

# THE INTERNATIONAL PERSPECTIVES



Universiteit Utrecht



**Collaborating Universities:**

- Delft University of Technology, Maurits de Hoog
- Utrecht University, Martin Dijst and Bas Spierings
- University of Amsterdam, Willem Salet and Sako Musterd
- Erasmus University Rotterdam, Geert Teisman and Lasse Gerrits
- VU University Amsterdam, Henri de Groot, Peter Nijkamp and Erik Verhoef
- Leiden University, The Hague campus Jouke de Vries
- Leiden University, Leo Lucassen

Deltametropolis Association is a broad public organisation that focuses on shaping sustainable development in Randstad Holland. The association brings together businesses, public interest groups, research institutions and governments. Deltametropolis Association enables and works towards creating a socially supported design of the Randstad metropolitan area, focused on welfare, prosperity and strengthening its international competitiveness.

Deltametropolis Association offers a platform for discussion: it creates the space to develop new ideas and critically discuss Randstad Holland outside the usual frameworks. It is a laboratory for prioritising innovative issues and for promoting the debate on the future of Randstad Holland. In this way, the association aims to promote new ideas on the development of Randstad Holland and to help apply these in everyday practice.

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**REPORT tIP 07|07**

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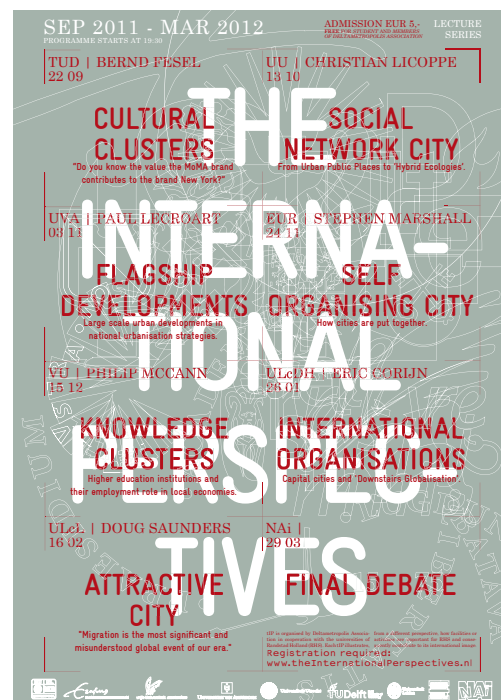
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# The International Perspectives

*Deltametropolis Association, in collaboration with the universities of Randstad Holland, has initiated several projects with the central theme: the Metropolitan Functions. In this programme, Deltametropolis Association researches how facilities and urban environments can help define the metropolitan atmosphere of the city.*

The International Perspectives (tIP) forms part of this programme on metropolitan functions. In this series, Deltametropolis Associations explores the importance of an international perspective when (re)developing facilities and urban environments in Randstad Holland. tIP is a public series of events which reflects on how facilities or activities transform an urban area into a metropolis. It consists of a series of 7 public lectures with inspirational international speakers, and 7 private expert meetings. The tIP results will lead to a final debate and a publication in the spring of 2012.

The series take place from September 2011 to March 2012. Each of the 7 lectures will take place on a Thursday evening, starting at 19.30. Every university in Randstad Holland will host a tIP, each focussing on a different specific theme. These themes are: Cultural Clusters, Social Network City, Flagship Developments, Self Organising City, Knowledge Clusters, International Organisations and Attractive City.

In each of the 7 lectures, an international speaker will present how facilities or activities that are important for the development of a city or urban area. Following the lecture, representatives from the hosting University will give a reflection, applying its content to the Dutch context.

An expert meeting with selected academic, entrepreneurial and governmental guests will take place next to the lecture. The expert meeting will take a more in-depth look at the theme of the lecture, applying it to the case study. The guest speaker will then reflect on the research presented by the hosting university.

This is the report of the third lecture and expert meeting held at the VU University Amsterdam on the 8th of March, 2012. The theme for this tIP was Knowledge Clusters and the guest speaker was Philip McCann.

[www.theInternationalPerspectives.nl](http://www.theInternationalPerspectives.nl)

# Introduction

Paul Gerretsen

This series of lectures, initiated by Deltametropolis Association, aims to answer a broad question on urbanity, namely: what produces it? Besides the presence of the needed hardware, infrastructures, visitors, parks, and open spaces, we believe there is ‘something else’.

These lectures hope to kick start the process of formulating the question on how the future of metropolitan Randstad Holland should be developed. The question is particularly relevant for the Netherlands as, although it is very internationally oriented, it lacks a strong, dense, central metropolitan area, which many other comparable economies do possess. Our search thus asks: can the Netherlands build on a metropolitan identity to create such a central metropolitan area? And what is needed to produce it? What functions, dimensions, collaborative formulations and elements are necessary to improve the existing centres? And where do all these functions come together? In short: how can large scale urban developments be constructed and put forward?

This seventh and final expert meeting and lecture was held at the VU University of Amsterdam (VU), Faculty of Economics and Business Administration, on the 8th of March, 2012. It was hosted by Henri de Groot, Professor in Regional Economic Dynamics (VU). The guest speaker was Philip McCann, Professor of Economic Geography at Groningen University and Special Advisor to the European Commissioner for Regional Policy. Philip McCann has been examining the relationship between education, employment and locality. In his view, higher education can significantly improve life chances, whilst also playing an important employment role in local economies.

As our guest speaker, we asked him to reflect on how universities in Randstad Holland can use their expertise to push forward the knowledge economy in these regions. Randstad Holland currently has 6 universities in the official Times Higher Education Ranking of the world Top 200 universities (2011-2012). By subject, 3 of these universities are placed in the Top 50. What does this mean for the potential of these universities, their locality and their meaning at a global scale?

[What is the meaning of the results of Philip McCann's research for the Randstad Holland universities? And how can these universities push forward the knowledge economy in the cities of Randstad Holland?](#)

An expert meeting was also held in which Maurits de Hoog, Professor of Urbanism at the Delft University of Technology (TUD) presented his research on Environments of Interaction, with a specific focus on knowledge campus clusters. Henri de Groot, Professor in Regional Economic Dynamics and the VU University (VU) also presented his research on micro-data and agglomeration externalities, and their influence on knowledge clusters.



PHILIP MCCANN





# Lecture

## Higher Education, Cities and Regions

Philip McCann

This focus of this lecture was the relationship between higher education and urban areas, from the view point of the universities. In order to answer why universities are so important, Philip McCann used statistics provided by the Organisation for Economic Co-operation and Development (OECD). These are freely available via [www.oecd.org](http://www.oecd.org).

With the backup of these figures, Philip McCann demonstrated the role of universities and explaining why they are not only important for university staff and students, but also for broader societal issues on the whole. He did so by looking at education at the tertiary level, in the European context; also how it has been changing recently; and what this means for the Dutch context.

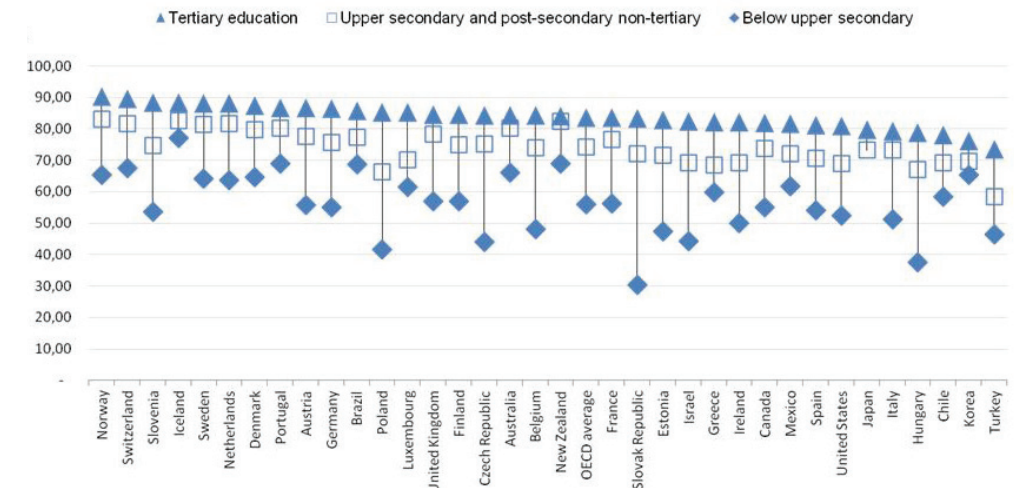
## Education at the tertiary level

Examining education at the tertiary level is a good starting point for putting down a marker as to what the priorities are. Tertiary education (i.e. the university sector) and knowledge are important for they give both direct and indirect effects. **Students want knowledge because it helps them start businesses, develop new ideas and improve their future careers** for example. On the other hand, there are also derived effects of knowledge, which are mainly on the part of **companies and businesses that want knowledge input for their human capital**. There are thus both direct and indirect effects of knowledge, and these are on-going and often difficult to distinguish.

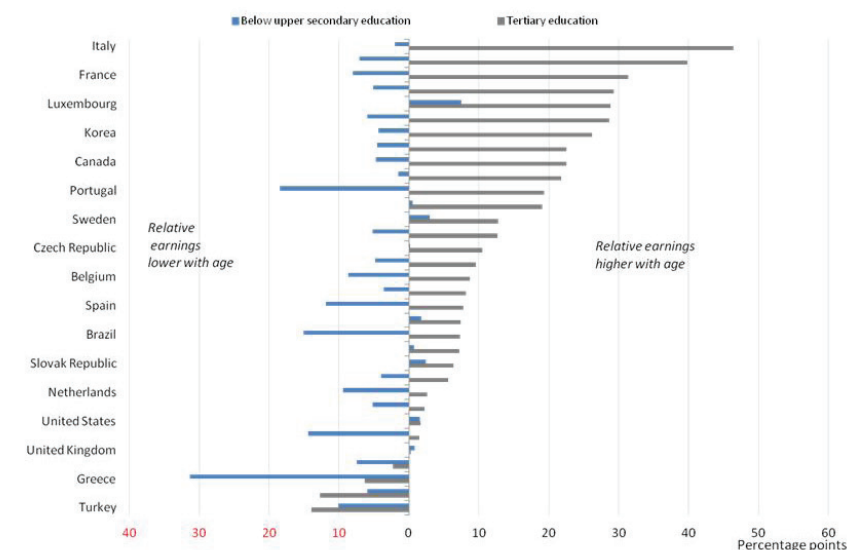
There is widespread evidence on the gains of education and its distributional effects, es-

pecially in terms of tertiary education. Tertiary education is becoming more important than ever, not just at the individual level, but also at the aggregate, national level. This is what Gary Becker and Jacob Mincer referred to in their theories of human capital and earnings functions. These theories argue that **people have incentives to invest in themselves through education, because this will ultimately bring them positive returns on the long run (e.g. higher wages, higher mobility, better jobs etc.)**. This results in very specific sector relationships, where wage effects can clearly be detected throughout the lives of people.

