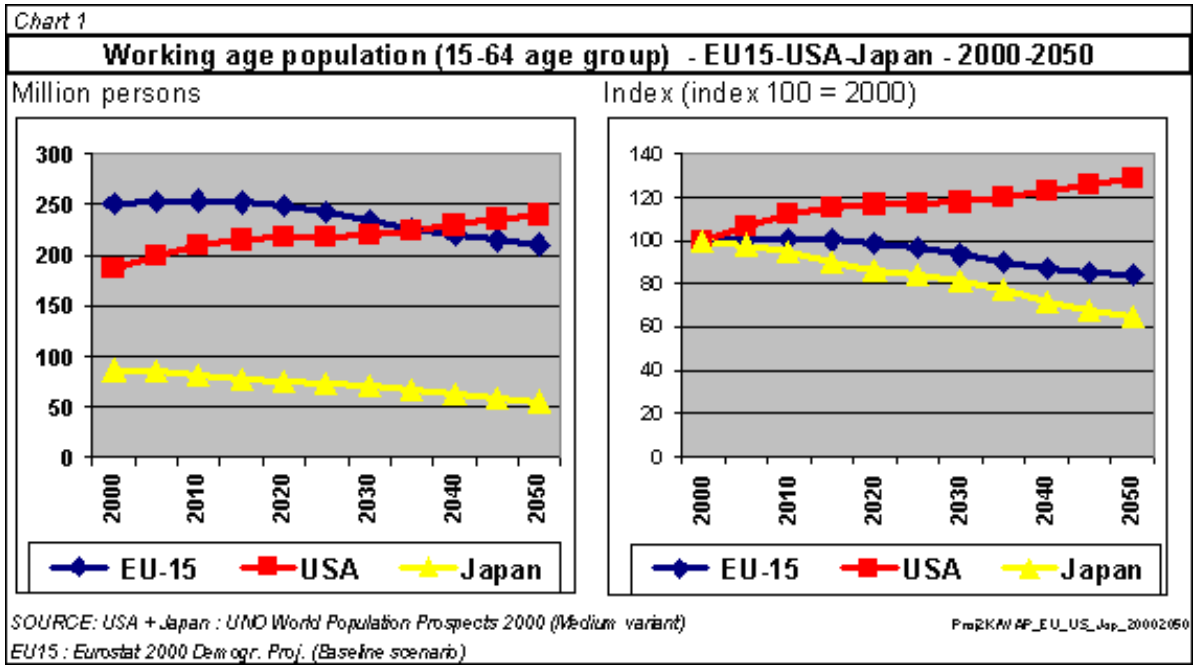
The question of labour mobility is currently considered within the EU from three points of view. First, there is a desire, on political grounds, to have the European population taking full possession of their territory, in order to favour the formation of an European identity. Second, based simply on law, any European citizen should have equal access to jobs anywhere in the Union without being discriminated. In this respect, a full portability of his political and social security rights should be guaranteed.

Whatever important, and even self-sufficient, these first two arguments are, this paper will concentrate on the third argument: the labour market efficiency. First, we need to remember that "market efficiency" applied to the "labour market" cannot be defined, if at all, in the same way as for commodity markets or capital markets. When applying it to labour, we should limit ourselves to consider that efficiency is just about all the measures, at whatever level, that one might think of for "improving the situation", i.e. reducing the bottlenecks or, for example, maximising the revenue or minimising the cost - depending on the point of view. This totally open content derives from the fact that the "market" itself is metaphorical when applied to "labour". Therefore, we will only be looking at some specific aspects, namely geographical and job mobility on the external side of the labour market, as opposed to the internal side of the labour market, i.e. within the organisations and the work process.

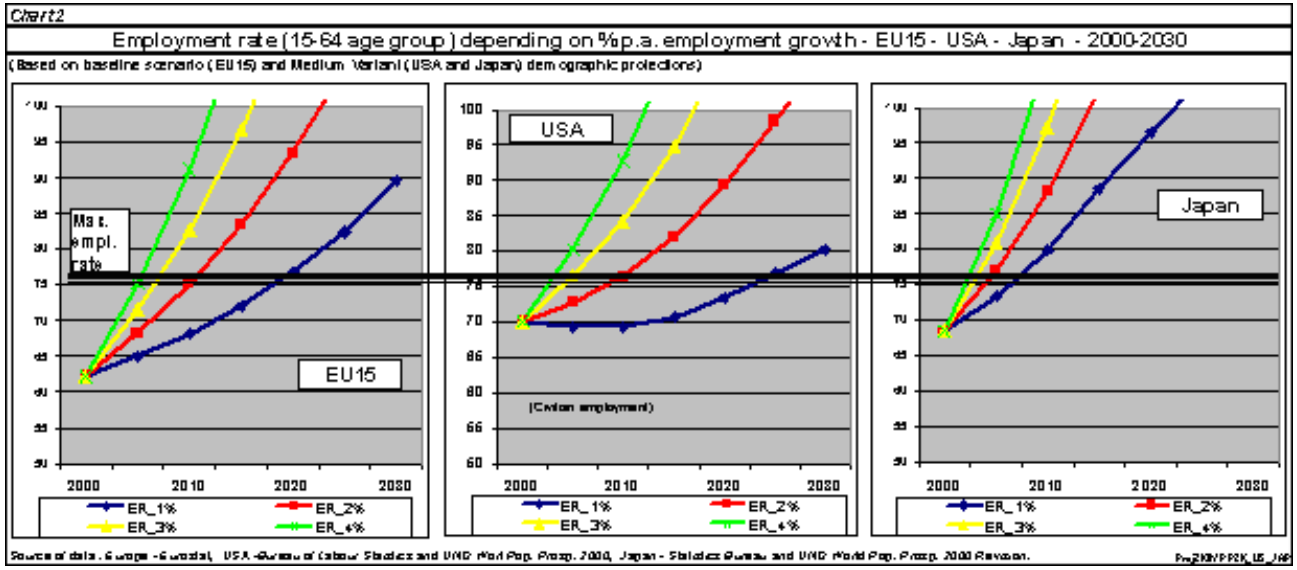
A. Geographical mobility

A.1. Global labour supply

The concern with geographical mobility within the EU, in the recent years, has emerged from the increasing awareness of the regional imbalances in the frame of the demographic downturn of the labour force. At one end, Denmark as a whole has not only a very high employment rate (76 % in 2000 for the 15-64 age group) that leaves hardly any unused labour capacity, but also a stable working age population - index 101.4 in 2008-2010 (100 in 2000), projected down to index 100.6 in 2020. Therefore, Denmark can hardly afford any growth in overall employment over the next two decades. At the other end, we have for example Ireland, where on one hand the employment rate is starting from a lower level (64.5 % in 2000) and where on the other hand the size of the working age population is projected to grow further (index 111 in 2010, index 115 in 2020). Therefore, Ireland, with a 1 % growth p.a. in employment, would reach an employment rate of 72.1 % by 2010. But Ireland, notwithstanding the most favourable demography in EU15, could not do much better: with 2 % p.a. growth in employment over the next decade, it would push the Irish employment rate above 80 %, i.e. above the reasonable limits. With 1 % and 2 % p.a. growth in overall employment, the EU15 would reach in 2010 an employment rate of 68 and 75 % respectively, starting from 63 % in the year 2000. Just with 1 %, it would reach the limit before 2020. The USA, starting in 2000 with a (civil) employment rate slightly above 70 %, would reach the



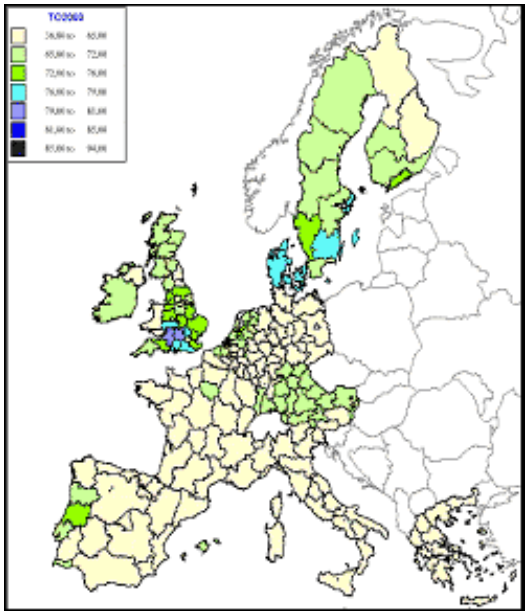
limit by 2025. Japan, facing a 30 % decrease of its working age population over the next half century, should also face a continuous decrease of employment. (See chart 1 and 2). This tells fairly enough how the European labour market faces prospects that are even tighter than they are in the US. This soon forthcoming labour scarcity in Europe will be adding pressure to improve drastically the productivity of a scarce resource. In the USA, the labour availability would be higher, unless the southern immigration was systematically used to widen the margins.

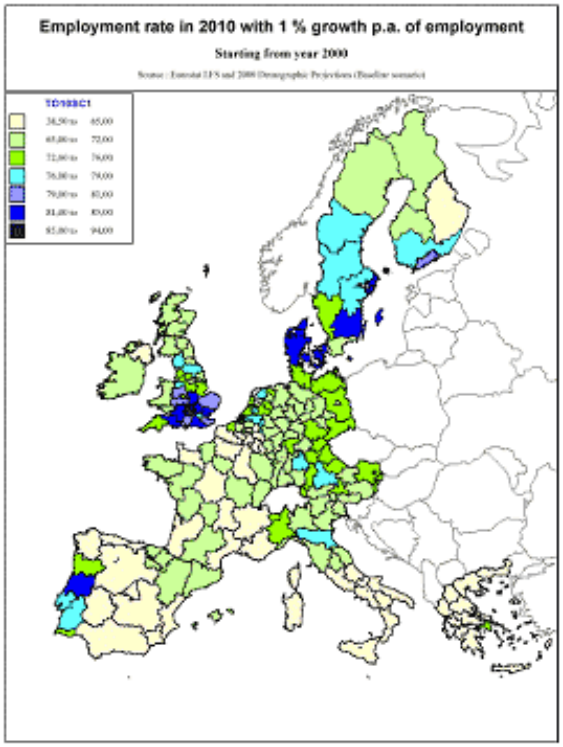


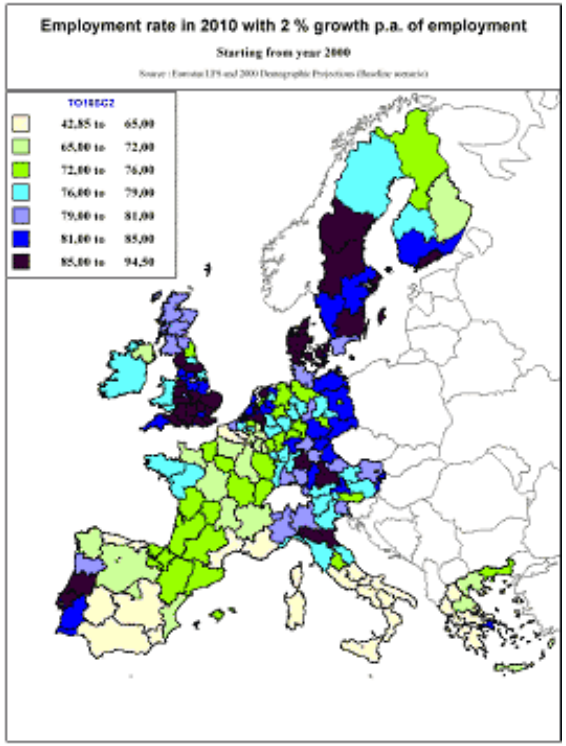
Maps 1-2-3 show the picture at regional level for EU15 and for the EU-pre-accession countries, with the same scenarios of 1 % and 2 % p.a. growth in overall employment. On one hand, in the Nordic Member States, in UK and in Portugal, 1 % over the present decade would be sufficient to determine a clear labour scarcity, because they are starting from high employment rates. On

the other hand, southern Germany and northern Italy are starting from lower employment rates, but are to face dramatic decreases in the working age population. Therefore, even a moderate 1 % p.a. growth in employment would be enough to generalise the labour scarcity. In the 2 % p.a. scenario for the next decade, only (most of) French regions and north-eastern Spanish regions would keep in the area of 72-76 % employment rates, close to the maximum level, and only southern Spain and southern Italy would lag below a 65 % level in employment rates.

Maps 1-2-3







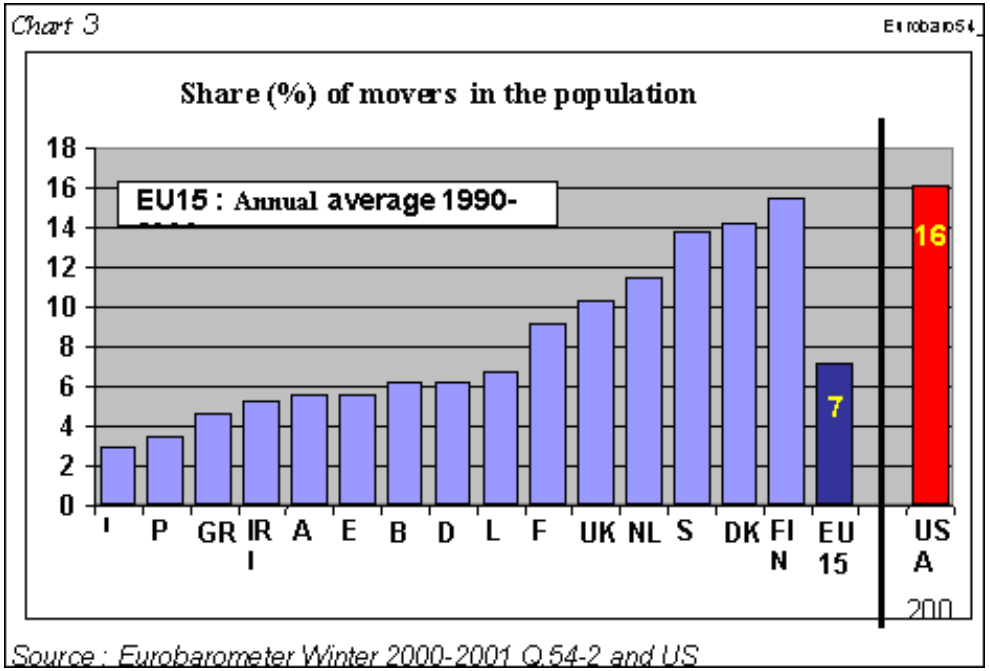
It tells also where the reserve pool is in the EU - not to mention qualification and ageing characteristics: out of an estimated "unused labour capacity" close to 20 millions in 2010, in the scenario of 1% p.a. growth in employment and considering a

maximum employment rate close of 75 %, one eighth would be in the most western regions of Germany, one quarter in France (north, Paris region and south-east), a third quarter in southern Italy, and the last quarter in (mostly southern) Spain. Another 6 million, under the same 1 % scenario, would be available in 8 pre-accession countries (Estonia, Czech Republic, Hungary, Latvia, Poland, Slovenia and Slovakia), of which 2/3rd in Poland, plus another 1.5 million in Bulgaria and Romania, besides additional reserves that would emerge from sectoral re-allocation.