What can be observed, for example, is that once young people graduate from their (tertiary) education and enter the employment market, they tend to start off on relatively low wages, but accrue knowledge at a



Countries are ranked in descending order of the employment rate for individuals with tertiary education. Source: OECD, Table A7.3a. See Annex 3 for notes ([www.oecd.org/edu/eaq2011](http://www.oecd.org/edu/eaq2011)).



Note: Belgium, Korea and Turkey report earnings net of income tax. The Czech Republic, Hungary, Luxembourg, Poland, Portugal and Slovenia report earnings excluding data for individuals in part-time work. Hungary, Luxembourg, Poland and Slovenia also exclude data on part-year earnings. Countries are ranked in descending order of the difference in relative earnings among 55–64 year-olds and the total population (25–64 year-olds) at the tertiary level of education.

phenomenal rate. University graduates who move into employment are essentially the people who learn the quickest. In this sense, universities play a bigger role in teaching students how to deal with issues and how to apply them, than in teaching them new things. Education is therefore more than just about knowing things: it is about the learning effect and the speed with which you can know other things.

With time, this phenomenal rate of knowledge accumulation becomes apparent in their wages. These wage increases eventually level out later in their careers however, so the wage patterns form a concave-like shape in accordance with their rate of skills accumulation. For graduates of higher education, this levelling takes place at a higher level than for lower educated people.

In Australia, higher education is clearly

benefiting the country as 80% of the value added to the Australian economy is accounted for by university graduates between the ages 25 - 40 years old. This does not mean that these graduates are paid the highest wages, because wages are generally determined on the basis of accumulated experience. The growth effect, however, is immense, and Australia is clearly benefiting from all these young educated people in terms of gaining knowledge and technology expertise.

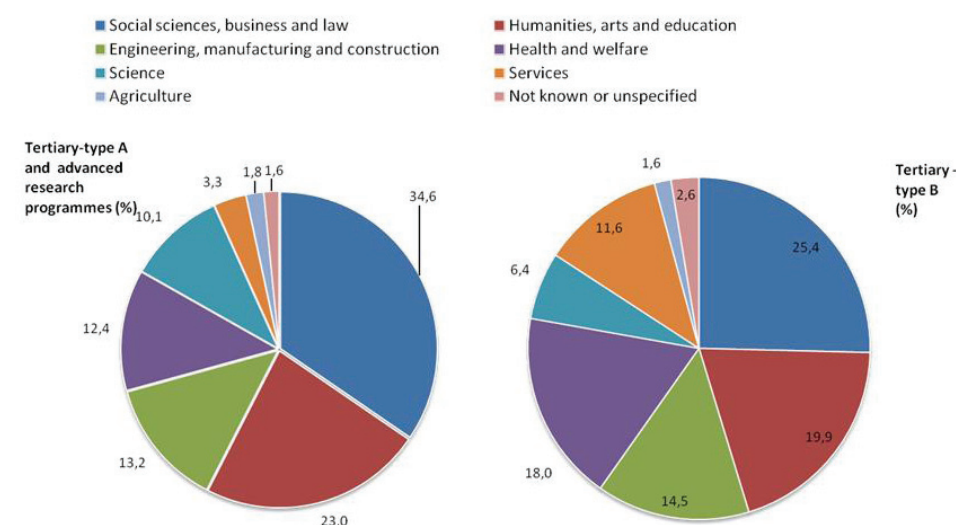
### Knowledge Types

Broadly speaking, tertiary education can be classified into two categories: type A and type B. Type A refers to the pure academic, traditional universities, whilst type B covers the applied universities (including the community colleges in the USA). For both types, graduation rates are increasing in almost

all countries. This is a worldwide phenomenon, although countries such as Iceland, the Slovak Republic, Poland, New Zealand, Australia, the UK and The Netherlands are currently taking the lead. The reasons why this pattern is emerging, is because it is a response to private demand: i.e. people want it. Furthermore, businesses, firms and corporations also want it, because there is worldwide competition for increasing our knowledge. This is especially true for advanced countries, but also for developing countries. With these high rates of graduates, public provisions are also becoming more important, because these need to cater for the higher-skilled workers that are constantly entering the labour market. Supply (through public provisions), and demand are therefore both increasing.

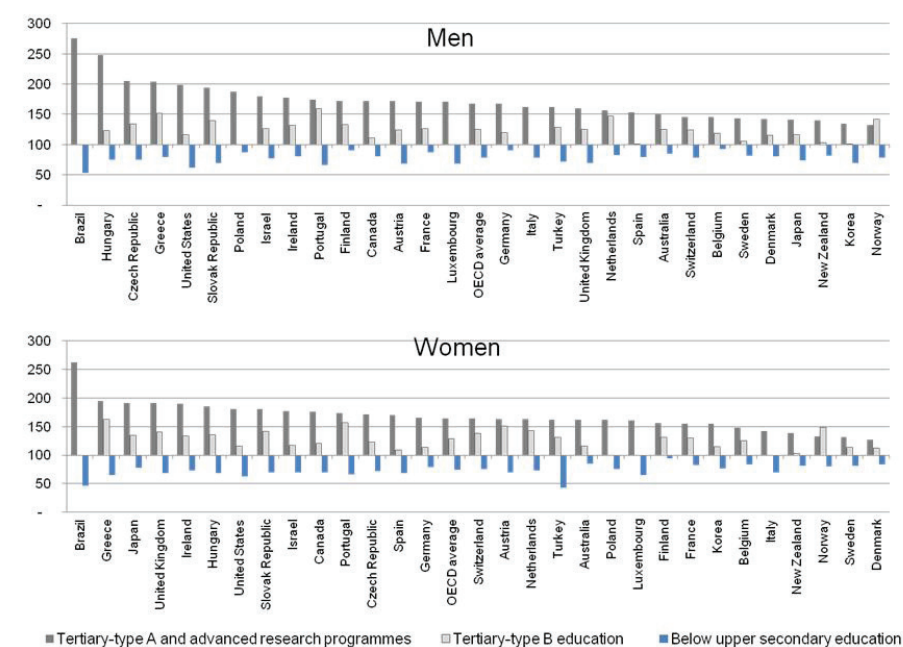
In terms of figures, it is interesting to note that women outperform men in almost

every single country in term of higher education rates. This applies across all the different age cohorts, and this point will later be referred to. Besides this, it has also been observed that productivity is related to tertiary attainment rates. This link between universities and productivity is constantly increasing, with some exceptions to the rule, i.e. there are some strong national performers with relatively low university completion rates, and also some weak performers with high university rates. These surprisingly include Germany and Switzerland, who have relatively low university attainment rates, and Poland and the Slovak republic, who score highly. There are thus some exceptions to the rule. On a global scale, The Netherlands scores on an average level, with relatively high graduation rates ( $\pm 45\%$ ), which are constantly increasing.



Source: OECD. Table A4.4. See Annex 3 for notes ([www.oecd.org/edu/eag2011](http://www.oecd.org/edu/eag2011)).

### REL. EARNINGS FROM EMPLOYMENT (25-64Y) BY LEVEL OF EDUCATIONAL ATTAINMENT AND GENDER





### Comparing systems

The argument for why (tertiary) education is important can simply be answered with “because the data shows it”. Besides the statistical data figures of the OECD, the theoretical economics models also support this evidence. The main challenge in this research, however, is converting all the different worldwide education systems into a comparative, standardised system. This is being attempted with the introduction of the Bologna process, which aim to make education systems comparable at a global scale, in order to facilitate mobility and knowledge transfer. It is thus to do with accreditation and structuring. This is a huge, important challenge, as there are great differences between the education systems in different countries, and even within countries in some cases, i.e. private versus public; more

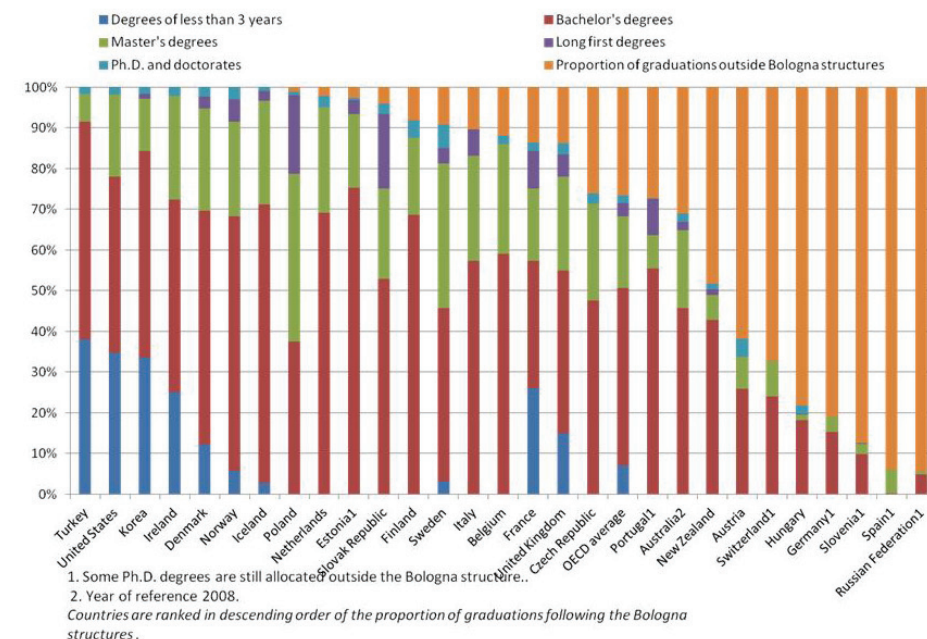
hybrid systems, the length of studies; levels of courses etc. A standardised system is also necessary for verifying these data comparisons, and it is an important, but long process of convergence. This convergence process is slowly happening though, and it effectively means that universities and faculties are increasingly competing in the same global market regarding communication, citations and quality of outputs. Universities are therefore no longer merely national knowledge centres, which also counteracts the risk of national monopoly positions. **By creating a standardised system of educational attainment, universities are open to students throughout the world, and this rise in mobility of ideas (and the people who embody these ideas), is raising the general level of worldwide (tertiary) education.**