A.2. Forms of geographical mobility

A.2.1. Residential mobility: a statement

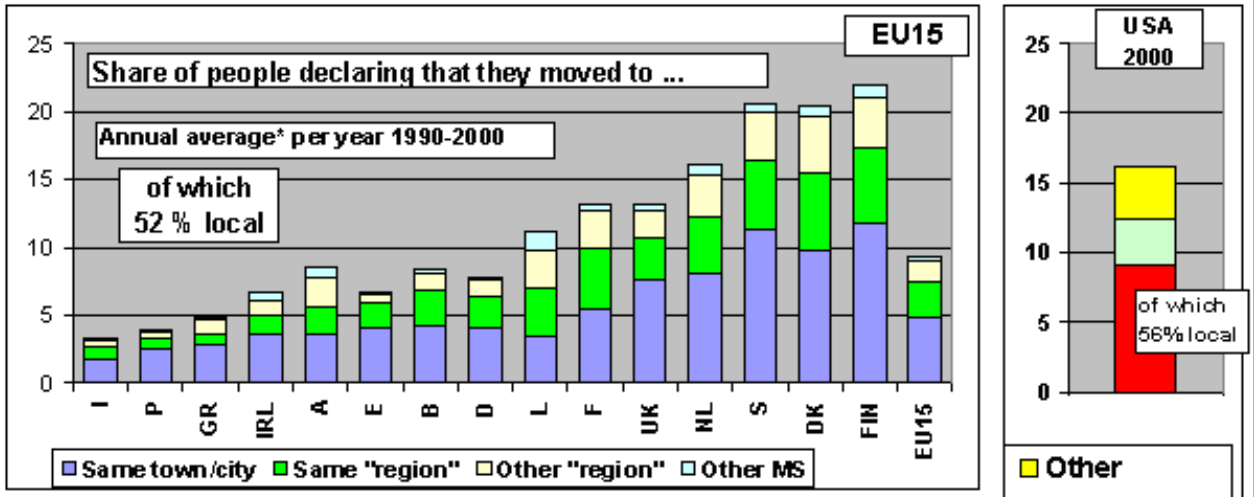
The geographical mobility, in terms of "moving house", seems to lie in EU15 at half the level in the USA, with 7.2 % of people involved in the year against 16.1 % (see Chart 3). Within EU15, a wide variety appears. The extended family area, i.e. the Mediterranean countries plus Ireland, show much lower figures compared to the Nordic states, that are much closer to the US figure.



Looking at the moving distance, there is a common pattern: slightly above half of the moves are local: 52 % of moving Europeans move in the same town, city or village, and 56 % of moving Americans do so in the same county (Chart 4). A second dimension that should be taken into account is related to the age structure: young people are notoriously the most mobile. Although based on different methodologies, the age profile illustrated by Chart 5 suggest that the young mobility is rather more driven by studying motives in the age group 15-19 for the EU than it is the case for the USA, where the drop in mobility rates becomes significant only above the age of 30. For the EU15, it is reasonable to consider that with the fast decreasing number of young people would rather depress the overall mobility rate.

Chart 4

Moving distance - EU15 and USA - 2000



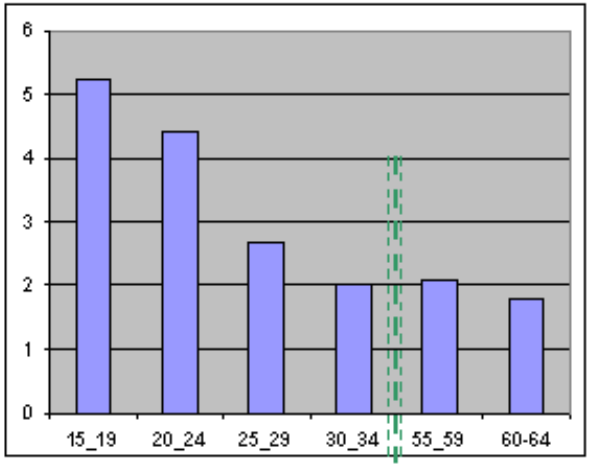
* Total makes more than in chart , because some people moved more than once and to different distances over the 10-year period. The annual average is given by dividing the 10-year value by 10.
"Region" is not further defined, and left to the appraisal of interviewees.
Source : Eurobarometer 54-2; US Census 2000.

Eurobar54_2_mar_r&rult

Chart 5

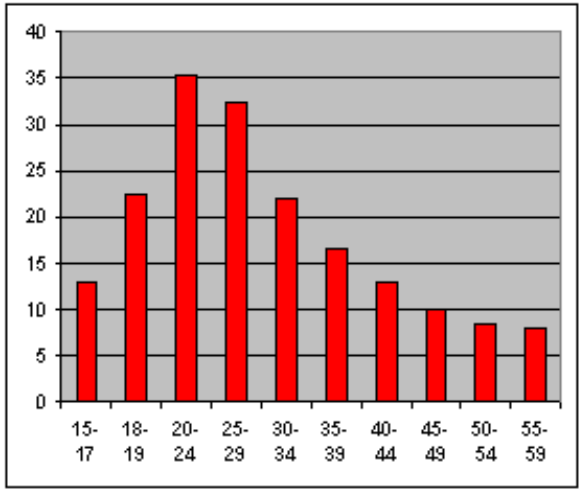
Net 5-year residential inter-regional mobility rate per age - EU15 - 1994-1999 *

Expressed as % of of the number of people in the age-group



Average of Nuts 2 regions in (1994-99) A, B, D, E, I, NL, PT, UK and (1993-98) F, EL.
Source of data : Eurostat

Share of people moving in the year per age USA - 2000



Source : US Census 2000

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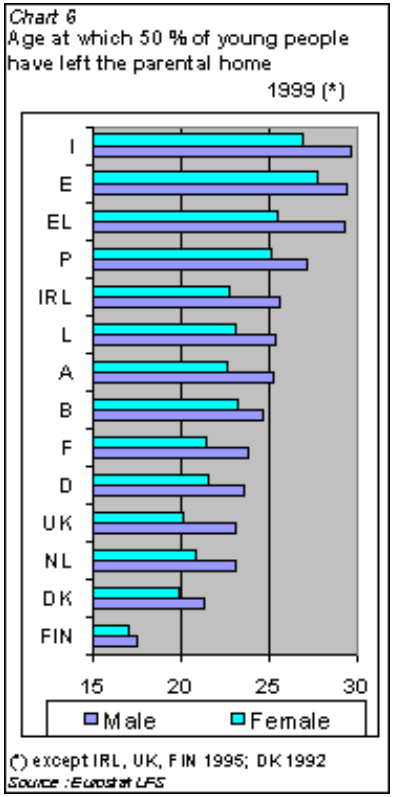
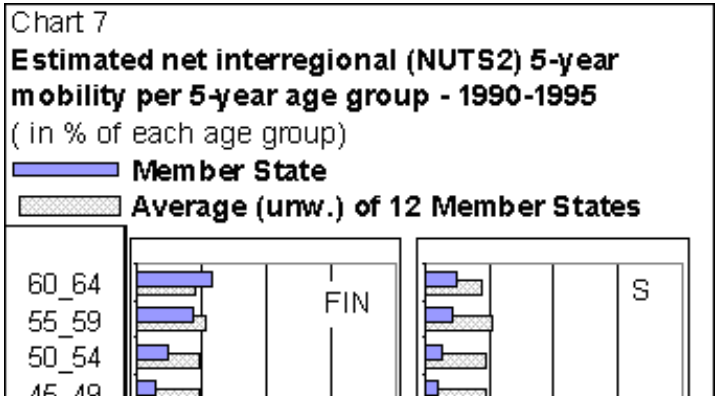


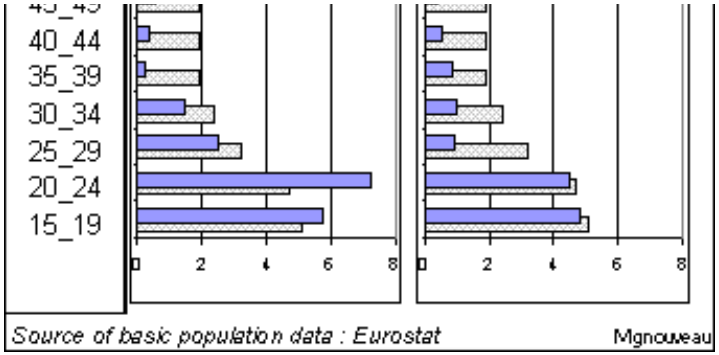
When considering the European diversity, it is obvious that the mobility patterns are of different kinds. Three models seem relevant:

a. The Nordic model has high mobility rates. It has certainly much to do with the early leave of young people from the parental home, as is common with traditional matrilineal system that is prevailing in these countries. Chart 6 shows that the ages at which half of the young people leave lies below 20 or close to 20 in Finland and Denmark, with little differences between males and females. Chart 7 shows how mobility concentrates much more on young people in Finland and Sweden, compared to the EU average. Close to half of the overall mobility seems to involve the capital regions. A link should also be made with the individual-based social rights.

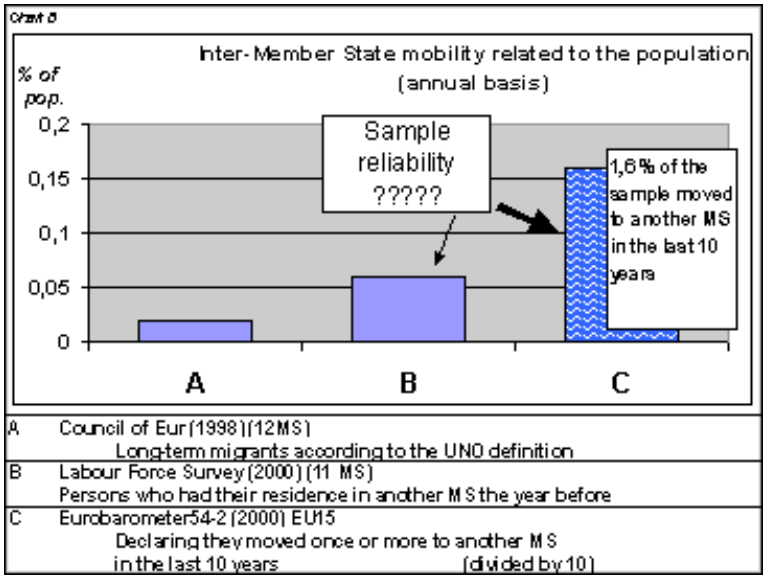


b. The “simple nuclear family” model prevails in the Netherlands, UK and France, with relatively high levels of mobility. A link should be made with the family-derived system of social rights. In the case of UK and certainly France, the state centralism and some degree of urban macro-cephalic is certainly adding to the mobility involving the capital region. The region “Ile-de-France”, for example, makes one fifth of the French population, but involves two fifths of the national inter-regional mobility.

c. A third group of countries shows lower figures of mobility. On one hand, we have the cases of Germany and Belgium are certainly to be related to their typical polycentric occupation of the territory, combined with family-derived social rights and relatively closed labour markets with more lifelong-like jobs. Austria is certainly a



more specific case, combining macro-cephalic of the capital region, strong tracks of matrilineal behaviour keeping the youngster later at the parental home, and the highest share of lifelong-like jobs that make the people less mobile. On the other, there is the group currently referred as the "extended family area" that should rather be named the "prolonged family area". It comprises most typically Italy, Spain, Greece, and also Portugal and Ireland. The remarkable thing is that it is confirming with time its characteristics: in Italy for example, the median age at which half the young men have left the parental home has shifted, between 1992 and 1999, from 28.2 years to 29.7, and from 25.1 to 27 years for young women. Levels and changes are hardly lower in Spain and Greece. And this, combined with the traditional localism, and a job system that owes much to the family network, id obviously discouraging mobility. Furthermore, this model reveals more and more its perverse effects, linked to the increasing privatisation of the cost of childhood versus the public mutualisation of the cost of the aged. By all means, the internal mobility in Italy represents certainly the strongest example of resistance to economic theory. In no other country are the regional disparities so high, here between north and south, and more irrelevant the argument that would make differential in unemployment feed the migratory moves. Instead, we have the northern regions showing an employment level close to 60 %, or the EU15 average, while the southern regions, according to Eurostat, go on showing employment rates in the area of 40%.



Whether these self-confirming behaviours are to define some cultural dimension is an open question. It would by all means be interesting to have a closer look at the extent to which these "cultural behaviours" could still be tracked in the USA depending on the national lineage.

On the whole, if we face the difficult task of estimating the global level of inter-Member States mobility, in terms of flow, we must remain very cautious. The data given by the Council of Europe, by the Labour Force Survey and by the Euro barometer are far from appearing similar, in terms of definition and of reliability, and henceforth in terms of levels attained. Chart 8 compares the three results, but the conclusion must remain vague: the number of EU15 nationals that are moving from one Member State to another, on an annual basis, should not exceed by much a quarter of a million people. With half of the EU15-nationals in other Member States having a job, this would mean that the intra-EU inter-Member State mobility would imply something between 1 and 2 per 1.000 jobholders. The very clear point in this is that this level is very far from reaching the critical mass that would imply any significant contribution to the labour market efficiency. Even if any policy would bring it to five times its current level, it would still involve below 1 in every 100 jobs.

A.2.2. Changes over time

There is little doubt that the mobility within the 15 Member States has gone down significantly between on one hand the post-war decades and on the other the last two decades.