In terms of study patterns, it has been ob-

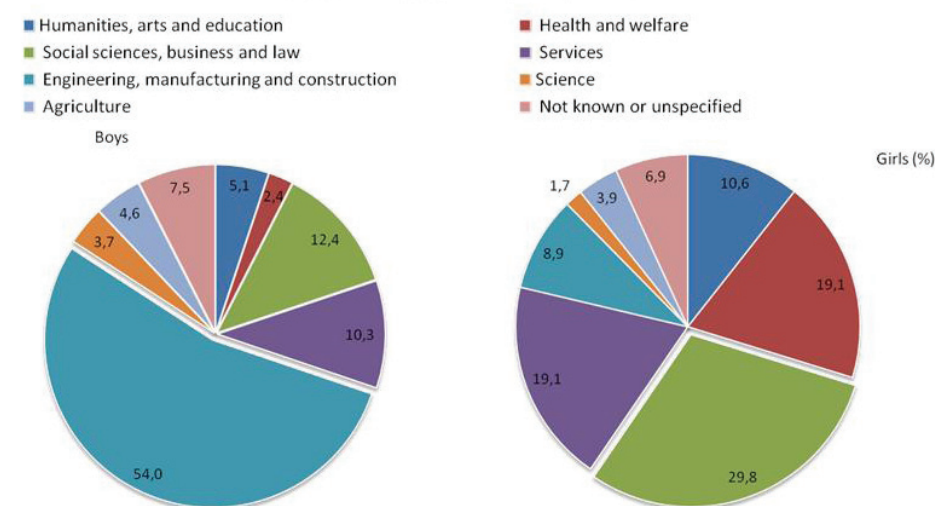
served that at the secondary and vocational level, men tend to be more oriented towards technical subjects (e.g. engineering, manufacturing and construction), whilst women tend to be more oriented towards service-based activities (e.g. health, care and education). Patterns of study are therefore different according to gender, but also according to institution. At the tertiary level for example, type B institutions tend to be more oriented towards services in the public and private sectors (e.g. business, accounting and law), and this is aggregated across all countries.

In terms of employment patterns, statistics have revealed that tertiary education graduates outperform all other groups, in every single country in terms of employment rates. The argument is thus that **the more educated you are, the better your chances are of getting a job. This is not an opinion, it is**

**based on objective, factual data.** It has also been revealed that **type A institutions typically outperform type B institutions in terms of mobility** and that the ‘lifetime wage premia’ (the increase in earnings that you build up in a lifetime for having the highest skill level for tertiary education) is higher for men than for women. In other words: **men earn more than women who have the exact same skills levels.** If this is then broken down into tertiary educated wage premiums, there are some global differences. In countries like The Netherlands, the USA and UK, wage premiums are lower for university educated people, than in countries like France and Italy. This is because countries like **The Netherlands base their promotional structures on the current marginal productivity of the workers.** Therefore, many companies in these countries are run by young people (Silicon Valley and the



### DISTRIBUTION OF GRAD. IN UPPER SEC. VOCATIONAL PROGR. BY FIELD OF EDUCATION AND GENDER



Source: OECD, Table A4.1a. See Annex 3 for notes ([www.oecd.org/edu/eag2011](http://www.oecd.org/edu/eag2011)).

financial markets in New York are extremely young for example). Countries like France, on the other hand, base their promotional structures on seniority according to the longevity of the worker's time at the business. Older people therefore tend to get paid more, because they have more experience. These differences are important to keep in mind, because they affect 'churning'.

Churning is related to the escalator effect, which is based on trying to create open, competitive markets. *These markets want to be open to attract as many new, innovative ideas as possible and this needs to be a efficient process in order to attract people quickly.* This is a big strength of markets in the USA for example, which have produced Microsoft, Apple, Google, LinkedIn, Facebook etc. These were all developed by young people. The idea is thus that labour markets need to

be open and accessible for young people, so that they can potentially have big impacts on the economy. This is the churning effect: being open to many people entering the labour market (and of course also to people leaving the market).

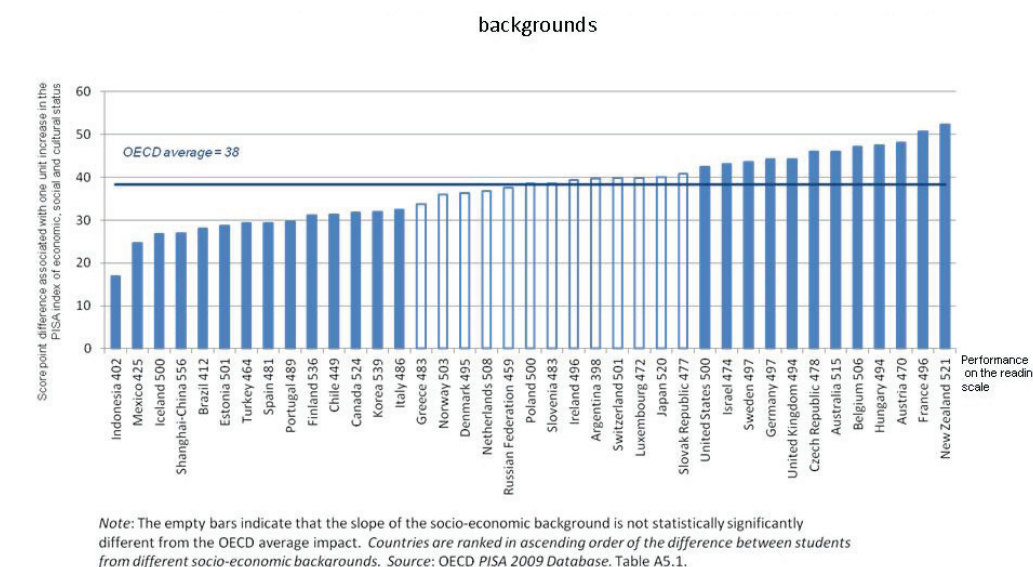
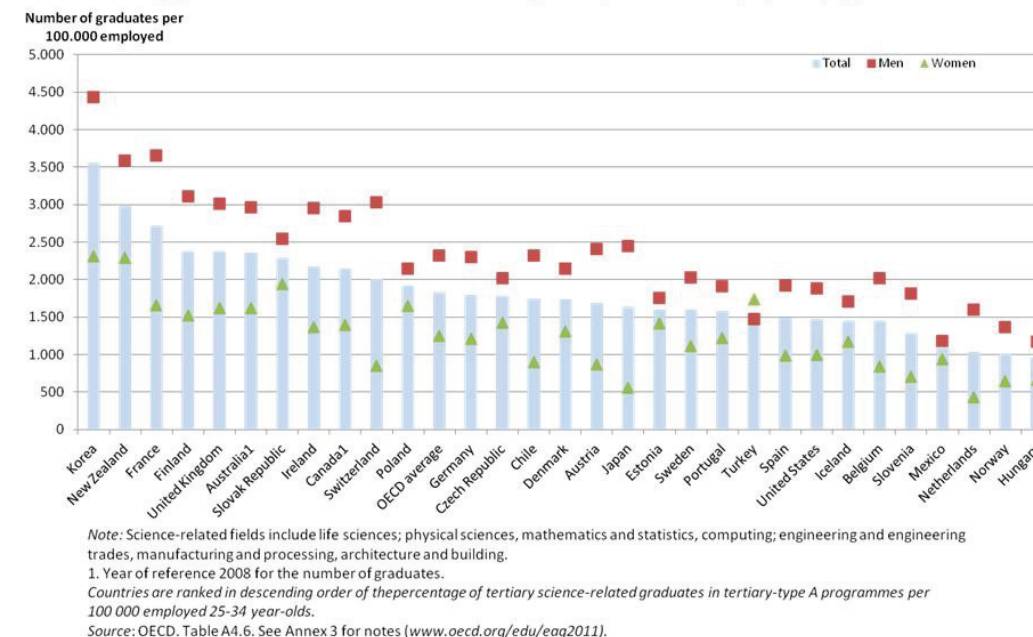
There is thus a dynamic to the rate of turnover of people. This leads to the escalator effect, which entails that many people enter particular markets, perform their roles, and then move up in the labour market and later switch roles. Their expertise may evolve from engineering to management or marketing for example. These are very common career movements, *where people perform different roles at different stages in their career.* These escalator effects reveal important changes in labour markets, as they can reflect how young an industry is.

With sciences, for example, the provision

of university graduates in science-related activities is comparative to the existing employment levels (which is relatively small, at 2%). This means that 2% of the current work force is made up of new people coming into the system with science-related skills. As Philip McCann explained: "this effect acts as a proxy for how much new blood is coming in those fields and into the economy as a whole". *In the fields of technology, engineering, mathematics and science, countries like Korea, Finland, New Zealand and the UK are currently scoring highly, while The Netherlands and (surprisingly) the USA do not.* This is a reflection that the innovations at Silicon Valley and Microsoft are relatively small on a global scale. This is the same for Philips and Shell in The Netherlands.

All of these patterns that have been observed are normative issues. They are nei-

ther 'good' nor 'bad', they simply reveal distributional issues within our societies. The point is, that education has a big effect on these distributional issues, as do inequalities in education, which are increasing as well. *In terms of income distribution, inequality is currently increasing in every country and the role of education in driving that inequality is more pronounced than ever.* In this respect, *it is university graduates worldwide that are the winners in the modern globalisation of the last 20 years.* Inequalities are related to the socio-economic backgrounds of people, and this is relevant for both developed and developing countries. In New Zealand, for example, there are huge differences in the educational performances of students from different socio-economic backgrounds. Although New Zealand has very high university attainment rates on average, it also has





some of the biggest educational inequalities within a country. Indonesia and Mexico, on the other hand, have relatively small differences. This is because the variation in socio-economic status is much bigger in New Zealand than in Mexico. Although New Zealand is much richer than Mexico, it has huge variations in the socio-economic well-being of its people and this has led to high educational inequality levels. This is similar for France. Comparatively, The Netherlands scores in the middle: it has no strong statistical variation, and is therefore relatively equal on many socio-economic indicators.