Tab.1

EU-nationals in other Member States - Some past figures

(x 1,000 persons)

Nationals from	Host countries							
	France(*)		Germany		UK		Belgium	
	Year	(x1000)	Year	(x1000)	Year	(x1000)	Year	(x1000)
Italy	1968	572	1970	574			1970	250
	1990	253			1980	84		
	2000	203	2000	616	2000	97	2000	200
Spain	1968	607	1970	246	1980	28	1971	68
	1990	216						
	2000	154	2000	130	2000	47	2000	46
Portugal	1968	296	1970	54	1980	20	1971	7
	1982	767						
	1990	650						
	2000	529	2000	133	2000	33	2000	26
Greece	1990	6	1970	343	1980	15	1971	22
	2000	4	2000	364	2000	26	2000	18
Ireland			1970	1	1980	639		
			2000	16	2000	412		
France			1970	47	1980	37	1971	87
			2000	107	2000	86	2000	107

Source : Council of Europe, Recent demographic developments in Europe, ver.ann.
except France year 2000 : Eurostat LFS

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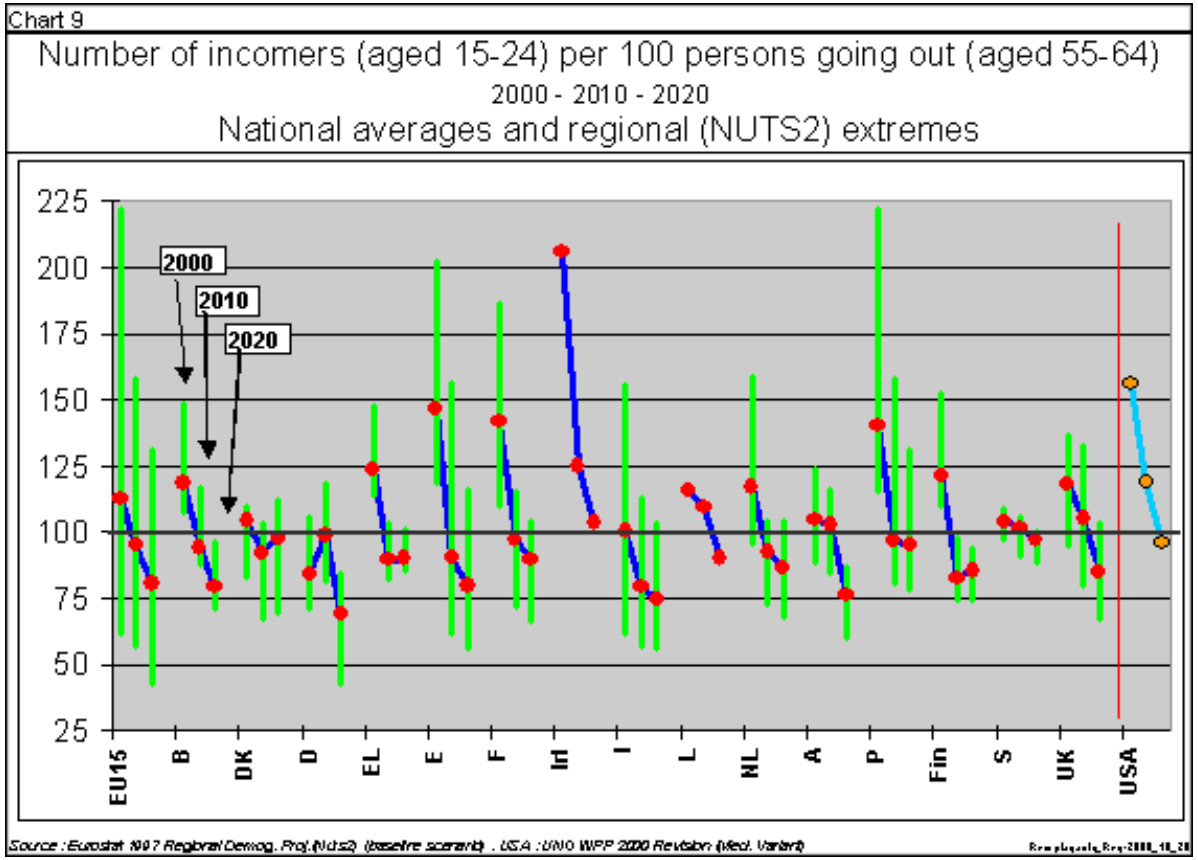
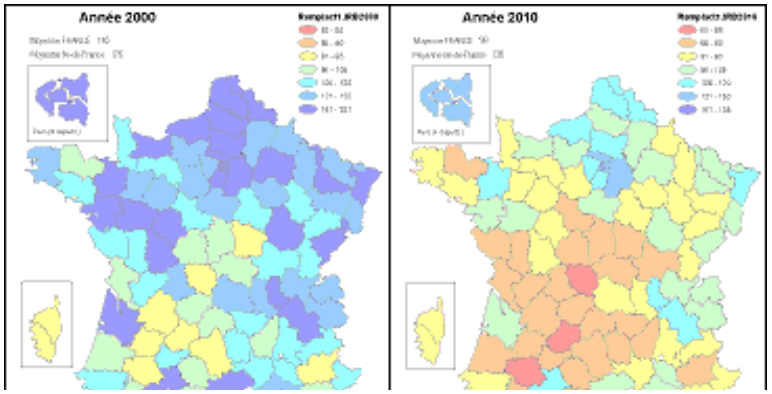
Originally fed by agricultural reorganisation and national imbalances, the flow from the southern countries to the north has by now been reversed, with ageing southern migrants returning in their homeland. The number of Italians and Spaniards in France decreased by close to two thirds and three quarters respectively, which can be attributed only to a very limited extent, considering EU-nationals, to naturalisations. The number of Portuguese was peaking around the early 1980s, but they spread since then in other countries. The decrease in Germany involves only the Spaniards, whose number decreased by half, while the Italians and Greek show hardly any change, with the Portuguese peaking over the recent years.

As for the short-term changes, in reaction to the economic cycle, the main point is that they are little documented, at least for the EU. For the USA, the data from the US Census show hardly any change over the 1990s, with a share of movers declining from 17 % in the early 1990s to 16 % in the late 1990s: not enough to speculate on any slowdown of residential mobility in phases of strong economic growth. For the EU, the regional 5-year shift in the age structure, compared to the national averages, suggests that there was a decline of inter-regional mobility between the early 1990s and the late 1990s, in a clearer manner for the 25-



34 age group than for the 15-24 age group. But inasmuch the basic statistical material is reliable, this decline appears strongest in Spain, and still significant in Greece. But on the whole, the evidence is too shady to establish a clear link from improved economic situation to decreasing mobility.

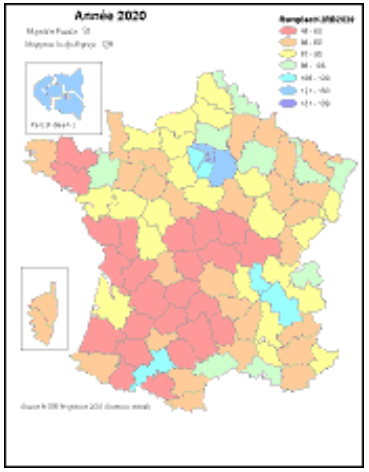
Maps 4-5-6 show the number of people aged 20-29 per 100 persons aged 55-64, France, 2000-2010-2020. The source is INSEE 2001 Projections Démographiques (Scénario central), class limits: Blue to red 207-151, 150-121, 120-106, 105-96, 95-81, 80-65, 65 and below.



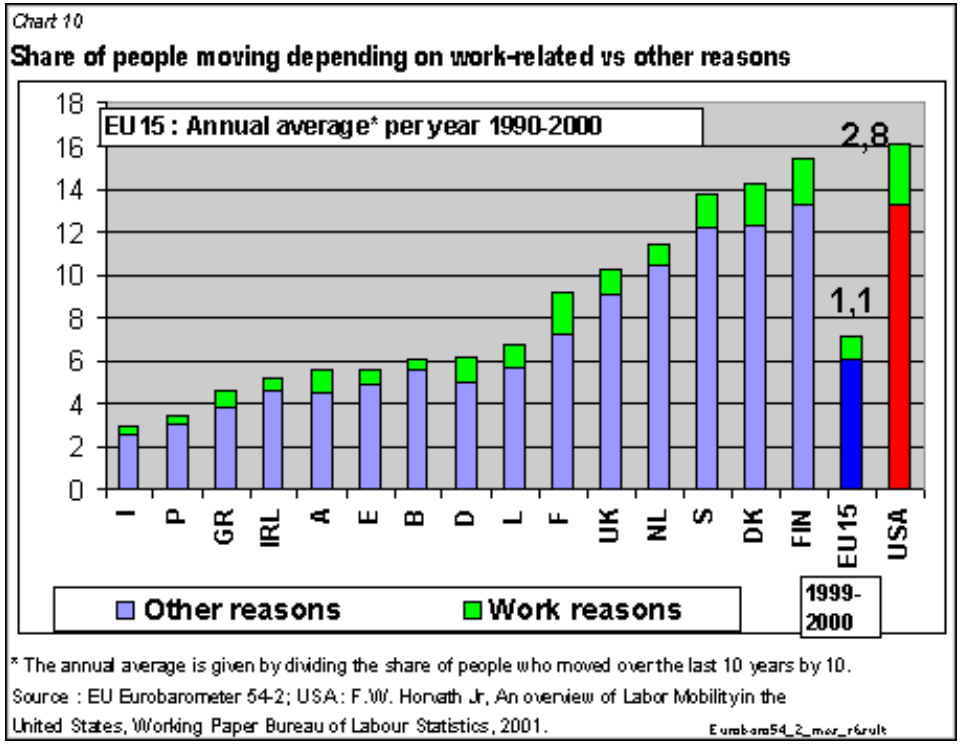
It is nevertheless strongly tempting to suppose that the far-reaching demographic changes over the next decades will rather depress the geographical mobility. The point is that the number of incomers aged 15-24 per 100 persons aged 55-64 leaving the working age will fall dramatically, from a EU15 average of 113 in 2000 to close 80 in the year 2020, before, seemingly, a further degradation. In the USA, the same ration would go down from 156 in 2000 to 96 in 2020, before restoring above 100 in the decades after. Some EU Member States would show an exceptionally fast degradation over the next two decades, like Spain, joining Germany, Austria, Italy and Belgium with ratios below 80. Only Denmark, Ireland, Portugal and Sweden would preserve a replacement ratio close to parity. The question is then of course the following: will the young people not be stuck

down while they would be given much wider opportunity? And would it not depress the overall geographical mobility further and further down.

The case of France is interesting; showing how the past trends in mobility, when integrated into the latest demographic projections as they are by the INSEE, would produce strongly perverse effects. Map 4-5-6 shows how these projections end up in 2020 with the sole region of



Lyon and Grenoble, showing replacement Paris, plus the departments of Toulouse, levels above parity. Well over half of the departments would by then show a ratio below 8 incomers for every 10 persons of leaving age. Can we imagine that things could do that far without provoking some preventive slowdown in mobility? And if things were going that far, the problem would be passed over from DG Employment to DG Regulation.



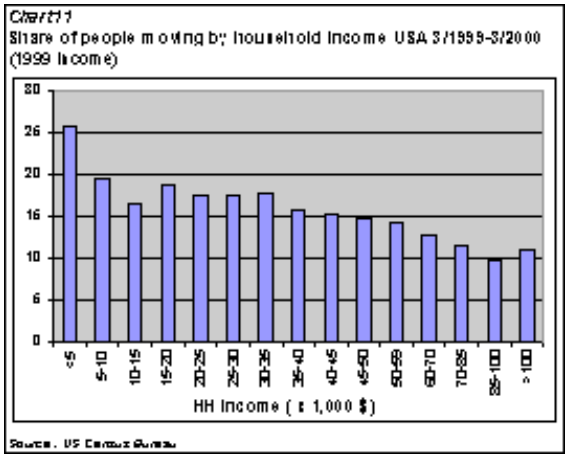
A.2.3. Job-related reasons for mobility

The share of moving people declaring they did so for job-related reasons is similar in the EU and in the USA: 15.2 % and 17 % respectively. This bring the people moving for job-related reasons, at whatever short or long distance, to the equivalent of 2 % of the Labour force in EU15 (approx. 3.5 million out of 170 millions), as against 4 % of the Labour force in the USA (5.6 millions out of 140 millions).

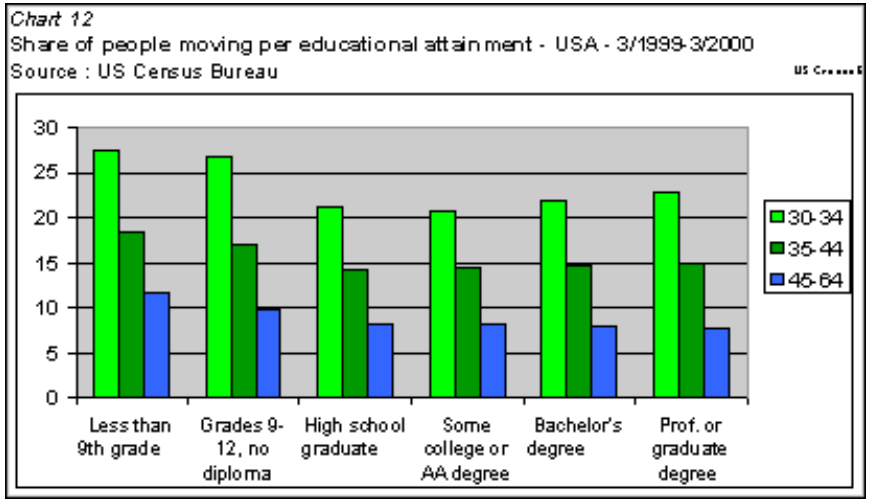
Beyond the statement of such values, it is not easy to comment the extent to which they contribute more or less to improving the labour market efficiency. At this stage, we should only refer to the difference, and take notice, once more, of the “European diversity”. Chart 10 shows how the reasons given for moving do interfere in the 15 Member States. It suggests, again, that the

Nordic distribution is similar to the US pattern, while in the "prolonged family" area, they are the least significant. Maybe it might be noticed that the "close labour markets" in Austria and Germany would lead to a higher share of job-driven mobility to compensate, but the argument would not mean much for France, and on the whole, it remains rather unclear. And we are certainly close to the limits of sample reliability and probabilistic laws, as we are whenever we are chasing rare events.

A.2.4. Additional characteristics of residential mobility



The US Census data provide some more detailed insight on the characteristics of the people who moved in the last year. Globally, it must be noted that the share of people moving is rather decreasing with the improving social status. Chart 11 illustrates this by choosing the household income. Looking at the shares per educational attainment is confirming this. Also, unemployed show higher share of moving people (25.2 %) than employed people (17.6 %). Expectedly, people living in owner-occupied units show much lower shares (9.1%) than people living in renter-occupied units (32.5 %). Considering occupational groups, we find the highest shares for "handlers/cleaners/-laborers" and for "private household service". All this suggests also that some forms of nomadic behaviour do persist for the least favoured class. A fine analysis of Euro barometer indicates a similar link, but very much weakened, just at the limit of statistical reliability.



At the same time, some signs do appear, for example when looking at the educational attainment, that mobility rates can increase again, although slightly, with the highest levels of educational attainments, at least for graduates in their thirties, as illustrated by Chart 12. This is probably the area where the behaviours correspond best to the paradigm of mobility as part of some social ascending strategy.

This could be connected to some extent to the situation of EU-nationals that are expatriate in other Member States: according to the LFS 2000, the rate of expatriation to other Member States is higher for people with high educational attainment from the northern countries, as opposed for example to expatriates from Portugal, Greece or Spain, where the people with lower or medium educational attainment are - or were - more "on the move" than people with high educational levels. To put it in a rough wording, Swedish expatriated in other Member States (or Americans in the EU) are managers, and expatriate Portuguese are construction workers. (See Table 2).

Table 2
Share of EU-nationals expatriate in other Member States
per educational level, 2000 (Males + females)
(Expressed as % of nationals remaining in the home-land)

	Age 25-64				All ages		EU-expat. in EEA+CH (*)	
Nationals from	Low	Medium	High	Total	(x 1,000)	%	(x 1,000)	%
B	0,8	2,1	2,4	1,8	148	1,6	8	0,1
DK	1,5	1,2	2,8	2,0	75	1,5	23	0,5
D	0,6	0,4	1,0	0,6	376	0,5	112	0,2
EL	4,7	4,2	3,1	5,0	411	4,1	7	0,1
E	0,9	2,7	0,9	1,3	399	1,0	89	0,2

A.2.5. Commuting as a substitute for residential mobility

Commuting to hold your job in another region appears certainly as a substitute for residential mobility, but the statistical recognition of it depends a lot on the territorial division and on the transport facilities. Map 7 and 8 show for some data for the EU. For the seven member States for which the LFS2000 gives data, as shown on Maps 7-8, the total number of inter-regional commuters would amount to close to

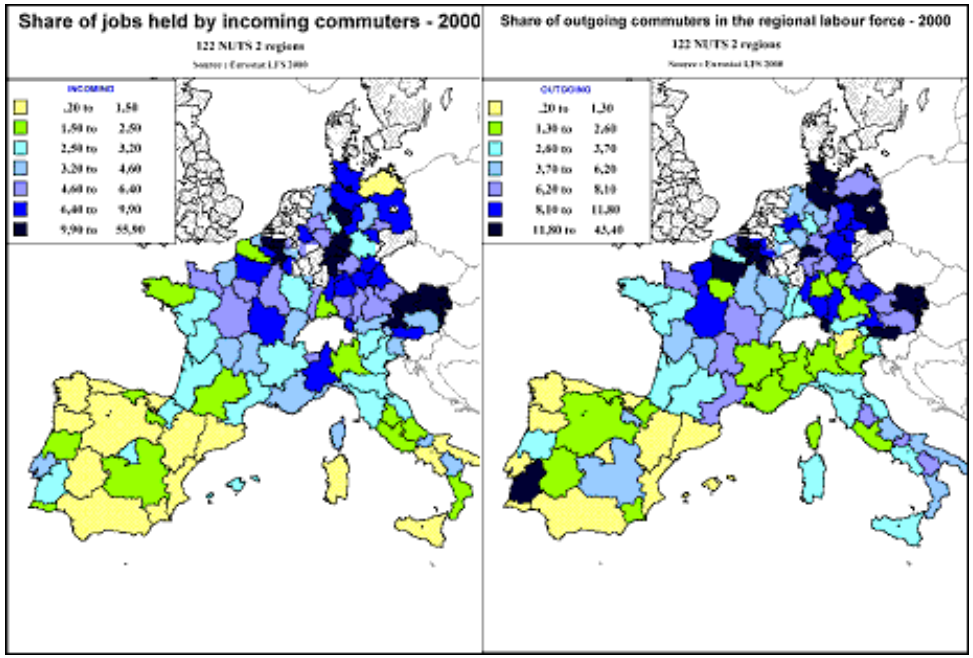
F	0,5	0,7	1,2	0,9	365	0,7	62	0,1
IRL				16,2	432	11,8	2	0,1
I	2,5	2,0	2,7	2,6	1279	2,3	332	0,6
L	5,5	2,8	13,3	6,1	14	5,2	1	0,3
IT	1,6	2,0	2,6	2,2	264	1,8	18	0,1
A	2,1	2,6	7,0	3,5	180	2,5	31	0,4
P	11,4	15,8	4,2	11,8	817	8,3	137	1,4
FIN	3,6	3,0	3,4	3,6	125	2,5	8	0,2
S	0,4	0,4	1,0	0,8	55	0,7	31	0,4
UK	1,0	0,6	1,4	0,9	409	0,7	33	0,1
EU-15	2,2	1,3	1,8	1,9	5364	1,5	893	0,3

Source : Eurostat LFS 2000

(*) EU-expatriate in EEA countries (Iceland, Liechtenstein and Norway) and in CH-Switzerland are drawn from Council of Europe, Recent Demographic Developments in Europe, 2000. Data are given for 1 Jan 2000, except Liechtenstein, 1 Jan 1998. EU-expatriates to CH make 90 % of the total figure, and over 98 % when considering only nationals from Italy or Portugal.

Low= ISCED 0-2 = Less than Upper Secondary - Medium = ISCED 3 = Upper Sec. - High= ISCED 5-7 = Tertiary Education

6 million. Obviously, a NUTS2 region like Brussels, with over half of the jobs held by commuters from other NUTS2 regions, is a most extreme example, and Belgium ranks first by far with close to 1/5th of commuters in the national labour force. Austria comes second, with 1/8th of commuters - the influence of Vienna. Germany comes third, with 8 %. At the other extreme, Spain with its vast areas of low-density population is discouraging commuting, that involves hardly 1 % of the national Labour force. The Netherlands show an example of fast progression in commuting, multiplied by close to 2 between the early 1980 and the late 1990s, while residential mobility remained at low levels. In UK, the recent division of Greater London into two new NUTS 2 regions would certainly add more millions to the number of formal commuters.



Maps 7-8 show commuting between NUTS2 regions in EU - 2000. Trans-border commuting needs a special mention, and certainly considering the work that the EURES network is doing. It involves, when including the commuters going to Switzerland, close to 0.25 % of the EU15 Labour force. But Switzerland is taking 40 % of the total number, and an additional 1/5th, if not 1/4er according to the latest data, is going to Luxembourg, where the commuters are now making well over one third of the total number of jobs, besides one third of the resident population being non-nationals. But Luxembourg is certainly a very special case. (See Table 3).

Table 3: Cross-border commuting - EU15 - 2000

Cross-boarder commuters in the EU						
Year 2000 (Main directions)						
		To		(x1,000 persons)	Total	

There is little doubt that the total number of commuters, in the EU15, is a multiple of the number of people migrating from one region to another for work-related reasons.

B. <u>Occupational mobility</u>

		B	D	E	F	L	NL		CH
From	A		22					22	
	B		5		14	27	22	68	
	D					11	4	15	28
	F	13	55			41		109	123
	NL		7					7	
	P			23				23	
Total			88	23	14	79	26	230	151

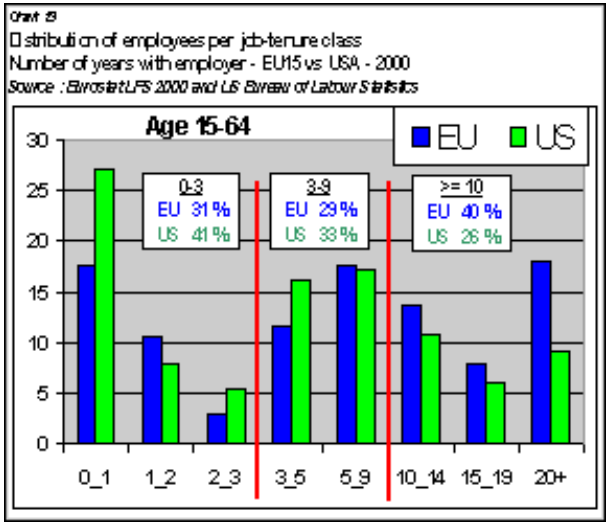
Grand Total = 381,000 cross-boarder commuters
I.e. 0,25 % of the EU labour force

Source : Eurostat LFS 2000 - Handling (SMSA, 8-2001)

B.1. Recent data on job-tenure

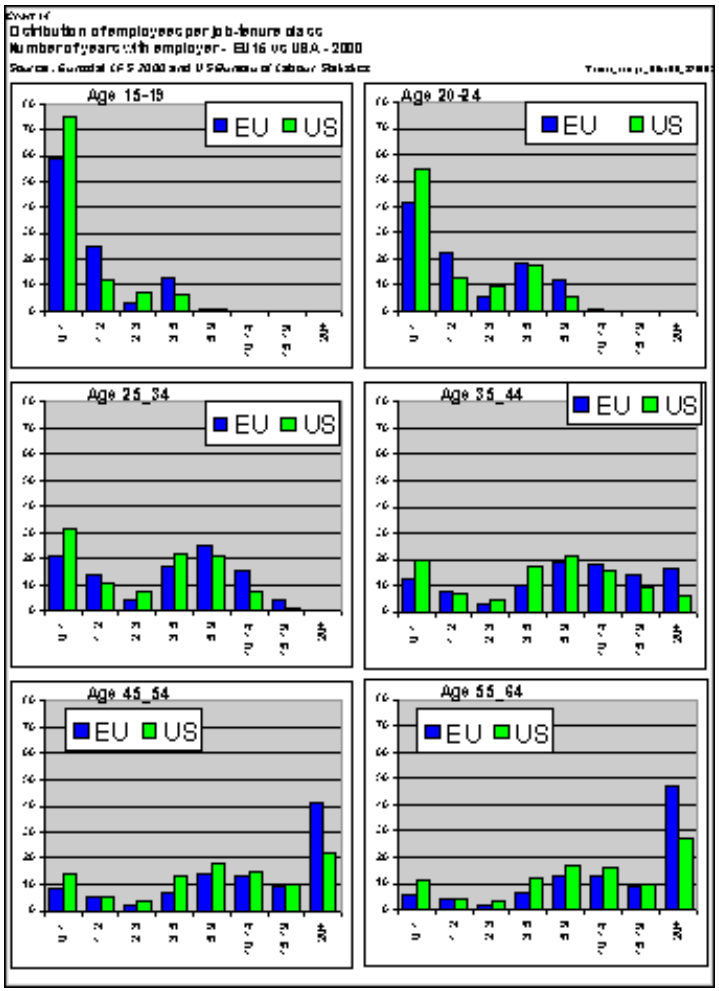
Any data on occupational mobility appears absolutely overwhelming compared to geographical mobility, and certainly if one isolates the small part of residential mobility that is due to job-related reasons. We are no more discussing about 2% (EU15) or 4% (USA) of the Labour force, but of shares of much wider magnitude. The immediate lesson from this is that the fluidity, or say the potential for re-allocation of the workforce, relies incomparably more on occupational mobility than on geographical mobility.

Chart 13 tells that 18 % of the EU employees held their job for less than one year, against 27 % of US employees. At the other extreme, 40 % of EU employees had their job for 10 years or more, against 26 % of US employees.



The global profile is sketching a dual labour market, with on one hand short-tenure workers, and on the other stable workers, having a job tenure above 3 years. It also suggests that this dual character is more pronounced in the US compared to EU. Noteworthy, this EU-US gap remains for every age group, as illustrated in Chart 14. In the EU, half of the employees in the 35-44 age group reach a 10+-year tenure, while there are only 31 % reaching this in the same age group in the USA. Also, when considering the ageing workers (55-64 age group), we find 18 % of American employees, against 12 % of European employees, with a job-tenure shorter than 3 years. This means also that re-entry into employment is certainly easier for Americans in their fifties than it is for Europeans.

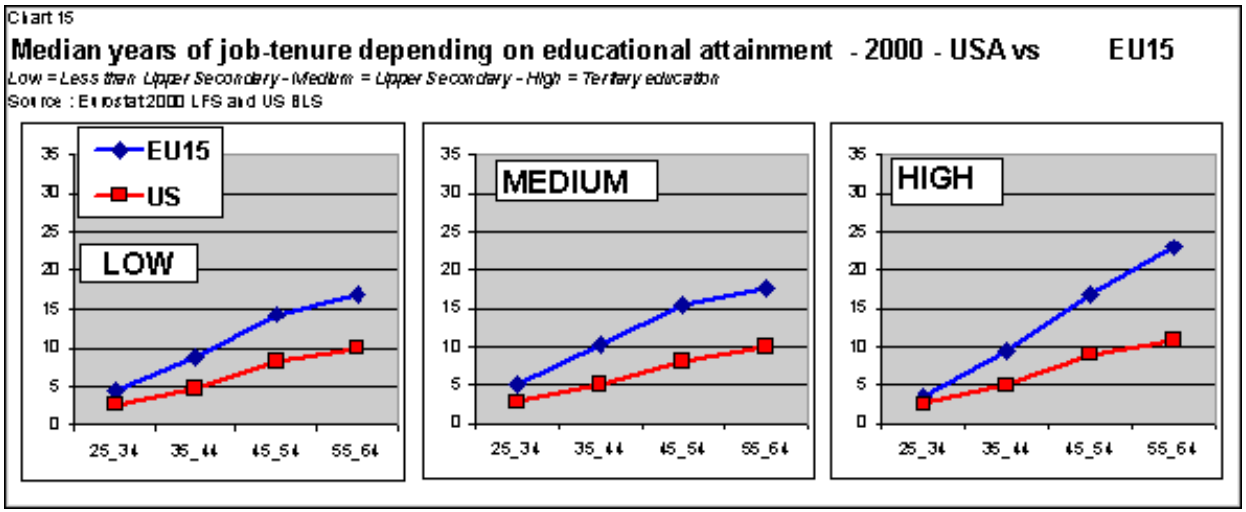
Consequently, the median job-tenure of employees lies in the EU15 at twice the value of the USA: 7.1 years against 3.5 years. But one very striking feature appears when comparing the median tenure depending on age and on



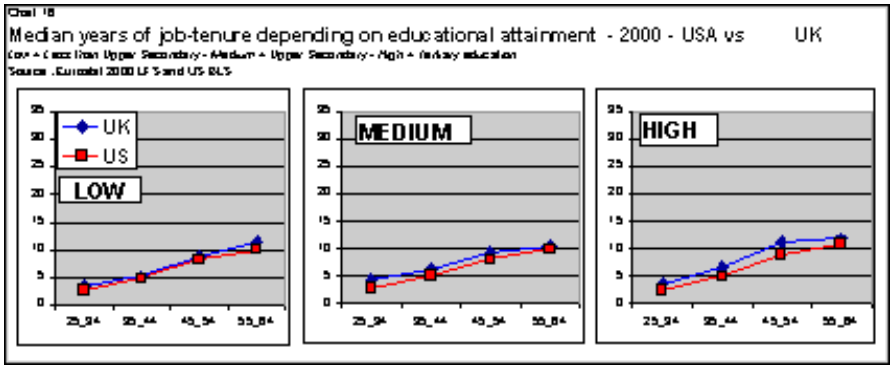
the educational attainment. In the USA, any higher educational attainment provides no advantage in terms of job security, while in the EU15, this link appears very clearly: the difference between the median tenure of people with high educational attainments, in the 55-64 age group, against people with low attainments is 6 years (23 against 17 years), while it does not even reach one year in the US (10.9 against 10 years). (See chart 15). And if this were, speculatively, to crosscheck some organisational characteristic, it would be tempting to say that baronies are much better locked in the EU compared to the US. Alternatively, it could be argued, from the point of view of the employee, that investing in higher education brings about better job security.