Another important issue is immigrant status and the inter-generational effects. When the first generation of immigrants moved to a new country, they are faced with severe disadvantages, which is true for all countries in the world. The second generation

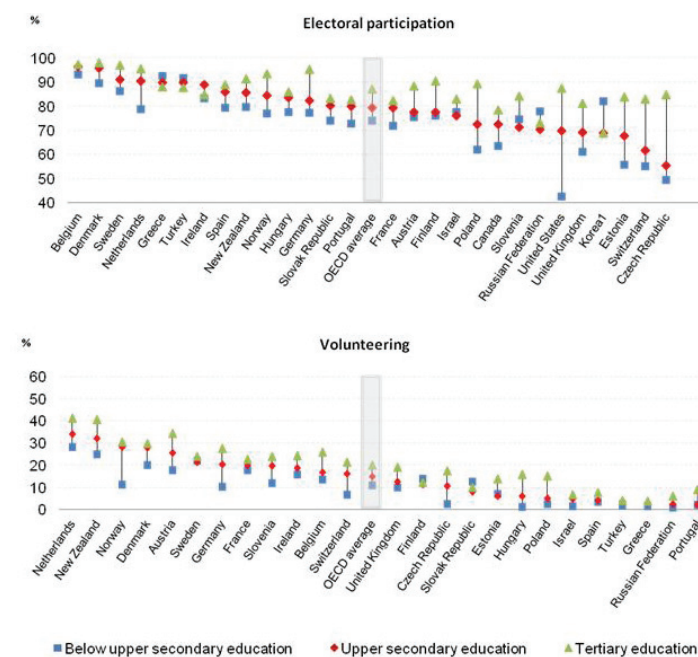
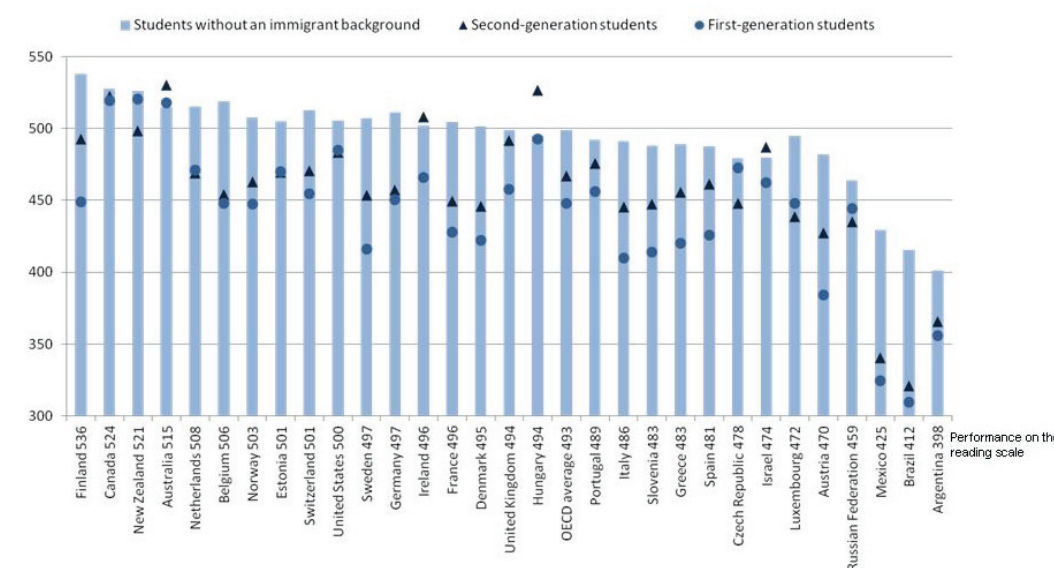
tends to catch up very quickly however, and in some countries such as the UK, Austria and Ireland, the difference can disappear within one generation. In other countries, such as Switzerland and The Netherlands, the rate of integration is much slower. In this sense, [the broader dimensions of social integration and education attainment have similar patterns](#). From a regional and urban point of view, this is important to keep in mind, because cities are the places where people mix, nationally, ethnically and internationally. The diversity issue is therefore a very important part of the story of cities, particularly within their social context.

A last important observation to mention is that rich countries spend more on higher education (whether public or private) than poorer countries. This means that they also get back more, since more equal, egalitarian societies

have a more equal share in the cost of public and private higher education. In The Netherlands, for example, the variation in the cost of public or private education is relatively small. In the USA, private costs are much higher. This is because the cost of education is decided by people, which is different per country. This also influences the long-term, lifetime benefits of education. [In the USA, the private costs of education are much higher, but the benefits of following private education are also much bigger](#). Private education is therefore a long-term investment, which will improve the effects on income. This should therefore be thought of in terms of a public investment versus a private investment issue, and in the USA, the private risks may be greater, but the individual benefits are as well. In countries like The Netherlands, Swe-

den and Denmark, the state shoulders much more of the risk, but also recoups these risks in the long-term.

[A recent study by Strathclyde University estimated that the wider benefit of universities can be quantified as £4.28 per hour of additional spillovers, as well as the wider social capital effects through public participation and institutional engagement](#). These effects include changes in the socio-economic preferences, increased electoral participation, higher levels of volunteering, increased female participation and gender equality for people who have followed higher education. These differences are very big, and also much higher in richer, more equal and egalitarian countries. These countries also generally have higher levels of life satisfaction: broadly said, [“the more people go to university, the happier](#)





people are with their lives". Life satisfaction and education are thus highly correlated. Furthermore, highly educated people also tend to have more trust in civic institutions than lower educated people, though this only applies to wealthy, equal societies. In wealthy, but unequal societies, higher education often raises suspicion of civic institutions: this is most observable in the USA, where State assistance is often perceived as an effort to undermine people's entrepreneurial efforts. The bottom line to this story therefore is that educational differences are greatly influenced by the different institutional structures around the world.

### Education in the European Context

Although these observations are global issues which are applicable at the world-wide

scale, European data is probably the best comparable information that is available. With the help of this data and the available maps, Philip McCann demonstrated the importance of knowledge activities, and the challenges these face, in the European-wide perspective.

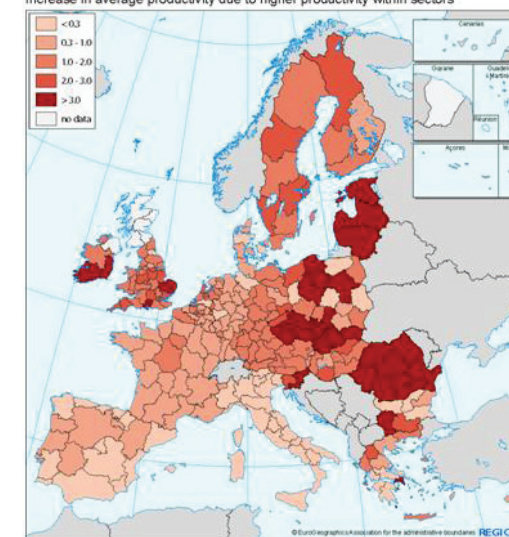
In Europe, the latest trends have shown that countries are increasingly converging internationally. Poorer countries are increasingly catching up with richer countries (i.e. 'slow convergence'), and this is true between countries, between sectors and within sectors. The geographies of education provision, where students come from and where they work, and where money is invested in knowledge-related activities are very different however. It has been observed that the productivity gains are generally higher in poorer regions in Europe. This is because

these people start from a much lower base level (e.g. agriculture to urban, or manufacturing to services) and they therefore have a bigger margin to build on. The growth weight on average is thus higher in the poorer parts of Europe, such as Poland, Romania, the Czech Republic and Hungary. At the same time, however, these weaker economies also have a bigger gap to make up for in terms of their training and skills composition. These countries may therefore have higher levels of productivity growth, but they also have much further to go in terms of educational provisions, attainment.

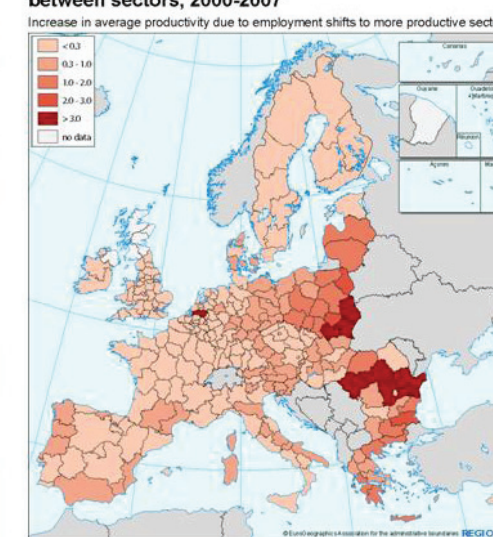
Within countries and regions, there can also be huge differences in the variations of educational attainment. Belgium has very big variations for example, as do France, the UK and even The Netherlands. Looking at edu-

cational attainment by region can therefore be interesting, as the patterns are not simply that rich countries have small variations and poor countries have big variations: the patterns are in fact much more fluid than that. In short though, it is the case that for every Euro invested in human capital, the returns are higher in the poorer countries than in the richer ones. It is just that these countries have further to go. This also means, however, that for every Euro invested, the indirect and induced effects on educational outputs, is also higher in these countries. This is important because it means that the effects of every additional invested Euro, or every additional hour spent, make a big difference for these places. These figures and maps can all be found in 'The Fifth Cohesion Report' (2010). It is therefore important to not always think

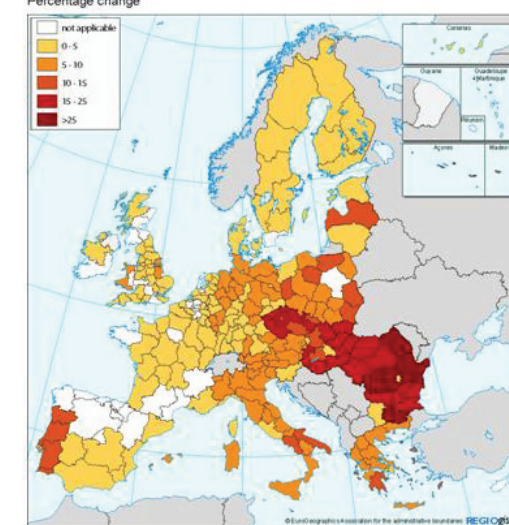
**Productivity growth within sectors, 2000-2007**  
Increase in average productivity due to higher productivity within sectors



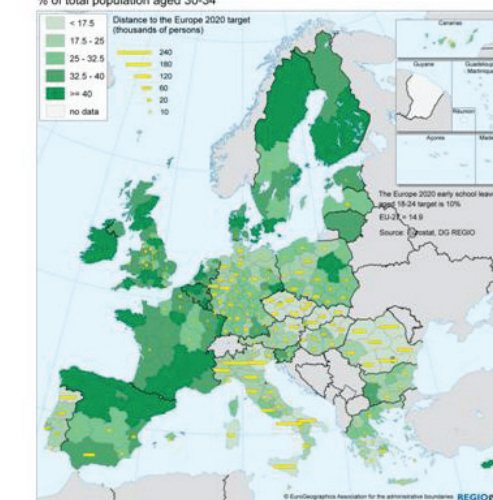
**Productivity growth through employment shifts between sectors, 2000-2007**  
Increase in average productivity due to employment shifts to more productive sectors



**Potential increase in GDP per head from raising the share of tertiary-educated aged 25-34 to 40%, 2007**  
Percentage change



**Population aged 30-34 with a tertiary education attainment, '08 and distance to the Europe '20 target**  
% of total population aged 30-34





in terms of countries: big variations can exist within countries, and this is why regional economics is so important.