The second striking thing is, again, the European diversity. But there is one case where the profile is almost the copy of the US profile, and that is UK (chart 16). The Nordic countries plus the Netherlands follow, with profile in between the American and the EU15 average. Germany, France, Spain and Portugal show profiles close to the EU15 average, with increasing “high education premiums” in terms of job security. Greece, Belgium and Italy accentuate the overall job security, even for employees with low educational attainments. Austria presents a very specific profile, with the highest, by far, job security, but also with no High education premium - as if, in this case, a high educational attainment was the condition of occupational mobility (see Chart 17).

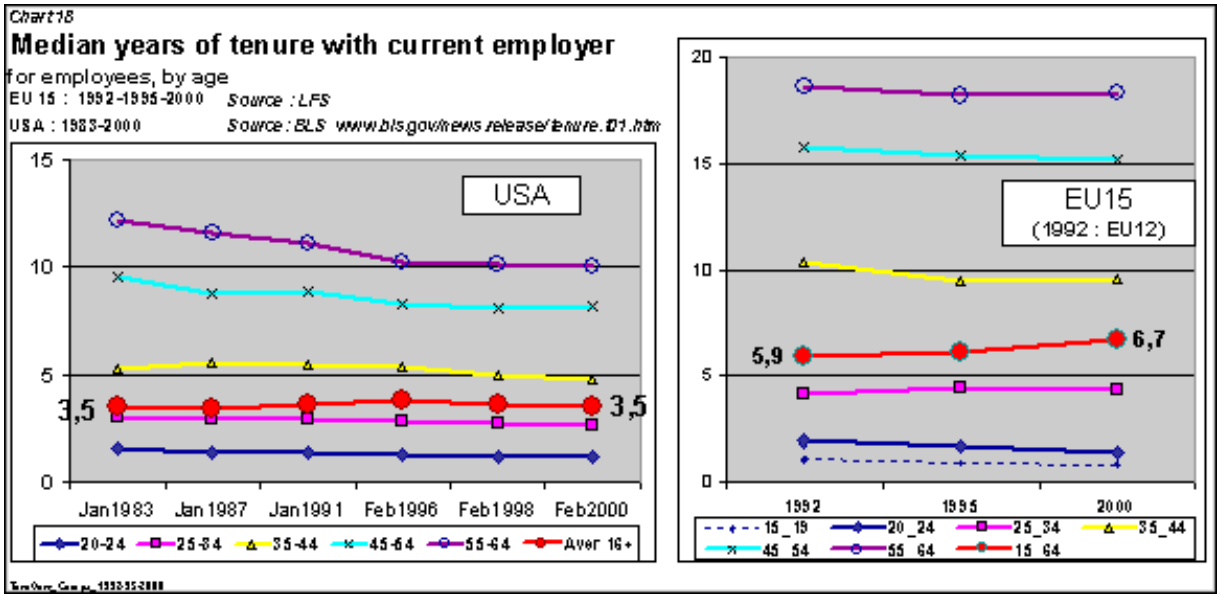
And here we are probably closest to the different characterisa-tion of the EU15 vs. the US Labour market in terms of “closed” versus “open” labour markets - or, say, high viscosity versus high fluidity. And there is seemingly a link with the cost of lay-off that is lowest in UK. But at the same time, it introduces the question of the kind of flexibility that is being favoured by enterprises: external in the American or the UK cases, and more internal in the cases of the closed labour markets.



B.2. Changes over time



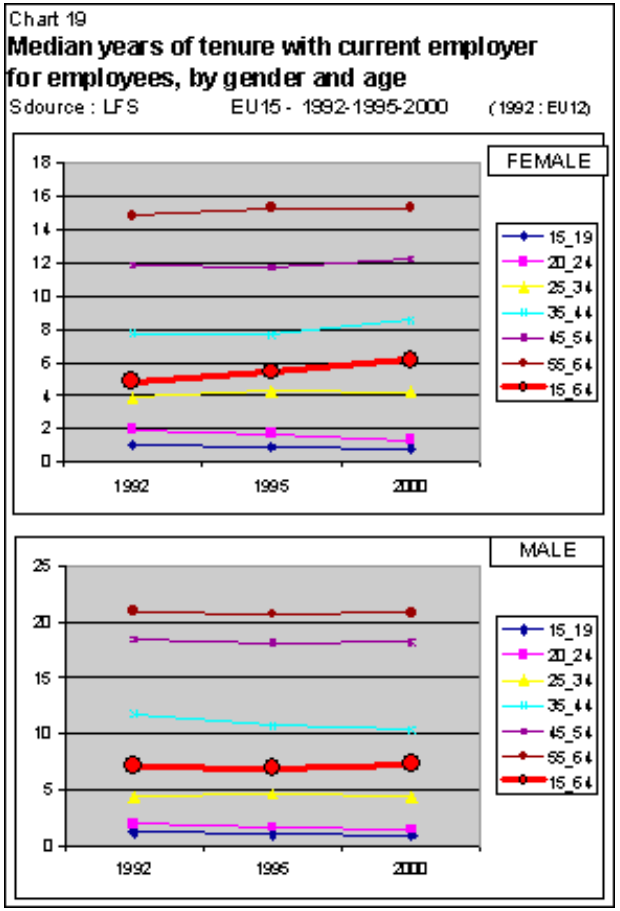
According to the Euro barometer (Question 15), 62 % of people "think that, in five to ten years' time, people in general will change jobs more often", and this share is increasing together with revenue and level of education, and it is all going along the common belief that lifelong jobs belong to the past. The available data do not give clear indications that "job security" has uniformly declined, neither in the US nor in the EU. And one of the main problems lies here in how we define "job security" versus "job stability". If it is about involuntary job-loss, a BLS Working Paper, by Jay Stewart, comes to the conclusion that "job security appears to have declined during the early 1970s, but from the mid-1970s through the mid-to-late 1990, there has been no change", adding that these findings are not consistent with the popular perception that job security continued to decline in the 1990s. And we know of no similar research at EU15 comparative level.

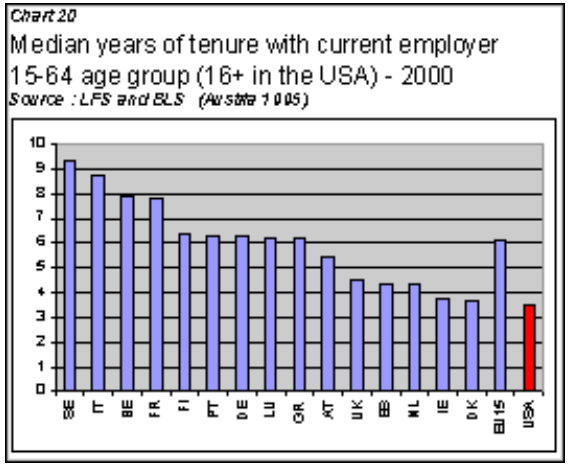


If we now keep to *de facto* stability of jobs, considering job-tenure, the trend towards less and less job-stability appears little disputable. For the USA, it may not appear when looking at the overall average "median years of tenure with current employer", but it does well appear clearly when looking at the changes within every age group - the reason of the discrepancy lies simply in the ageing of the work force, that brings relatively more people in the high-tenure age group. For the EU15, we find, for much higher overall levels, a global evolution towards longer job-tenure that owes, here again, all of its extent to the overall ageing of the work force. Considering the different age groups, we find only the 25-34 group where the tenure remains stable, while it declines for all others. But this derives only from the longer tenure for the eldest age groups, while for all age groups below 45 the tenure is shortening, and certainly for the young incoming generations. This European evolution is sketching a kind of insiders' dominated labour market, with older workers increasing their job stability while the jobs for younger people are unstable.

Two additional features must be mentioned. On one hand, as in the USA, the overall evolution is the result of a faster decline in

the stability of male jobs, in most age groups, and a statistically increasing stability of female jobs, which is a clear consequence of the wave of increasing female participation. (See chart 19).





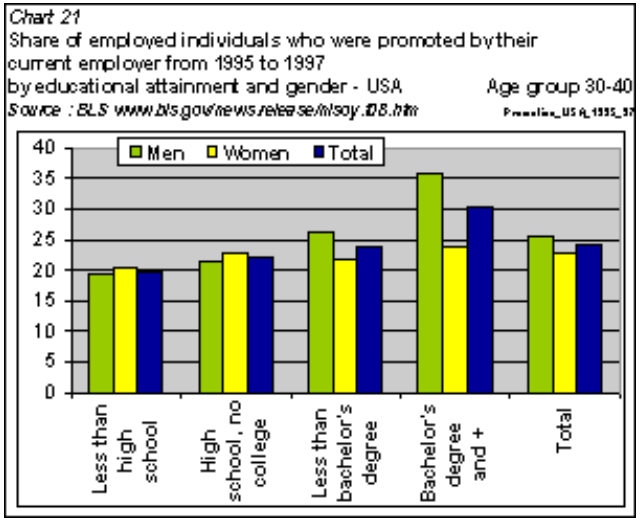
On the other hand, we find again the European diversity that is not simply confirming the ranking suggested by geographical mobility. Chart 20 shows for example that Italy, ranking low in terms of geographical mobility, is also ranking low in terms of occupational mobility insofar we consider the tenure with the employer. Spain, with low geographical mobility, shows high flexibility considering the tenure with employer - that owes much to the young temporary workers. Sweden, on the opposite seems to show a high geographical mobility, but also the highest tenure with the same employer. Belgium and France, and also Finland, Portugal, Germany, Luxembourg, Greece and Austria rather confirm here the closed character of their labour market, with no prejudice on what happens at the corporate level. Denmark, Ireland, the Netherlands and UK confirm here the open character of their labour market, with both high levels of geographical mobility and short job tenures. (See chart 20)

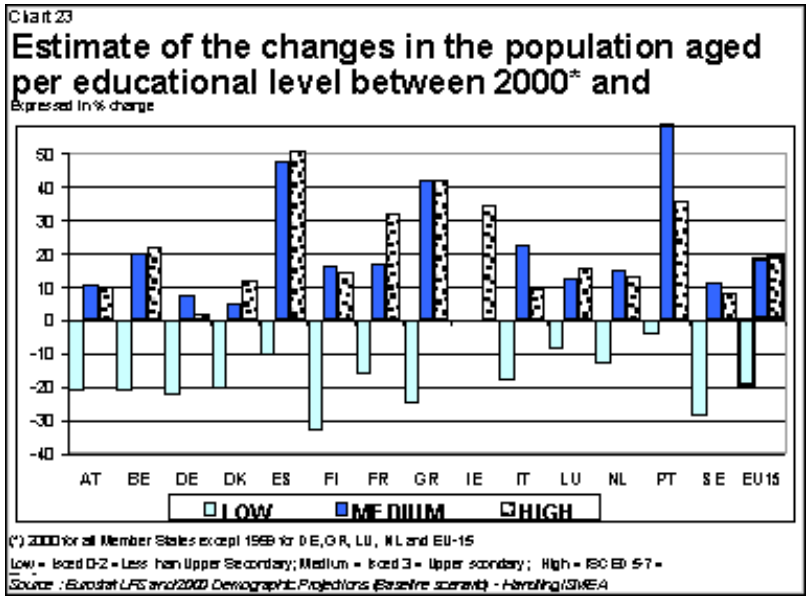
C. Paying attention to internal mobility

The forms of mobility that are internal to enterprises are still a hidden continent, and it might well be that this is the level where the most important things for the future happen. The fact is that over the last months, any conference on human resource management is buzzing about how to “retrain and to retain” employees. There is hardly any doubt that the progression towards a situation where labour will be the scarce resource will imply an ever increasing concern with “retaining people”, i.e. the promotion of organisational innovation, with new and more sophisticated forms of internal mobility. It is certainly time to improve the statistical coverage of the internal mobility and of the longitudinal professional mobility.

Inasmuch we want to keep the attention on an European comparative approach, the available data are scarce, notwithstanding the considerable amount of literature at national, local or enterprise level. For the USA, a useful insight is given by the share of employees, aged 30 to 40, “who were promoted by their current employer from 1995 to 1997”. Close to one quarter of these employees had such a promotion, increasing with the educational level. For loweducational attainment, women have slightly more promotion than men, but with higher educational level, it is the opposite, showing the well-known glass ceiling”. A quarter of the

employees, that is again a much higher share than the people moving around for work-related reasons. It is roughly equivalent, for this age group, to the number of people that are with their employer for less than one year (as in chart 14).

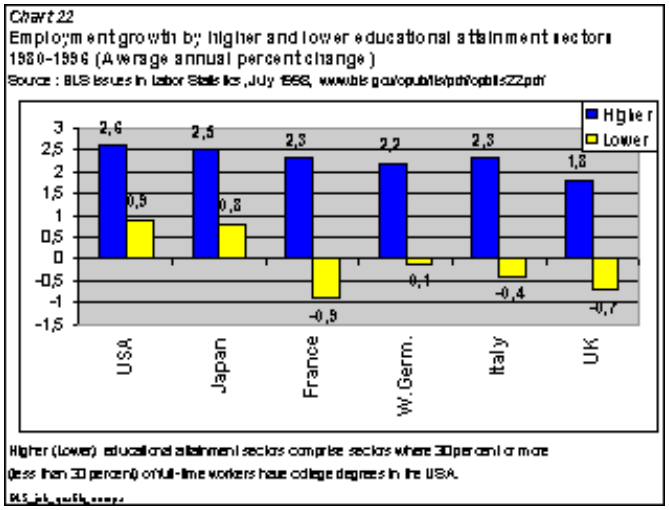




D. The quality of jobs

One striking fact is the divergence in the evolution of jobs depending on sectoral educational attainment. Chart 22 shows how in the long term, according to the BLS, the employment in the sectors with lower educational requirements is receding in the four main EU countries, while it is increasing in the USA, although at a slower pace than in the higher educational attainment sectors. Although more “stylised facts” would be useful to sustain the argument, the idea behind this might be that the EU economy is favouring to a greater extent a strategy of higher qualification, that is of course consistent with the requirements of the knowledge-

based society - and the Lisbon challenge.



In relation with this, it must be remembered that the EU has been improving considerably the educational level of the population. Chart 23 shows an estimate of the changes in the number of people, aged 25-64, between 200 and 2010, depending on the educational level. For EU15 as a whole, the number of people with low educational attainment would decrease by 20 %. The number of people with medium or tertiary level will increase by 18 %.