When the figures are broken down into regions, it becomes apparent that money which is spent on Research and Development (R&D) in the European Union is primarily concentrated in the core of Europe, i.e. the North and North-west. In these areas, money is invested more in R&D and less in the provision of skills. The Italians produce large numbers of highly trained graduates, for example, but the concentration of employment in high skilled occupations (particularly in technology) is much more concentrated in Northern Europe. The geography of the provision of skills and the actual outcomes of those skills is therefore big. This is because the employment opportunities (i.e. where companies are located and where they choose to invest) are

much more concentrated than the provision of those labour skills. This is a European-wide phenomenon that is true for almost every EU country. In short, it is important to remember that there are big variations between countries, even bigger variations within countries and that the regional aspect is therefore important to keep in mind.

In terms of education, it has been shown that the more educated someone is, the more mobile they become geographically. This is also true for The Netherlands, although this is a rather unique case, because it has a relatively low mobility level. This is due to its optimal transportation infrastructure and high density, which makes it easier for people to change their commuting patterns, rather than having to migrate. Even so, it also applies to The Netherlands that the more educated you are, the more mobile you become.

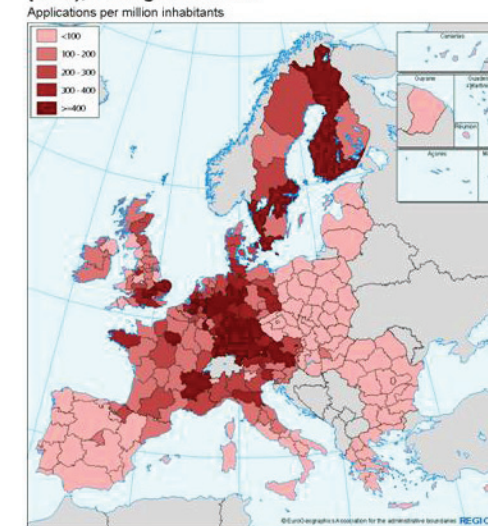
As a consequence, this also means that your average lifetime earnings are higher, so the returns on education are therefore maximised by how mobile you are.

It has also been observed that the earlier someone moves, the more frequently they will move afterwards. Similarly, the further you move the first time around, the further you will continue to move. This is true at the domestic, regional and international level and it generally means that the more mobile you are, the more you will earn. The reason for this is that if you are willing to move further, you are more likely to get the better jobs, which maximises the return on self-investment. This data is also supported at the city level, where cities, on average, have higher levels of university educated human capital. Cities therefore also tend to have higher lev-

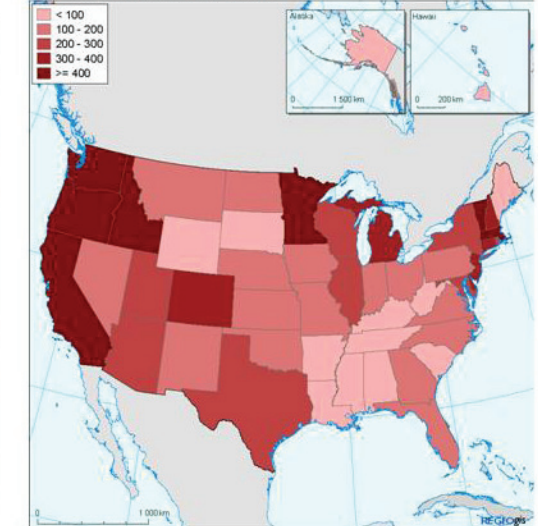
els of inflows of university graduates relative to their population than rural areas. London, as the biggest city in the UK, has the highest proportion of university graduates relative to its absolute and relative size for example.

In terms of gender and mobility patterns, statistics have revealed that women are more mobile than men. The data evidence for this case is very strong and goes back to patterns that Ernest George Ravenstein observed in 1873 when he examined UK Census data. The reason as to why this is, is related to the Mincer wage effect. As mentioned before, this is the general trend that men earn more than women who are at the exact same level in terms of education, grades, skills etc.. Due to the Mincer wage effect, men are therefore statistically more likely to get the job than women, and this means that women have to

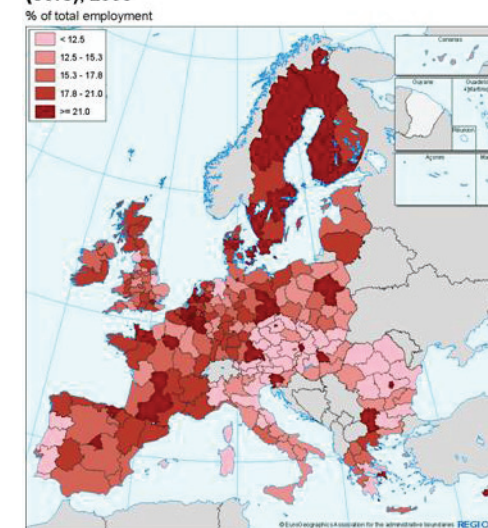
Patent applications to the European Patent Office (EPO), Average 2006-2007



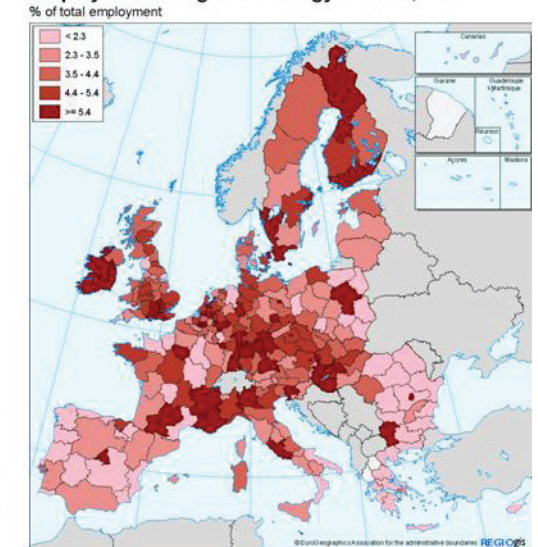
US: Number of patents, average 2007-2008



Human Resources in Science and Technology (core), 2008



Employment in high-technology sectors, 2008





travel further to compensate for the fact that they are more social excluded. Marriage has often also been given as a reason for high female mobility rates, but UK data has ruled this out. What has been observed, however, is that men are more likely to travel further to study (so they move further when they are younger), but that from all the graduates that will move away after their studies, women are much more mobile. These patterns are statistically proven and since 1873, the labour markets have not changed much in this respect.

What has changed in the last 20 years, however, is that the world has become much more open. This change was marked between 1988 and 1994, when modern globalisation was born following some epic moments in history, i.e. Brazil's new constitution in 1988; the Tiananmen square protests and the fall

of the Berlin wall in 1989; the release of Nelson Mandela in 1990; the creation of the EU single market, the World Wide Web and the second industrial reforms in India and Indonesia in 1991; and the establishment of the North American Free Trade Agreement (NAFTA) in 1994. These were immense changes to the world economy and it largely went unnoticed because "it was just too big to comprehend". The effects of modern globalisation hugely influenced the labour market, where people could now access the entire globe. The 'winners' of the first decade of modern globalisation were the global cities, i.e. London, Milan, New York, Amsterdam etc. This was a huge crunch effect for these cities, who gained many advantages of the new possibilities of modern globalisation. In the words of McCann: "the world was no longer flat, it became spikier than ever". The

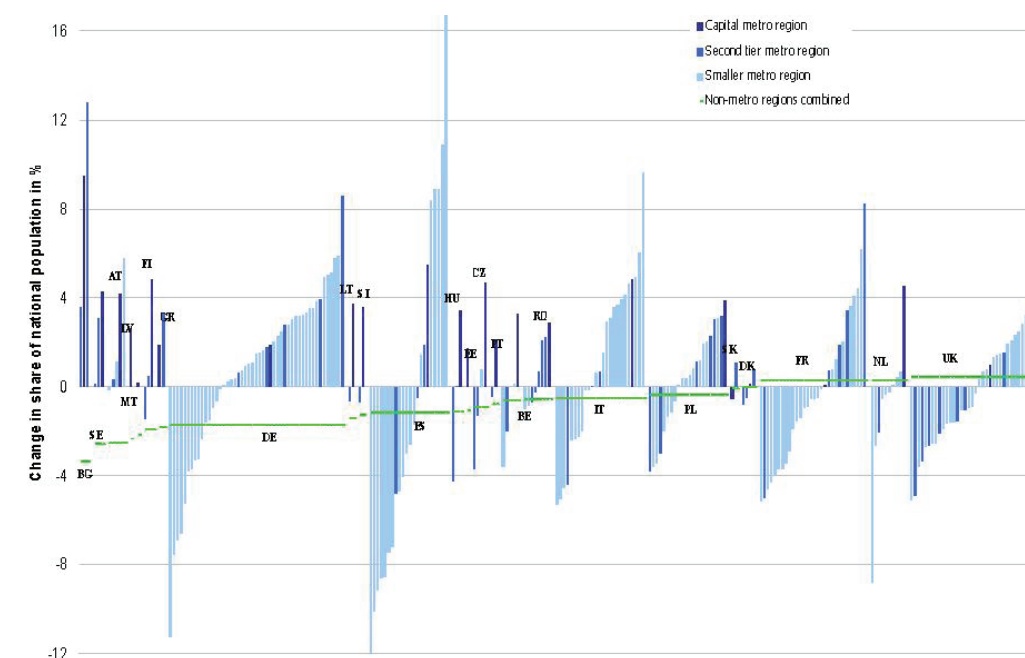
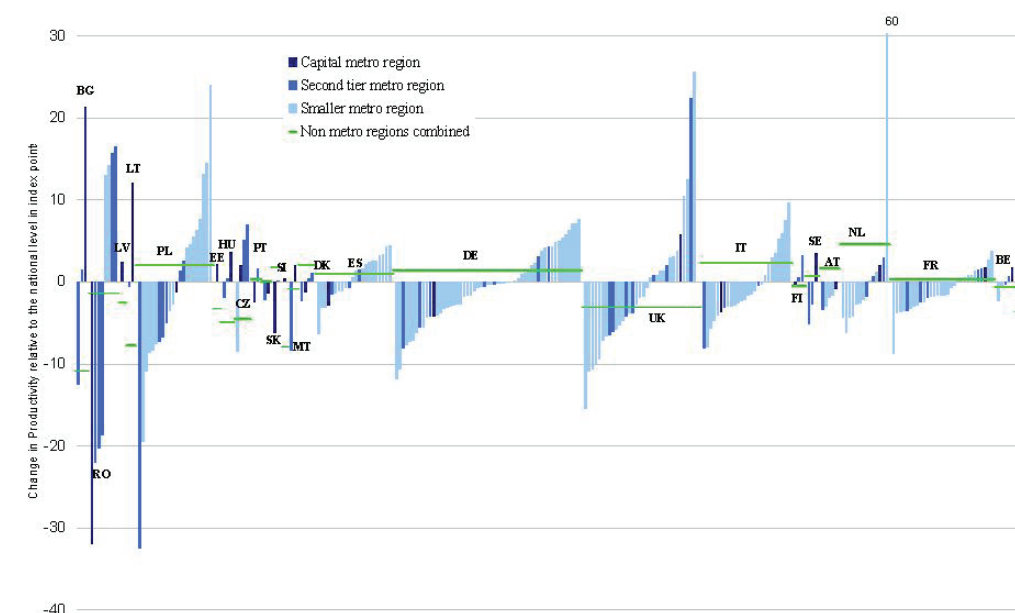
university graduate contribution to this was also huge, which is clearly visible in the data on The Netherlands.

The change to modern globalisation in The Netherlands took place between 1990 and 1991. Preceding this, the country, and most other countries, faced 40 years of cities dissipating through decentralisation and suburbanisation. Then, between 1988 and 1994, the whole system reversed. As the famous Harvard urban economist Edward Glaeser remarked: "Cities are back".

More and more urban metropolitan areas were sprouting up and this was an unexpected change, even for urban planners. It also had a big impact on the role of universities as knowledge centres, which was different for all cities. The stories of the universities in London are very different to those in New-

castle, for example, as Newcastle is a city that wasn't one of the initial 'winners' of the first decade of modern globalisation. In terms of possibilities, it therefore became important where you were, and around 2000, people (especially those in government) increasingly became aware of the influence of this crunch effect.

During the first decade of modern globalisation, people started to learn many new ways of working and modes of organising. Productivity was spreading in different ways, as was the crunch effect. An important report that will soon be published by the OECD has documented this, revealing that following 2000, there was a big productivity spread effect across the world, which started in The Netherlands. The spread of this growth effect was primarily dominated by urban areas,



and the patterns showed big concentration effects in cities throughout the world. [The primacy of the core city in those regions, as well as the knowledge institutions \(which are generally located in those core places\) therefore had a strong effect.](#)

Currently in Europe, the growth performance in Western Europe is accelerating, which is leading to a kind of a regime change, influenced by the learning effect. In terms of growth rates, [a spread effect is setting in, which is dispersing the previous concentrated growth shares in certain areas.](#) In other words, the learning effect of the first 10 - 15 years of modern globalisation is starting to have an effect. This means that although we still have the 'spikey world' in terms of productivity levels (which are higher in the core areas), [the growth and contribution rates of](#)

[the non-core areas is increasing in almost every country.](#)

Although cities offer great challenges and possibilities, it is not the case that the bigger cities are always simply better and that their universities are therefore too. The dynamics of the urban system are evolving and this means that the role of university institutions (and their potential role in any policy responses) are more varied and nuanced than we would have expected 5-10 years ago.

This is also observable when you look at the labour productivity of cities across the EU, where cities do not always score highly in terms of productivity. In most cases they do, but there are variations within them, and within the countries themselves. There are primal capital cities with high productivity rates for example, such as London, Bucha-

rest, Sofia and Vilnius, which have an urban capital city effect. But there are also countries, such as Germany, where productivity rates are more mixed. This is also true for the changes in labour productivity. The internal stories of countries can therefore be more complex (in terms of growth performance across regional and urban levels) than what the national picture tells us.

### The Dutch context

The most important role of universities in the production of knowledge is that they train people to think. The business world knows this; they know that young people are the people with the best ability to rapidly learn certain sets of skills, abilities and techniques. This is the 'production gap effect', and it is becoming more and more important,

especially for countries which compete in the knowledge sector, such as The Netherlands.

For the years 2007 to 2013, The Netherlands has received €10.6 billion of Cohesion Policy programme funding from the EU. This amount of money can have a significant effect if it is targeted well, and [Dutch priorities are clearly geared towards competing on knowledge innovation and activities.](#) More specifically, its funding priorities are aimed at research, innovation, employment skills, retraining, business support, SMEs, poverty, social exclusion, ICT and transport. The Netherlands is therefore a classic case of a country which targets its development funding on knowledge-related activities.

This funding is in line with the Top Sector Policy approach in The Netherlands, which McCann does not believe is an effective sys-

tem. He argues that [performance variation in The Netherlands and across the world does not happen according to sectors, but according to places.](#) This is why regional and urban economics and geography are so important. The background to this is based on literature on the Trans-Atlantic productivity gap, which describes the huge productivity gain that the USA made over Europe in the early 1990s. In this period of modern globalisation, the productivity differentials between North America and Europe had almost completely disappeared. This is based on the variation in holidays for example, where the Dutch have 5 times the amount of holiday time as the Americans do. In terms of variations, the productivity gap in almost every index had almost completely disappeared. If the holiday effect is then incorporated, then 20% out of

the 30% point gap is a productivity gain. The reason for this is that in the 1990s, the effect was the result of the knowledge sectors (particularly the high technology sectors) in the USA. "It was the Silicon Valley story, which was a sectoral shock in which (North) America just simply took a great lead over Europe".

By the early 2000s, however, that shock effect disappeared once again, precisely at the time when rural to urban movements were really growing. The gap that persisted through that period was not based on high technology sectors however: it was based on the ability for new knowledge innovations to transfer from one sector to another. [The gap therefore did not take place within sectors, but between sectors: it was about how knowledge could spread between them.](#) This is termed the 'Wal-Mart effect', which is based

on supplying modern ICT's to modern logistic systems, to modern financial systems. All these steps are underwritten and move via satellite control systems. This is similar to what IKEA does: the fact it sells furniture is irrelevant. Similarly Wal-Mart sells various products; this success is all based on the productivity effect through the application of modern technologies through modern organisational practices which occur between sectors. It was thus not a problem of the top sectors, because the top sectors in Europe do not have the productivity differentials that the USA do. If they did, then they simply wouldn't be in global competition. It is therefore based on how everything is connected. This is [Europe's weakness: a fragmentation of the European markets](#) (which is what the single market is designed to counter).

This Trans-Atlantic productivity gap has been worked on by many researchers and the advice that the European commission has therefore been giving over the last few years, is that [regions and nations should develop 'smart specialisation strategies'. These are policies which try to develop strategies that maximise the flow of knowledge between sectors, between big companies and small companies, universities and civil societies, and universities and businesses.](#) In this way, smart specialisation strategies aim to break down all the boundaries that lie between them, because these are bigger in Europe than in the USA. [The priority is therefore not a top sector priority; it is completely the opposite! European priorities are about building links and about maximising the flow of knowledge by disseminating it.](#)



The EU therefore tries to promote innovation entrepreneurship through technological diversification, under the title ‘smart specialisation’. Specialising in this sense does not mean building at the specialist assets that you are good at, e.g. Rotterdam is advanced in logistics. What it means, is that Rotterdam should focus on improving the applications and the logistics field related to all the other sectors instead. Similarly in rural areas, this can be seen with the application of Biosciences, Nano-technology and new polymer systems for packaging and freezing. Agriculture in this sense is just a big science experiment and the greenhouses in Northern Europe are highly successful. This is because the focus has been on technology improvement and how to diversify it. The priority should therefore be on promoting embeddedness: on growing strong roots and a stronger

branch network to increase the connectivity between regions and within regions, across sectors and between places.

This is what the Dutch have done historically, and it is highly important because innovation, knowledge-related activities, regions and cities now matter more than ever. The data shows this and policy responses should therefore react accordingly. [The concepts of place, cities and regions should be taken more seriously in Dutch policies, which need to realise that sectoral problems are related to place.](#) The role of universities are extremely important in this sense, because they help bridge the gap between the public sector and private sector and between the big companies and small companies. Universities thus represent a big potential, as much of the material related to smart specialisation strategies comes from them.

### Reactions

Following the lecture, Philip McCann was asked various questions from the audience. One of these concerned the role that sciences now play in universities. McCann pointed out that an interesting case to look at is the UK, because the UK has a relatively high number of science graduates, but also one of the lowest numbers in the OECD of people who enter science-related occupations in the UK. In the UK, a good physicist is therefore more likely to work in the financial markets than in physics. The ability of technology sectors to absorb science graduates in the UK is very weak, which is largely related to the fact that the components of value chains were insufficiently robust during the beginning of the modern globalisation shock in the UK. On the one hand, this is a big problem for the

UK. On the other, however, it can also be a strength.