The consequence of this is that the labour shortage will certainly strike in the first place the low qualification occupations. And the permanent shift towards activities requiring higher qualification and high added value becomes then a no-choice question. And enterprises that would go on to make investments based on a large availability of low qualified staff will face very uneasy prospects. On the opposite, enterprises that would invest in organisational innovation will find a workforce with improved a priori qualification, making some kind of dream team for the knowledge-based society.

E. Conclusion

The statistical survey of geographical and occupational mobility sketches the picture of a relatively clear opposition between the USA and the EU considered as a whole. The EU15 labour markets are predominantly characterised by a limited external mobility of the labour force, and it might appear risky to rely upon any significant increase in this external mobility to meet the challenges of national/regional imbalances in the labour supply. Considering the high-certainty prospects of the quantitatively shrinking and qualitatively shifting labour supply, the main challenge for Europe lies more probably in its willingness to take better advantage of any forms of mobility that are internal to enterprises. In this respect, accompanying the positive shift in the educational level of the workforce leads to prioritise the question of lifelong learning and lifelong development of competence. This path towards better-accepted personal flexibility is certainly consistent with any policy aiming at increasing the overall productivity.

Finally, mention must here be made of the “knowledge-based society paradox”: we need on one hand more and more knowledge and wider scopes of skills - social skills, learning ability, problem solving skills, all preferably certified when considering the point of view of the worker. But on the other hand, we face ever-faster obsolescence, renewal and enrichment of the acquired knowledge and skills, that are making certification uneasy, because certification requires stability of what is to be certified, unless the certification is to have only a provisional or partial value.

While surfing on the web after injecting “skill certification” in the search engines, we do indeed have a flood of information and advertising, most from the USA and also from the UK. No doubt that this is consistent with an open labour market and with high rates of external mobility: providing people with some certification that allows them to be effectively mobile becomes a business

by itself. When considering on the opposite the main forms of internal mobility, there is little doubt that the problem of certification arises in quite different terms. Innovation is here urgently required, in a direction that would both sustain productivity and offer favourable career development and higher quality of jobs. The trend towards “social labelling” of enterprises should take this into account.

Discussion

Mr. Heikki Suomalainen, Specialist Adviser and President of UNICE's Education and Training DG, Confederation of Finnish Industry and Employers - TT

First of all I would like to thank the organisers of this seminar for inviting UNICE here. We find the issues the conference is dealing with very important, and that is why we are happy to be here.

UNICE adopted in the spring of 2000 its position on the education and training. In that position UNICE noted that qualifications and skills are of fundamental economic and social importance. In the context marked by increased globalization of economies and technological development European companies are faced with far- reaching changes. Because human capital plays an increasingly important role the key objective is to create a society of continuous learning. In order to achieve this education and training structures, contents and processes need to be reformulated.

It is therefore vital to improve the quality of education and training in order to respond to the challenges posed by globalization and development of the information and communication society. In this context quality can be described in terms of ability to respond to the needs of companies, of flexibility and adaptability and of transparency.

The European population is ageing. The balance between entries and departures from the labour market, although now positive, has been decreasing sharply since the beginning of the 1990's. It will be negative in less than ten years from now. This is due to the fact that between 1945-1950 there were much more babies born than it has been 10-15 years ago. And now when that generation, born between 1945-1950 will be approaching the retirement age, the incoming amount of young people is not sufficient to replace the departures. This phenomenon puts high challenges for the management of the older people in order to increase the average retirement age which lies now quite close to the 60. One other tool to increase the average retirement age is to give those people ways and means to stay longer in the working life, and it is education and training.

In UNICE we have discussed which kind of qualifications and skills are relevant to the needs of companies. We have come to the following conclusion:

- Values and attitudes that are compatible to work
- Basic skills (numeracy and literacy)
- Key skills (such as social skills, ICT, problem solving)
- Intercultural skills including language skills

After the Lisbon summit in which the European Council decided to set the objective for Europe to be in ten years time the most competitive economy based on knowledge, the social partners at the European level have worked together to give their contribution to this process. The working group which were drafting the joint contribution, has finished its work some time ago, and now it is up to the decisive bodies of the both sides to finally adopt the contribution.

In that contribution the social partners have clarified the concept of competencies and qualification. With competencies they mean the knowledge, skills and know-how applied and mastered in a given work situation. With qualifications they mean a formal expression of the vocational or professional abilities of the employee.

The social partners have identified the elements that should form a solid foundation on which individuals can build their skills and

competencies during their working life. These elements are as follows: reading, writing, numeracy and at least the second language, problem solving ability, creativity and team work, computing skills, ability to communicate, including in a multicultural context, and the ability to learn how to learn etc.

We in the UNICE think that those both lists of skills and basic knowledge elements are supporting each other. Even the young people in Europe are aware of the most important skills that are needed in the working life. In a recent Euro barometer survey they listed the following as most useful skills for finding a good job. The survey was made to young people between 15 - 24 years old. The most important skills were languages followed by IT-skills and good general education. The fourth one was communication skills and the fifth one was ability to work in a team.

As a conclusion we can say that there seem to be a general common understanding of the useful and necessary skills in the working life.

Concerning the future needs of recruitment in the industry we can note that in Finland, as an example of Nordic countries, the structure of recruitment according to the educational attainment is as follows:

- 50 % of the recruitment needs will be based on the upper secondary vocational education and training.
- 25 % will be based on the polytechnics level.
- 25 % will be based on the university degrees.

Mr Tim Mawson, Deputy Head of Unit for Employment Services, Employment and Social Affairs DG, European Commission

I should first of all like to express my appreciation to Géry Coomans for his presentation. It is the result of a remarkable piece of research and provides much food for thought, as it brings out a well-balanced view of the comparisons, contrasts and challenges facing both the US and the EU in the field of occupational and geographic mobility. I should add that Mr Coomans also provided a notable input last year to the work of the High Level Task Force on Skills and Mobility, which was set up as part of the Commission's strategy of opening up the European labour markets, to make them accessible for all with a 2005 deadline. Last December's report of the Task Force was the basis of the Commission's 25 point Action Plan on Skills and Mobility which was adopted last week and will be submitted next month to the meeting of EU Heads of State and Government at the European Council in Barcelona.

The EU has the stated ambition of becoming the most dynamic and competitive economy in the world, particularly focused on the knowledge society. In order to achieve this the EU needs a better skilled and adaptable labour force, with more scope for moving between jobs and between localities, both within and between Member States. However, as has been shown in the presentations, mobility in the EU runs at a significantly lower level than in the US. The mobility -- which does take place -- tends to involve mainly young people (who are on the whole better qualified), which presents the EU with a problem, since the demographic evidence points to a future EU labour market made up of fewer young people and a greater proportion of older people (who tend to be less well qualified and more static). The evidence on job tenure also indicates that EU workers stay in their jobs longer than their US counterparts (16,4% of EU workers having been with their employers for less than one year compared to a US figure of 30%), further evidence of the greater scope for fluidity on the EU labour markets.

There are, of course, differences between labour markets in the EU - Géry Coomans has suggested three types of mobility patterns, the Nordic type (with high levels of mobility), the "nuclear family" type (with relatively high levels) and a third group, particularly involving southern Europe, but also other countries, where levels are generally low. Obviously differences also exist between States in the USA; labour movements in and out of high mobility States like California and Florida are not the same as for States such as Montana or Wyoming. However, seen as entities, mobility in the EU is still way below average US levels.

Before examining the Commission's Action Plan, I should just like to open a brief historical speculation on why the US benefits

from higher levels of mobility. I was intrigued by the work done over a century ago by Frederick Jackson Turner in his paper on "The Significance of the Frontier in American History". "The frontier," he claimed, "is the line of most rapid Americanization." The presence and predominance of numerous cultural traits -- "that coarseness and strength combined with acuteness and acquisitiveness; that practical inventive turn of mind, quick to find expedients; that masterful grasp of material things... that restless, nervous energy; that dominant individualism" -- could all be attributed to the influence of the frontier. He maintained that the frontier contrasted sharply with the concept of European nations' borders with other states. One is led to speculate whether the prospect of expansion and pushing back frontiers in the US, and the need to mobilise the "get up and go" instinct is still more a feature in the American psychological make-up than in the European!

My main purpose today is to outline some of the key elements in the Action Plan on Skills and Mobility. The Commission views mobility under three perspectives - occupational mobility (concerning the movement of workers between jobs and the factors governing such movement), geographic mobility (be it between regions within Member States or involving movement from one country to another), and the importance of making sure people actually know about the opportunities available.

In the field of occupational mobility some of the key actions concerned are directed at improving skills, starting with the need for cost-free access to the acquisition of basic skills for all, regardless of age (many older workers who were not able to benefit from quality education still lack some basic skills). In order to guard against future skills shortages in critical sectors, targets for increasing student numbers, especially female students, in maths, science and technology should be introduced, along with better information and advice to females about job opportunities in science and technology; enabling women to take up more such opportunities will serve a dual purpose of achieving greater levels of equality for women while helping to tackle some of the skills gaps.

ICT skills figure large on the agenda, with the proposal that EU quality marks should be introduced for best ICT-based learning systems in EU schools (where, for example, only just over half the Member States currently provide for ICT teaching in primary, or elementary, schools). EU-wide definitions, standards and validation of ICT skills are needed, along with the better monitoring and matching of ICT skills with business demand, which requires good co-operation between employers, trades unions and government. Examples of good practice already exist; they need to be built upon.

This type of co-operation should be applied more widely, to strengthen links between the world of education and work, and should be supported through a European network of industry/education advisory bodies. Better training in the workplace is called for, with target setting for company training schemes and competence development plans for workers, including for older workers in order to enhance their productivity and working life longevity. This will be helped by establishing EU-wide recognition of non-formal learning and work experience.

Geographic mobility in the EU is constrained by a series of obstacles. Priority will be given to eliminating these. In the social security field a new electronic health card will be introduced, which should not be seen as an EU-wide social security card, but it will make access to immediate health care away from home more straightforward. Preserving pension rights and their portability is important for mobile workers, particularly in an era when the long-term viability of some pension schemes seems uncertain.

In the language area the EU has broader challenges to face than the US, with eleven official languages (at the moment!) and a wide range of other national and regional languages. Mastering languages is therefore an essential part of any strategy to support geographic mobility, quite apart from the intrinsic intellectual and practical value of language learning for itself. The objective here is for language learning to start early (e.g. from age 8 onwards) and for all young people coming out of compulsory education to have had the chance to master two EU languages in addition to their own. Linked to this objective is that of enabling a greater degree of intercultural learning to take place, by giving all students the chance of spending a high proportion of their studies in another EU Member State. Current EU schemes such as Socrates (education) and Leonardo da Vinci (vocational training) have proved trailblazers in this direction.

However, it has been widely understood that no matter what efforts are undertaken to maximise the potential of the indigenous EU labour force through improving skills and supporting mobility, there will still be a skills shortfall in the years and decades to come. Recourse to non-EU labour is therefore high on the agenda, and greater attention must be paid to improving the conditions

under which third country nationals enter and remain in the EU. The objective is for third country nationals to benefit from the same residence, work and social security rights as EU citizens enjoy once they are properly established.

No matter how easy you make it for people to be mobile, particularly in the geographic sense, unless people actually know about the opportunities available the full benefits will not be felt. Information provision is therefore crucial, and it was interesting to hear Shelley Hymes talking about the co-operation between the US Department of Labor and Monster.com as a means of expanding the scope of information about job opportunities. The forthcoming establishment in the EU of the One-stop mobility site to support those aiming to move between countries will be of great benefit here, either for jobs, education and training, or for family reasons. The modernisation of the EURES (European Employment Services) system as a part of the One-stop site will also make labour mobility smoother. I was interested to see this morning that America's Jobs Bank registered about 50,000 new jobs today with a total of about 910,000 jobs in stock - impressive performance. EURES does not quite match up to this yet, with around 200 000 jobs in the database, but it should be said that such jobs are currently pre-selected by the Member State employment services for their suitability for EU-wide applicants - we aim to expand the number of jobs available. A mobility promotion and publicity campaign is being planned to advise EU citizens about the jobs and learning opportunities available throughout the EU.

In these few minutes I have tried to outline a few of the key areas where we consider that progress has to be made to support occupational and geographic mobility as part of an overall EU employment strategy. Delivering the goods will require a strong sense of commitment and partnership from Member States, management and labour as well as from the European institutions. It is our aim to provide a yearly assessment of progress to the Heads of State and Government in springtime, with the deadline of 2005 for achieving the objectives of the Action Plan. I am sure you wish us well in achieving this. Thank you for your patience and attention.

Dr. Kevin M. Hollenbeck, Senior Economist, W.E. Upjohn Institute for

Employment Research

I would very much like to thank the conference organizers for inviting me to participate in the proceedings. I am a lifelong learner, and I love to learn by listening to and talking with individuals who may have different perspectives from mine. In this conference, we have at least two levels of dialog we are hearing comparisons across and between the US and the EU, and we are hearing from all of the social partners: government policymakers, business, and labor as well as academic researchers.

The structure of my comments is as follows:

1. I will restate the key conclusions from what I heard from M. Coomans' remarks this morning and read in his paper;
2. I will provide my reactions to those thoughts; and
3. I will try to point out to be the public policy implications of the issues and my reactions to them.

I want to first compliment Mr. Coomans on his thorough, logical, and careful analyses. I have a colleague who works considerably with European data who warned me that European mobility data have a number of deficiencies. But when he looked through the paper, he said that he thought that the paper had handled very well the difficult and messy data.

I noted five major conclusions from the paper and comments, which were as follows:

Conclusion #1: There is considerable variation/heterogeneity within the EU15 member states, and even within the member states, in geographic and employment mobility.

Conclusion #2: Nevertheless, both geographic and employment mobility are less than in the US. I very much like Mr. Coomans'

caveat about looking at geographic mobility solely from a labor market perspective. His (unstated) conclusion seems to be that we're (the EU) not going to reach US employment rates as is our aspiration without increased mobility or, at least, we have a severe obstacle in our way.

Conclusion #3: Job mobility is much more significant for labor market efficiency than is geographic mobility.

Conclusion #4: With relatively little external mobility (geographic and/or job changes), maybe we should emphasize internal mobility such as promotions and education/training.

Conclusion #5: We need to face the "knowledge-based society paradox," which is that we need more and wider skills (and we need to have them certified), but skills become obsolete quicker than ever before.

I had seven major reactions to the paper and remarks this morning, which I will enumerate (although in no particular priority order):

Reaction #1: There is considerable regional variation in mobility in the US just like in the EU. In fact, the heterogeneity may be comparable. Data from the latest Annual Housing Survey show quite significant variation across states. Some of our western states have mobility rates that are 2 - 2 times as great as our mid-Atlantic states (NY/NJ/PA). These data are for households, not people, and we would expect household mobility to be higher than on a personal basis because smaller-sized households are more likely to move. The levels across states ranged from 35% to 15%. I roughly estimated the coefficient of variation for the US and EU15 data and they were approximately equal.