In countries like Switzerland and Germany the number of university graduates are relatively low, as are the number of science graduates, but the number of graduates being absorbed into industries is almost 100%. The differences between Switzerland and the UK lie in the fact that the intermediate levels and supply chains were hardly affected in the former, whilst they were completely affected in the UK, and many other countries which had to relocate their supply chains to Asia. In Switzerland and Germany, these effects were very limited, where many have been left intact. [The problems therefore do not lie in training and teaching, but in the ability of industries to absorb these people.](#) This is currently also where the strengths of

the USA and Australia lie. The USA trains much fewer scientists than it employs for example. This is because its system attracts many highly skilled science graduates from across the world to work in the USA industries. [This system stimulates the churning of huge numbers of foreign people in graduate science occupations, who will most likely end up staying in these economies and help develop connections and trade links.](#)

Another question that was raised concerned the importance of scale in the comparative advantage that countries have in terms of innovation processes. Scale, after all, can be critical in determining the success in the modern globalised world. The OECD data has revealed that issues of scale and mobility are much more complicated than they initially seem. Spatial adjustment pro-

cesses are very mixed between and across individual countries. Mobility patterns are therefore very heterogeneous, where both the disequilibrium model (where people move to specific areas for higher wages) and the equilibrium model (where people move to specific areas lower wages due to other benefits such as a better quality of life) play a role. Mobility patterns are therefore becoming increasingly heterogeneous and this is why urban and region geography is so important. Mobility is not a standard, one-size-fits-all argument. [In this sense, the concept of a typical representative region or place is diminishing.](#) The ‘Ohio effect’ (where what happens politically in Ohio more or less reveals what will happen politically in the rest of the USA) is thus weakening. Alongside this, the contribution of non-core areas is also increasing: it is

thus not a fixed core versus periphery or centre versus the rest story, where all are fairly homogeneous blocks that move in different directions. The diversity is also increasing amongst non-core areas, and from a policy point of view, (and in terms of universities), this is important.

Not every place can have a university for example. It is not possible, and even if it was, this would not be good because of the negative impacts of a critical mass. This is one of the weaknesses in Europe, and where it has faced some scale disadvantages comparative to North America, where universities are based on a pure scale effect. Despite this, however, scale is not everything. In terms of urban areas, it has been shown that [productivity levels are the highest in city regions of approximately 3 million people. Above this](#)

[level, the scale effect becomes almost insignificant.](#) The ability to build networks therefore becomes very important. This is part of the Dutch culture, and a real strength of The Netherlands. The UK and New Zealand are much weaker in this, because they are more focussed on competition. They simply do not have this mentality, and therefore miss out on many opportunities.

China, on the other hand, is very strong in network building. Similarly to The Netherlands, it focusses on top sectors, however these have a much more differentiated regional competition structure. The institutional structure in China is all about diversifying regions that have devolved powers to compete. It is thus really about regional based competition.

Europe is attempting to build these net-

works to a similar scale. Through the framework programme in research (Framework 7 and the New Horizon 2020 programme), Europe is attempting to build on these themes and this is also what the smart specialisation agenda is based on. [One of the priorities of the European Commission is to build linkages within and between places. It is important that both are done, because if you only build them within places, and not between them, then there is an island effect. On the other hand, if you build them between places, but without any local linkages, then there is a situation where the centre always wins.](#) The idea of European development is therefore based on forming both, and this is the only real option for Europe, according to McCann. His belief is that “if Europe wants to get the same scale effect as the Asian economies, even at the current rates, this would take 3

centuries to achieve. Europe only has 3 big cities (London, Paris and Madrid), and even those do not have the same scale level as the Asian economies”. The context is therefore more heterogeneous and this is why place is becoming very important in terms of education, and in terms of unravelling what it takes to unlock the potential of universities in particular places, and how places then respond to the potential of these universities.

Given the evidence on both sectoral and regional issues, McCann believes that the Top Sector policies in The Netherlands are more of a political issue than anything else. [The challenge therefore lies in finding ways to work with the Top Sector approach, whilst still generating the spread effects across places, sectors and technologies. This is, after all, where Europe's weakness lies.](#) For this reason, European priorities should be

based on building on these areas which are weaker, through forming linkages which will maximise these effects.

Finally, a question was raised by Peter Nijkamp, Professor of Regional, Urban and Environmental Economics (VU) on the relationship between education and industrial use in the local context. [In terms of university influence, it was pointed out that knowledge is essentially a floating good, which is available all over the world.](#) From this point of view, it was asked what the specific advantages are of countries like The Netherlands, that specialise in these industries if they can be learnt in one place (i.e. at a university in The Netherlands), and then be taken away and used in other countries? It may be beneficial at the global scale, but what are the advantages at the local, city scale? How can countries such as The Netherlands ensure

that the educational footprint of knowledge is not only spreading across the world, but also coming back to the locality?

This argument is very relevant in the modern globalisation era, because when this started in the early 1990s, [people assumed that new technology and new institutional arrangements would make the world flat, i.e. place would become less important. In actual fact, however, place has become much more important.](#) The spread of globalisation has not been equal, and for this reason, the shock effect of global spreading has led to different types of activities across all sectors. Globalisation has allowed for more routinised, relatively easy template structured type of jobs, i.e. activities which are standardised and can easily be broken down into a sequences of steps. Through new technology and communication methods, these jobs can now easily

be monitored from one place, and carried out in another.

A situation therefore comes about in which the global competition gains from carrying out these activities correctly were getting greater, and the costs of not carrying these out correctly were also becoming greater. The advanced economies therefore increasingly had to shift towards more knowledge intensive competition, because the product life-cycle of competing in products and services were increasingly getting shorter. In other words, a rapid turnover culture had come about, where industries and manufacturing (e.g. in semi-conductors, electronics and cell-phone technology) had become incredibly quick. This, once again, is the Wal-Mart effect, where there is an extremely rapid turnover. The advanced economies therefore

increasingly started to focus on competing in non-routine, unstandardised activities which change over time. The reason for this is that these activities have a relative competitive advantage to standardised activities. They require high numbers of highly educated people, high amounts of capital and because these activities are difficult to spread across the world (i.e. they need to be concentrated and stay in particular areas), they bring with them comparative advantages in terms of making money.

The result of these changes have led to a very vulnerable position for the middle-classes. This is because the standardised, routine activities mentioned earlier are not lower-skilled activities: they are middle-skilled, middle-income and (often) middle-aged activities. What is now happening in





many wealthy cities is that there are highly-skilled, non-routine activities (which are based on knowledge competition) and low-skilled, non-routine activities, which are also highly customised (e.g. cleaning, waiting tables etc.). [The middle-skilled activities, as mentioned before, are therefore not really demanded in these cities, and the people in the middle-classes are therefore most vulnerable to modern globalisation.](#) These people cannot compete with the highly-skilled groups, so they are forced to compete with the lower-skilled groups. [There is thus a wave depression effect in the middle and low skilled groups.](#) This pattern is very common and it's increasing in wealthy countries like the UK, where the income distributions in cities are increasingly influenced by the bimodal effect. A part of the outcome of modern globalisation in knowledge is therefore based on profound

differences in distributional consequences. This can be seen in cities like London and Vancouver, where there are great differences in the quality of life. [Vancouver has one of the highest quality of life rankings in the world, but it is also one of the most segregated cities in the world, for example.](#) This is because the city is hugely divided, with people that earn incredibly high wages (these are also the people who determine the quality of life) and much poorer people, who are squashed into high density, low quality housing.

The real estate market and rent seeking policies also play a big role in this. This argument is based on the welfare effects that are hidden in redistricted systems, as is clearly the case in many European countries. Many European countries have big restrictions on planning zones for example, which hide the welfare effects that are gained from the rents

accrued through the operationalisation of real estate markets. If you own a house in London, for example, you will be financially sound for the rest of your life, because owning a house there is such an extremely valuable asset. The reason for this is that different income groups internalise these rents, which are hidden in the real estate markets. The asset wealth effect in the UK is therefore extremely profound.

This also has a huge sorting effect in UK, because people use their housing assets as the main component of their pension. There are thus many hidden effects in the real estate market, and this explains why many people involved in planning and zoning restrictions promote these ideas, i.e. they are protecting their rental gains. In this sense, the opposition to the third Heathrow runway wasn't about carbon tax or air pollution: it

was about the effect this would have on their real estate assets. These hidden effects are institutional issues, and they are a big problem in Europe.

These problems are also magnified by that fact that institutional variations in Europe are very big, making these effects even more complex. The worst cases are the situations where there is a good institution, which happens to be the wrong type for the wrong place. [This is because elites will never self-reform, and because the coalitions of common self-interested elites \(often to do with land-use\) are almost impossible to overturn. The law is on their side because the institutional systems allow it.](#) These perverse effects cause big problems in the UK, where the poorest areas are often used for unwanted developments. For example, in the UK, everybody wants to be green, but nobody wants to live

next to a windmill. Windmills are therefore either placed offshore (a highly expensive approach) or in the poorest areas that are already deemed blighted. The reason why this is possible, is because the laws allow it. These areas are already zoned for industrial development, so they are treated in this way. [The fact that these institutional problems are hidden is what makes them difficult to tackle politically. According to McCann, this is one of the biggest problems for Europe.](#)

On the other hand the strengths of many European countries, and especially The Netherlands, are the coordination issues that they can internationally compete in, which many other countries cannot. As McCann explained: [“the Dutch are everywhere. Global warming is the best thing that ever happened to Dutch engineering”.](#) The Netherlands has such a long history of knowledge on these is-

sues, that Dutch engineers are now working all over the world to teach people their expertise. This is similar with the British and real-estate in Southern Europe. The hidden benefits therefore lie in the fact that the rents of educational experience are not necessarily only recouped in the local country itself, but also world-wide. These benefits of modern globalisation generally accrue to the higher-skilled groups in these countries, however, and often do not affect, or adversely affect, the local people in the countries abroad.

In terms of where this leaves the role of universities, the answer up until now has been simple: they are left open and uninvolved. This situation is changing, however. This can be clearly observed in the UK, where this culture of thinking is changing along government lines. Tax payers increasingly believe that if universities are receiving

tax payer's funds, then the priority of universities should be to increase their role. This is true in many countries, where universities are increasingly required to make some additional interactions. This is a push factor. The pull factor lies with [the universities themselves, which have the potential of becoming bridge builders. This is a possible new role for the future of universities,](#) although many companies do not want the interaction with universities due to secrecy reasons. Others do want this, however, and the extent to how far this will happen in the future is still an open question.

# Expert meeting

## Knowledge clusters in the urban context

The International Perspectives (tIP) expert meeting was held with a select group of experts in the field. It aims to put theory into practice, by examining the topic of Knowledge Clusters more closely. This article reflects on the seventh and final tIP expert meeting held on the 8th of March 2012, in association with the VU University of Amsterdam.

This expert meeting looked more specifically at the potential of the universities in Randstad Holland, and the role that tertiary education institutes can play in the locality, as well as at a global scale. It examined the role that micro-data can play in understanding knowledge clusters, and how influential clustering can be in determining the success of knowledge centres. With this in mind, the expert meeting looked at how the Zuidas could benefit from these type of studies.