Furthermore, there is considerable intrastate mobility within the US states just as Mr. Coomans has shown within the EU member states. I come from Michigan, and we Michiganders always use our left hand to symbolize the State of Michigan. The top part of the hand, northern Michigan has very low mobility rates. Near metropolitan Detroit, especially in a high tech corridor around Ann Arbor and Oakland County, we have quite high mobility. Finally, in Southwest Michigan, where I live, the mobility rates are moderate.

Reaction #2: In my cursory examination and from my limited knowledge of the data, I sensed a significant level of correlation between economic vitality and residential mobility. I know from earlier work that I have done on business formation, there is high correlation between employment mobility (through business births, expansions, deaths, and contractions) and regional economic growth. The problem is that I'm not sure that we know the causality. Does mobility cause economic growth or does economic growth cause mobility or neither? The answer to this question is very important from a policy perspective because it means that if growth/economic success is the goal, it may be totally inappropriate to facilitate mobility. If mobility results from growth, then it is far more important to focus on monetary, tax, or trade policies to stimulate growth and mobility will result. I'm confident that scholars are attempting to ferret out the causality, if any, between growth and mobility, and I would encourage Mr. Coomans, who has obvious expertise with the EU data, to do so as well.

Reaction #3: I quite agree that residential mobility tells only a small part of the story. (As an aside, I am baffled by the discussion's and papers total emphasis on moving people to jobs. It seems to me that moving jobs to people is also an option.) In any case, the EU may get some efficiency gains from reallocating labor or jobs toward areas with a surplus, but I suspect it would be a marginal improvement only. In my opinion, key explanators of economic vitality are resources and location i.e., physical capital and inputs, skilled labor, transportation infrastructure, and distance to markets.

Reaction #4: I think that a glaring omission from the paper and discussion is telecommuting. I did an Internet search on "Europe and telecommuting" and got a wealth of information covering several years.

Reaction #5: I agree that flexibility and smooth transitions between employers is far more important for labor market efficiency than is geographic mobility. The policy implication of this is that country's should promote active labor market policies (ALMPs), not passive income maintenance supports.

Reaction #6: I was surprised by the lack of attention to productivity in addition to employment rates. Presumably there is as much variation within and across the member states of the EU as there is for employment, and productivity trends may be more important from a policy viewpoint.

Reaction #7: The paper shows, among other things, that the young, more educated, and highest skilled workers are best off (not surprisingly!). I can offer an anecdote to buttress this finding. In my home state of Michigan, we do a follow-up survey of students who undertook career and technical education classes in their secondary schooling for purposes of state funding. Specifically, we conduct a telephone survey of students one year after they have graduated from high school. Interestingly, five years ago, we found that students who went to work right after high school were earning higher wages one year after graduation than were students who pursued higher education. (The latter were in part-time or summer jobs.) However, more recently, we have found that the wages for individuals who went to work right after high schools have dropped below the wages of the part-time and summer jobs of students who went on to college. The labor market has absolutely dropped out from beneath the young workers with only a high school education!

I believe that the data and conclusions from the paper and from my reactions lead to the following policy implications. At the EU level, policymakers will get more "bang for the buck" out of job/internal mobility enhancing measures than residential mobility measures. To wit, these policymakers should:

- promote (through research, resources, and data) ALMPs such as job search, retraining, etc.;
- maintain as part of their policymaking arsenal marginal incentives to relocate or to locate jobs in areas with substantial labor surplus (taxes, subsidies, provision of infrastructure, etc.);
- promote telecommuting;
- promote the easing of institutional barriers to labor market flexibility (I quite realize that these barriers emanate from historical practices, culture, and policies that have long traditions.); and
- invest in general skill training and education.

At the member state level, I believe that policymakers should:

- promote ALMPs;
- target those educational programs and industrial sectors for which the state has particular excellence, i.e., grow through a strategy of targets of excellence; and
- promote entrepreneurship.

In closing, I would like to weigh in with some political advice. I am an elected politician; I serve on my local school board. I have been elected twice to four-year terms, and am right now, beginning my third campaign. I believe that local school district decision-making is not all that different from EU employment policymaking. Let me explain with the following analogy. In schools, we spend perhaps 1/3 of our resources on the top 15% of students, 1/3 on the bottom 15% of students, and 1/3 on the middle 70%. My job as a school board member is to allocate the marginal dollars. There are good arguments to be made for investing those dollars in each of the three groups. The top 15% will be the leaders of tomorrow's society and economy (and furthermore they are the strongest group politically.) The bottom 15% is the most in need of assistance. The middle 70% are the largest group and are the "backbone" of society and the economy.

In the EU, you no doubt have the "high flyers"-- top performing member states, sectors, or regions; the "low end" member states, regions within member states, or demographic groups; and the "backbone" middle of the distribution. You need to allocate substantial resources to each of these and to have advocates for each. But my guess is that whether you achieve your stretch goal of becoming the world's foremost knowledge-based economy depends on making the right decisions at the margin. (I'm not going to hazard a guess as to what is correct!)

Finally, on the "does education matter" question, I firmly agree with the points made in the discussion yesterday afternoon. You will not achieve economic vitality by a strategy of investing in or restructuring your elementary and secondary education systems.

There is just not a sufficient linkage to the economy. In the US, the dire warnings of the A Nation at Risk report were absolutely wrong. The US shortly after its publication enjoyed the longest and strongest economic expansion in history. It is nevertheless important to work toward continuous improvement of education because we need to be efficient with public resources, we shouldn't rely on second chance programs and systems to serve young people, and because children are our most important resource. We truly want No Child Left Behind (as in the recent Bush education act in the US). We want everyone to get to the starting line with equal advantages.

Thank you.

Summary and Comment

Summary

Professor Robert Lindley, University of Warwick

1. INTRODUCTION

Higher investment in skills and more mobility may produce better jobs, faster economic growth, and happier citizens but the benefits may not be as widely felt and may not be as sustainable as hoped for without judicious public policy choices. The aim of the conference on *EU and US Labour Markets in the 21st Century: Skills and Mobility* was to shed light on some key developments in the labour market, examining them from different standpoints, clarifying problems that are said to accompany them, and exploring related policy strategies.

The context

The diversity of participants at the conference was matched by a diversity of formal contributions from the main speakers and discussants. This produced an interchange in which the debate swung backwards and forwards from one set of perspectives to another: from those of national civil servants and European Commission officials concerned with the development of policy, to those of employers and trade unions dealing with labour market conditions in practice, and to the perspectives of social scientists trying to make sense of complex realities in ways which can be useful to the policy and practitioner communities.

Of course, the conference did not cover all the key aspects of either skills or mobility and no attempt is made to go beyond the main scope of the discussion in this written version of the conclusions given by the author in the final session.

In what follows, Section 2 seeks to extract, mainly from the opening session of the conference, an impression of the ‘policy moods’ in the EU and the US and to suggest where the principal similarities and differences lie. Section 3 considers the importance of the trend towards higher skills, the reasons for it and some related implications. Section 4 explores the relationship between the growth in skilled work and visions of the knowledge-based society. Section 5 deals with the significance of different types of mobility in a high skill economy and the implications of this for policy. Some concluding reflections are given in Section 6.

2. POLICY MOODS IN THE EU AND US

The opening session put several issues on the table. The EU’s concerns about its relatively low employment rate and its need to increase investment in human capital are now being brought together more strongly with the longer-standing commitment to the

Single Market objective on 'freedom of movement'. The EU Action Plan on Skills and Mobility has been the result. So whilst the extent of structural unemployment in Europe is seen to be moderating, the policy community is not complacent about the importance of driving it down much further partly through promoting mobility. The prospect of enlargement of the EU reinforces the importance of mobility in the form of migration within the larger region.

At the same time, in the US, the profile of active labour market policy has been raised as the need for government to work more effectively with business to meet training requirements has moved up the policy agenda. This is taking place against a background where the US business sector already spends $300 billion per year on training, more than the total budget of US institutions of higher education. Alongside this, we find that the US Departments of Defense and Labor are seeking to bring the training promoted by the former more into line with what might also serve the needs of the rest of the economy. The potential implications of this for the US economy and its competitors may be judged by the fact that the Department of Defense spends $14 billion a year on training, making it the largest single training provider in the world.

In both the EU and US but in different ways, the spotlight has turned on the deployment of older workers and on the role of migration in a period of population ageing. In the case of older workers, the EU, starting from a lower base than in the US, is more acutely concerned to increase labour force participation by lengthening working life through questioning early retirement solutions to redundancy situations and sickness and through re-assessing the normal retirement ages embedded in state and private pension schemes. Both EU and US participants saw the improvement in educational and training opportunities for people over longer periods of working life as an important part of the policy strategy.

In the case of mobility and (external) migration, the EU's emphasis is on the former as a means of improving the matching of jobs to workers whereas the US focuses more on the latter as a means of raising overall labour supply. In effect the EU has more gains to make in allocative efficiency through geographical and occupational mobility whereas the potential for such gains in the US is seen to be very modest. Migration in the EU context is much more a matter of policy relating to citizenship, security and foreign affairs than a tool of economic management. This is not to deny the importance of economic migrants as a social phenomenon, however, nor that it does have significant labour market effects.

More common ground seemed to emerge in the case of dealing with discrimination in the labour force. The 'mainstreaming' of anti-discrimination policy in the EU is partly a political strategy to increase its impact but also a somewhat belated recognition that the market inefficiency resulting from discrimination (notably through gender, race, age and disability) is economically costly as well as unfair to individuals and socially divisive. Echoing this view, one US participant put it thus: 'This used to be a moral imperative - now it is an economic one.'

The opening session also recognised the importance of ensuring that the policy-development process stresses learning from the performance of other countries, allowing for differences in cultures and socio-economic contexts. The role of peer review within the framework of the European Employment Strategy was seen as an example of a wider developing art, which also included 'benchmarking' against the USA and Japan. Attention was also drawn to the need to make more sophisticated use of information technology to enhance the labour market information system. The US has particular cause to claim the lead in this through having grasped the basic economics of information and by making available much more *analysis* via web sites (see the contributions by Horrigan and Hymes) so that the extended policy and practitioner communities can benefit from *intelligence* rather than just *information.*

Underlying much of the discussion of the issues summarized above, however, was a common concern with the problems of providing universally high quality provision in the compulsory school system and at later stages of education and training. Not surprisingly, particular reference was made to the presumed effects of these problems on the ultimate supply of people with science and technology qualifications. But greater urgency was lent to this because knowledge was now seen as the driving force behind economic change. Explicit in the discussion was the notion that this was intensifying the need for more science, technology and ICT specialists. Implicit was the view that a greater understanding of the first two and direct competence in the third would be required across a broader part of the occupational and industrial structure than hitherto.

3. TRENDS TOWARDS HIGHER SKILLS

The strong rise in the demand for people with higher levels of skill is due not only to the faster relative growth of sectors that employ such people, but also to their rising proportions among the labour force even *within* sectors that are not growing so fast or which are declining. Michael Horrigan's paper documents this for the US, but the same is also true for many EU Member States. Indeed, in some EU countries, the relative employment effect is stronger and there is little evidence of the element of modest 'polarization' found in the US, i.e. growth at both ends of the occupational spectrum. Several explanations have been advanced for the rising employment and earnings of skilled relative to unskilled workers. In addition, studies of generic skills have identified an increase in the demand for these and in the complexity of skill mixes expected from the workforce.

Factor price equalization theory addresses the importance of the pressure arising from the availability of unskilled workers in developing countries upon labour market situations in industrialized economies. Paul Krugman and others have acknowledged the existence of the effect but give it minor importance. Richard Freeman has noticed that EU economists are much more likely to attribute relative changes in the fortunes of skilled to unskilled workers in the industrialized countries to the impact of foreign trade.

One reason for the minor effect is the size of the non-traded sector - re-distributive social policy can be used to cope with the consequences. Another reason is that studies examining the impact of trade focus on the wrong aspect of trade, that between developed and third world countries, whereas what matters is trade between developed countries - opening their markets and integrating their economies - as a result, skilled working conditions (especially earnings) become 'detached' from those of the unskilled.

However, the most compelling explanation for rising relative employment and earnings for skilled people is the one mentioned by Michael Horrigan in his presentation: skill-biased technological change. This hinges on the complementarity between capital investment and employment of skilled workers. In contrast, for specific tasks requiring modest cognitive skills, substitution is very strong, particularly in the manufacturing sector though the same applies to retail and financial services.

Other reasons come from the supply side especially the notion of 'filtering down' of qualified people as they find that jobs at a higher level elude them but those at a lower level can be colonized for as long as this is necessary in an economic recession.

However, although the returns to skill resulting from education and training are buoyant, other points need to be made.

i. Michael Horrigan's analysis of educational and occupational perspectives on earnings shows considerable variability within educational groups. Thus, even those convinced of their own ability through their accumulated experience of the education system face uncertainty about the labour market returns they are likely to get from their investment.
ii. Moreover, at the aggregate rather than individual level, just because the supply of highly skilled people has not out-stripped demand so far, this does not mean that this could not happen in the next decade.
iii. However, in both the EU and the US, demographic scenarios suggest otherwise.
iv. Visions of the knowledge-based society imply a further intensification of demand for the highly skilled. Periodically over-heated labour markets for IT specialists offer fuel for both predictors of crisis and more skeptical commentators. However, it is the *broadly based* occupational nature of the underlying trend that is most significant rather than situations in particular high-tech labour markets.

4. THE KNOWLEDGE-BASED SOCIETY

Over the last three decades various metaphors have assumed a role as currency in the intellectually debate about the relationship between technology, employment and economic growth. The 'micro-economic revolution', 'information society', and the 'learning society' have given rise to the 'knowledge-based society' and, to some extent, this further vies for attention with the 'network society', 'weightless economy', or the 'new economy'.

In the present context, however, the basic justification for using the metaphor of the 'knowledge-based society' was evident in the conference. For participants, taken collectively, it seemed to consist of the following.

i. A diversification of the location of knowledge production in the economy such that knowledge is not just created at sites of recognized scientific and development activity but arises and is codified in many other settings. This involves some modification to the notion of 'knowledge' and the nature of what might be called 'knowledge production'.
ii. The application of knowledge-based procedures to the production and exploitation of knowledge itself. This not only involves much better access to information already available in a manner, which makes its use more extensive and effective. It also covers the development of mechanisms for identifying tacit knowledge held by individuals and making it explicit and capable of being shared.
iii. A much greater willingness to seek out and consider what is known and to bring what is practiced more into line with what is known.
iv. Moreover, whilst these ideas may be seen as being related largely to those in higher level occupations, visions of the knowledge-based society imply that such approaches will also be found among people in broader parts of the occupational hierarchy, reflecting on their practice; on why they do their job a particular way, on its relationship with other jobs and how they might do it differently.
v. The uncertainty that attaches to the returns to investments in human capital, documented by Horrigan, is, however, compounded by an asymmetry in the basic information accessible to individuals and employers about the other. There has been increasing transparency of both education and vocational training qualifications held by individuals in the EU and certification is being extended to include generic skills and to wider areas of work-based training and development. In contrast, independently validated information available to job seekers about the qualities of organizations is still hard to come by for the average member of the work force.
vi. Finally, one of the profoundest implications of the knowledge-based society is for the way the policy development system itself behaves in its approach to standards of analysis, to the role of routine monitoring and evaluation, and to the overall relationship between policy design and evidence.

The notion of the knowledge-based society has followed hard on the heels of the 'flexibility' debate where the Anglo-Saxon model is seen to produce a shortening of both implicit and explicit contracts, narrowing of commitments embodied in those contracts and the replacement of principle by pragmatism (especially in the public sector). That, in turn, has led to an increasing emphasis on individuals taking responsibility for their own learning and careers. This points to high levels of personal and household investment in education and training accompanied by high levels of potential mobility in which people seek to get the best returns from those investments.

Yet the knowledge-based society is not just about knowledge as produced, disseminated and exploited via the external market; it also embraces ideas about relationships within the internal market of the organization. Certain inconsistencies then seem to arise between advocating greater flexibility of contracts at the same time as trying to nurture processes that foster active organizational learning, sharing knowledge, co-operative creative behavior and loyalty to organizational goals. It is in this nexus that modern conceptions of social partnership in continental Europe and progressive ideas about what constitutes a high performance organization in the US begin to have some common ingredients. However, these can undoubtedly be over-stated and, given its primary focus, the conference did not pursue such matters very far.

Seeing the rising demand for skilled people, governments have tended to become pre-occupied with raising the quality of the labour force and worker motivation to train and be mobile, as opposed to the quality of organizational designs within which people are subsequently deployed. One reaction might be to say that the latter is the responsibility of business and the state should just concentrate on ensuring that vigorous product market competition will eventually force persistently poor-performing organizations to the wall. This will enable others to step in and offer better uses for the resources freed up. EU policy clearly does not accept that such a strategy is sufficient either to ensure that many more high performing organizations ultimately emerge or to speed up the process of learning and experimentation that brings this about. Competition policy and the internal market strategy have limited range partly because of difficulties in coping with transnational enterprises and partly because of large non-traded and non-market sectors. Thus, a critical factor in the process of producing stronger organizations, as seen in continental Europe, is the potential contribution that employees and trade unions can make to such development.

This raises the issue of what trade unions should now see as their roles in economic and social development. The importance of trade unions as providers of training courses is growing in the US. But whilst such activities are important, there is still the underlying trend of occupational growth occurring typically in areas of low membership densities. At the same time, three-quarters

of young workers in the US do not get college degrees. Young workers are especially concerned to hold employers to account to provide basic health and pension programmers.

The tensions implied in these simple stylized facts about the US are considerable. From an EU perspective, they seem to offer a heightened interpretation of the conflict between flexible labour markets and the needs of high performance organizations. For if an employment relationship should deliver long-term security in relation to health and retirement living standards, it needs to be based on somewhat more than the outcome of opportunistic recruitment and retention activity. It seems likely to over-burden such a relationship to expect it to deliver sufficient human capital development when it might already be struggling to support health and pension obligations. Ironically, ignoring existing policy obligations, it is the latter that could, in principle, be most easily separated from the employment relationship, requiring, as they do no special expertise that pertains to the core business activity in question.

Another perspective on the knowledge-based society stems from the way discussion of it is related to wider public awareness of the imperatives thrown up by technology, demography and globalization. Many vested interests populate this field of debate: these tend towards the emergence of management fads, excessive marketing of change scenarios, the underplaying of elements of continuity, and lack of attention to making sense of change for the citizen or employee. The more macho interpretations of business process re-engineering, for example, led to organizational failures through neglecting human resource factors and the significance of retaining corporate memory.

Finally, some social scientists on both sides of the Atlantic have cautioned against accepting the rhetoric of the flexibility debate as describing reality. The same might be said of their views of the knowledge-based economy. The caution amounts to questioning the extent of the change in labour market experience. Reductions in job tenure in the US and in most EU countries have been modest. They do not amount to the demise of the capacity of internal labour markets of larger organizations to distance themselves from the logic of the external markets that have such effects on small and medium-sized enterprises (SME).

MOBILITY AND THE KNOWLEDGE-BASED SOCIETY

The dominant visions of the knowledge-based society imply that greater mobility is needed for these visions to be realized. Certainly it does not sound as if the pace of life is likely to slow down. And the faster it gets, the weaker members of society are likely to be left behind in the race. Will countries whose populations have higher propensities for mobility be more successful? Should public policy encourage greater mobility and, if so, what kinds of mobility should be fostered?

Before the conference got on to those questions, Gerry Coomans examined the nature and extent of mobility. He focused on *geographical* mobility (i.e. *internal* migration within the EU or the US) and *job turnover*. The first leaves out *external* migration between the EU (as a whole) or the US and other countries and the second leaves out both *changes of job not involving a change of employer* and changes of *occupation* whether or not this involves a change of employer. Note that in the paper (section B) he actually refers to *job turnover* as *occupational mobility.* Here, the latter term will only refer to mobility involving changes of occupation.

Coomans rightly stresses the diversity of experience within the EU. It is worth noting, though, that the paper then follows standard EU practice in which it is rare to allow for diversity *within the US*: the typical comparison being made between the EU or an individual member state and the whole of the United States. Yet variations within the latter are considerable and this means that the EU scientific and policy communities fail to exploit as much as we could the experimental variation available from exploring US experience.

This is a notoriously difficult area in which to make international comparisons. The commentary draws on the paper and the discussion, first, by turning to the phenomena that that the paper *did* consider and, then, by addressing the significance of those that were not covered.

In both cases, the starting point is the issue of skills and the knowledge-based society. The latter perspective goes beyond the usual issue of mobility as a process by which supply and demand are reconciled in the short-to-medium run to that of mobility as

a means of maximizing the return on investment in human capital over the long run. Thus it emphasizes not only increasing allocative efficiency in the labour market but also increasing the potential productivity of the labour force. Some loss of allocative efficiency may well be acceptable if it results in higher labour force potential followed by employment in higher-value added activities.

The obvious case is where, in order to invest in education and training, it is necessary to reduce the contribution that the individual makes to current production, often even to zero. Concepts of life-long learning extend this process over more of the working-life and, partly in order to do so, explore the extent to which the opportunity cost of such learning can be reduced by making it 'work-based' and fashioning 'learning organizations' that make the process as effective as possible.

At this point, the knowledge-based society metaphor takes over. The organization then becomes not just a learning organization but also one engaged in knowledge production and sharing. This is highly demanding, requiring well-qualified people at all levels not just because of what they know already but also because their *experience* of education and training is a *necessary* condition for them to participate effectively in the knowledge-driven organization. It is not, however, a *sufficient* condition and the discussion also underlined the motivational and other personal qualities needed over and above generic and occupation-specific training and experience. Moreover, if more of such people are produced, the more they will seek out employment opportunities that offer them scope for continuous learning.

Coomans puts this point in a rather different way by stressing the fact that rising educational levels in the EU mean that companies will find it easier to recruit better educated people and, if they are willing to invest in organizational innovation, they will be able to get much more out of them. He goes further to point out that companies that are content to pursue the low skill - low value-added strategy will find it increasingly difficult to find people who want to join them in doing so.

Does this mean, though, that what matters is not the low level of *external* mobility in the EU relative to the US but the degree and adaptability and mobility taking place within the *internal* labour markets of organizations? This seemed to be the consensus, though the data on internal mobility are very weak. Two aspects were stressed relating, first, to the need to allow for the impact of technology and other factors on the spatial relationship between home and work and, second, to their impact on the content and delivery of education, training and life-long learning.

As regards the 'home-work' nexus, the importance of commuting is emphasized in Coomans' presentation but some participants noted the absence of analysis of the potential of 'tele-commuting'. This changes the nature of commuting options and, in suitable cases, can make 'commuting' an even better alternative to residential mobility.

Whilst extended forms of 'commuting' may be seen as likely to increase, so we might also expect this will happen in the case of 'quasi-external' migration. A large part of international migration among managerial and professional occupations actually takes place *within* the internal labour markets of multi-national enterprises. The exploitation of new technologies combined with the growth of international networks which cut across corporate boundaries could well mean a growth in the relative importance of a hybrid form of 'commuting-migration', i.e. short-term *long*-distance movements involving limited duration visits by professionals, rather than migration of residence and principle work place. These may take place within internal labour markets or within networks of high-level service transactions.

The second factor bearing on adaptability and mobility within the internal labour market relates to the consequences of the faster obsolescence of skills that are not continually up-dated. The boundaries between 'occupational mobility' and such processes as 'de-skilling', 're-skilling', 'up-grading' and 'multi-skilling' are not hard and fast in that any of those processes can be associated more or less with a change of occupation within the organisation or involving ultimately the external labour market. Some discussion took place essentially around three observations that the faster the obsolescence of skills:

- the more difficult it is to identify and deliver in the external education and training systems up-to-date curricula and the certification systems to accompany them;
- the more important it is to concentrate on giving a good *general* education to all young people and offering opportunities for adults to remedy their lack of this;

- the more the employing organisation will find itself assuming responsibility for promoting learning and the acquisition of new skills;
- yet employers too will find it more costly to design training programs when skills needs are evolving quite quickly;
- so the balance of attention between supporting education and training in the external markets for provision of these and supporting work-based learning is a crucial policy parameter, whichever country is being considered;
- and addressing these issues is likely to draw public policy into taking more notice of the quality of employing organisation not just the quality of education and training.

In these circumstances, geographical mobility *per se* seems to be less important than occupational mobility and external occupational mobility seems less important than internal mobility.

6. CONCLUDING REFLECTIONS

The knowledge-based economy is another context in which the relationship between 'economy' and 'society' is evolving and being debated. How can we promote efficiency and equity at the same time? Recognizing that inequity can be the product of market failure, there has been a shift towards 'mainstreaming' the policy of anti-discrimination in economic terms, not just regarding it as part of narrowly defined social policy. The EU debate about social policy as a 'productive factor' is a broader case of this.

The prospect of a knowledge-based society also presents a new context in which to re-think the division of responsibility for continuing education and training as between, the individual, employers and the state. A mixed strategy seems to be necessary. One element should aim to improve initial education and open access to the equivalent for those adults whose basic skills are weak. Another element should recognize that many firms are too small to have 'internal labour markets' and the professional development structures to go with them, so a strong external market for high quality provision is needed. The benefits of this can be reinforced by nurturing partnerships between these organizations and between them and larger firms. A final element should aim to enhance the quality of internal labour market transactions in the latter organizations, from both employer and employee points of view.

If we assume that inequality is only acceptable if it benefits the absolute welfare of the most disadvantaged. The education, training and development of the most able should be subsidized only to the extent that it helps to remove bottlenecks to the employment of the least able. But, if promoting the educational attainment of some, and their capacity to work at higher skill levels, is to unlock a wider participation in the benefits of the knowledge-based economy, there also needs to be something else.

This amounts to a strategy concerned with the situations of firms and organizations in parts of the economy which generate lower quality jobs than they should do. Thus their problem is not the fact of facing highly competitive product markets for low value-added goods and services; nor is it primarily an inability to find suitable employees, though that can exacerbate the situation. The main problem is that they have poor entrepreneurial styles and organizational designs. Part of the vision of the knowledge-based society embraces the idea of strengthening the SME through the professional development of entrepreneurs, increasing the flow of well-qualified people into these sectors. This would greatly extend the scope for generating higher levels of skill and greater amounts of purposeful mobility over wider parts of the economy.

Comment

Tevi Troy, U.S. Department of Labor

The discussions throughout the 2-day conference have offered much food-for-thought. I could mention several of them but I will focus on only a few that most touch on the U.S. experience. To succeed in the 21st Century, our nation must be prepared to embrace the changes in our economy - in how we work, where we work, and how we balance our professional and family lives.

***BLS Projections for 2000-2010*:** Of the 20 fastest growing occupations, 9 are computer related including the 7 fastest growing ones. The increasing importance of computers and computer networks in nearly every industry will sustain this rapid growth through 2010.

- *Our demographic destiny*: In a few years we will have a growing class of retirees and a shrinking workforce. In addition, there will be an increasingly diverse group of Americans entering the workforce, bringing with them the need for new ways of organizing and managing work.
- *Globalization and Technology*: Increased global competition will continue to affect the type of work being done in American workplaces, creating new high-skilled jobs and lessening the demand for low-skilled work. More of the economy will be involved in producing exports or competing with imports, as globalization expands.

***Education and Training Requirements of the New Economy*:** Increasing access to postsecondary education or training has become the new threshold requirement for the competitiveness of national workforces as well as for career success among individuals within nations. In 1959, 29% of the workers in the top two-thirds of the earnings distribution had some college, compared to 69% in 1998.

Skills: Skills and education will be dominant, if not decisive factor in our ability as a nation to compete in the global economy. Having the best skilled workforce is as crucial to our economic growth and the quality of our society as technology itself.

***Mobility*:** The technological changes occurring in our world, especially the Internet and e-mail, make it increasingly possible for workers to telecommute, at least part time.

***Flexibility*:** The challenge of flexibility and family as employers seek more flexibility to compete in the global marketplace and workers pursue more opportunities to spend time with their families**.**

Let me close with the followig comments. Our economies are all facing a future where skilled workers will be in heavy demand, while the number of workers available will decline. This is new territory for most of us. We need to continue to work together to discuss best practices and approaches to meet these challenges.

Some solutions are more readily apparent than others. For example, bringing into the workforce more of those groups typically not included there, such as people with disabilities, disadvantaged workers, older workers, etc. However, how exactly to accomplish this is not straightforward. We must share our experiences - our failures as well as our successes.

Having a more mobile workforce is also part of the solution. Oftentimes, we have workers with the ‘right’ skills but they live in the ‘wrong’ place. Information on available jobs is very important to facilitate workers’ relocation. Job information, training opportunities, wider recognition of skill credentials, and housing availability are all-important elements to having a mobile workforce.

We also need to look at the role of immigration. The U.S. has a long history of accepting immigrants. They have been a key building block for our economy. In 2000, foreign-born residents made up about 10 percent of the U.S. population. Our continued openness to immigration will allow us to reap the benefits of the presence of newcomers from many countries.

Finally, I want to conclude my remarks by thanking the Employment and Social Affairs DG for hosting this event. The stimulating and informative exchanges we’ve had yesterday and today have certainly reflected this effort.

Thank you.

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