### Set up expert meeting

1. Presentations:
  - Prof. Henri de Groot (VU) on Micro-evidence on Agglomeration Externalities
  - Prof. Maurits de Hoog (TUD) on Knowledge Clusters
2. Initial Responses:
  - Philip McCann and expert team
3. Group reflection
4. Conclusions

### tIP 07|07 Expert team

[Salomé Bentinck](#) - Researcher in University Real Estate and Campus Development, Delft University of Technology

[Flavia Curvelo Magdaniel](#) - PhD Candidate in Public University Campus Management and Real Estate, Delft University of Technology

[David Dooghe](#) - Project Leader at Deltametropolis Association

[Paul Gerretsen](#) - Director of the Deltametropolis Association

[Douglas Grobbee](#) - Managing Director Special Projects, ABN AMRO NL

[Henri de Groot](#) - Professor in Regional Economic Dynamics, VU University Amsterdam.

[Inge Hartkoorn](#) - Reporter/coordinator, Deltametropolis Association

[Maurits de Hoog](#) - Professor of Urbanism, Delft University of Technology

[Hans van der Made](#) - Senior Urban Designer, Municipality of Amsterdam

[Philip McCann](#) - Professor of Economic Geography, Groningen University (RUG); and Special Advisor for Regional Policy, European Commission

[Duco Stadig](#) - Strategic Policy Adviser, Colliers International; and Chairman, Deltametropolis Association

[Pieter Tordoir](#) - Director, Atelier Tordoir

### Presentation #1:

#### Knowledge clusters in the Netherlands: Micro-evidence on agglomeration externalities

[Henri de Groot](#), Professor of Regional Economic Dynamics at the VU University of Amsterdam, has been involved in empirical research studying the importance of agglomeration externalities. For this presentation, he demonstrated how his research can be applied to the discussion on the importance and mechanisms of clustering and the role that micro-data can play in explaining these trends.

In the last 5-10 years, empirical academic work has increasingly been influenced by the information that has become available through micro-data. This data is essentially detailed statistical information that is available at the individual level of people, businesses and firms. It is confidential and anonymous, and reveals very detailed information on the mechanisms behind our economies. Micro-data enables researchers to get a much deeper understanding of the true mechanisms that lie behind 'aggregate agglomerations', i.e. the clustering of economic activities. In doing so, it allows us to answer fundamental questions on the ultimate drivers behind these processes.

For a very long time, it was thought that aggregate agglomerations were caused by various kinds of production externalities. This theory refers back to the traditional work by Alfred Marshall, who claimed that for various reasons, firms have an incentive to cluster together in space. With the recent availability of micro-data, however, it appears that these type of clusters may well be driven by something completely different, i.e. by 'sorting'. 'Sorting' is the result of different types of people and firms clustering together for other reasons than the spill over that occurs among them. Academic work on this topic is still in progress, but if these claims appear to be accurate, then this can lead to dramatic changes for policy advice.

Henri de Groot has been extensively working on this issue in the 'Stad en Land' (City and Land) study. On the one hand, this study examines the traditional theories (which identify production externalities and assume they are important and relevant), and on the other hand, it looks at the location behaviour of people, to try and identify to what extent this behaviour is driven by the different amenities that cities offer. It became increasingly apparent that these amenities and cultural factors play a much bigger role in understanding why clustering takes place, than the type of externalities that we still typically think are relevant. We still perceive cluster formation to be driven by the externalities that we believe are relevant, however, through micro-data analysis, this does not seem to be an accurate explanation. Although these developments are still relatively new, Henri de Groot wanted to give a reflection of what his research has covered so far, with emphasis on the applicability to the Dutch context.

### Clusters in The Netherlands

Clustering is relevant. This is fairly undisputed and clear when you look at the spread of location quotients in The Netherlands. Here, the location of traditional clusters are clearly visible, e.g. the metal and electronic industry is generally located in the South (Eindhoven); the computer and IT services are concentrated in Utrecht; the financial services are concentrated in the Zuidas etc. These clusters exist and reflect the way we look at the reality.

A fundamental question that Henri de Groot's research is trying to address is whether these cluster formations are caused by the fact that these different locations offer different types of inputs that are relevant for the production processes, or whether it is the outcome of all kinds of spill-overs that occur because these businesses are close together. If that is the case, and these kinds of agglomeration externalities are really involved, then



there is a strong argument for public policies aimed at fostering this kind of clustering. If this is not the case, however, then a sorting approach is a better explanation. This will mean that the type of policy that is required will need to change towards policies which are merely aimed at creating the prerequisites for certain types of developments (such as the development of attractive amenities in a particular city or university for example).

### Micro-data on wages as a reflection of productivity

With the access to micro-data, Henri de Groot's research has focussed on the information obtained on the specific wages of all individuals in The Netherlands. Wages were used as a proxy on productivity, as they more or less reflect the productivity levels of individuals in The Netherlands. These figures revealed that, when you look at the spatial distribution of wages, there are various productivity differences across space. This then begs the question: *are these differences caused by the fact that the people who live in higher wage areas benefit from being close together (i.e. a type of externality that is involved), or are these differences based on the fact that, for whatever reason, high productive people just prefer to live in this area (i.e. the sorting approach)?*

In order to answer this, the information on individual wages was used to create a methodology that would explain to what extent these variations are purely attributable to the characteristics of the person. This methodology is based on filtering out influential individual characteristics, such as age (e.g. older people earn more than young people), skill level (e.g. higher-skilled workers earn more than lower-skilled workers), gender (e.g. males earn more than females), nationality (e.g. ethnic minorities earn less than national residents) and so on. By having controlled for all these individual attributes, a potential residual is then left over, which may have a certain pattern in space. This is the hypothesis and methodology that is being

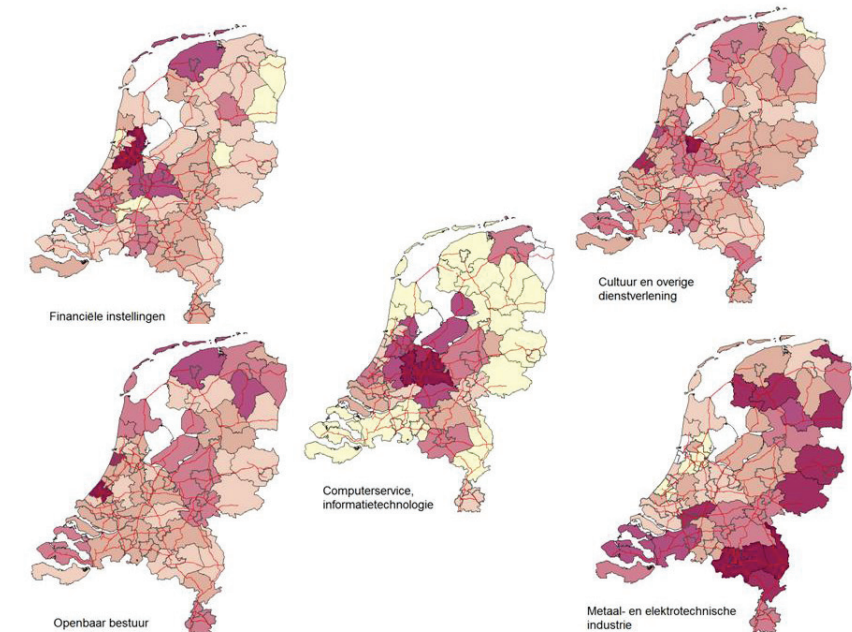
developed at the VU. In de Groot's words: *"It is as if you are looking at identical twins, that are completely the same in all respects, except that one works in Amsterdam, and one works in Groningen. It is about seeing if this difference then results in a different wage and hence a different productivity"*.

In The Netherlands, these differences are big. If you compare Amsterdam, or The Hague to Groningen for example, then there is an approximate 25% difference in productivity. Cities like Amsterdam also have a much higher percentage (45%) of high-skilled worker that earn high wages, compared to around 30% in the non-metropolitan areas in the periphery. For immigrants, however, this works the other way around. Immigrants tend to earn less in large cities (as there are higher concentrations of immigrants in these urban areas) and more in sparsely populated areas. There are thus huge differences in human capital intensities in The Netherlands, and these differences in wages are mainly due to the different compositions.

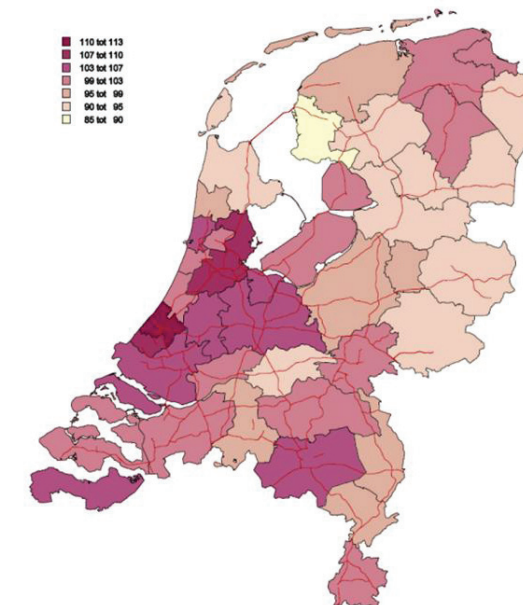
As stated before, the types of wage variations in wages that can be explained by individual characteristics (e.g. education levels, age, gender, immigrants, part-time versus full-time, type of occupation etc.) were 'squeezed out' in this research to leave a spatial residual that represents the parts of a wage that cannot be explained by these individual characteristics. This means that the residual is built on all sorts of characteristics that are based on the region itself. When looking at the residual that is left, *two important lessons can be observed:*

1. The spatial patterns that were observed before have become much more pronounced. This means that *the dominance of the urban areas is much clearer than was previously thought,*

2. What is left in terms of explaining the differences becomes substantially smaller. In reality, this means that the 25% variation mentioned before has shrunk to 10-15% for example.



### THE SPATIAL RESIDUAL



These are important insights because many of the traditional approaches that look at the benefits of agglomeration often only look at the productivity differences across space, and then try to explain these in terms of variations in densities. The typically believed result when that approach is used is that the doubling of density will increase productivity levels by 6-7%. This is what is generally believed to be the benefit of agglomeration based on evidence at the aggregate level. The results of the micro-data residuals tell a whole different story however. Once the sorting effects are controlled for, it appears that the size of this 6-7% externality is substantially smaller. This means that the traditional types of externalities that were thought to be relevant are therefore less relevant than we initially thought. **The reasons as to why people cluster together in space are therefore influenced by other factors that are more relevant.**

### Consumer and production based amenities.

The Netherlands is currently experiencing shrinking regions, and a huge topic of debate is based on trying to understand why so many high-skilled people have the tendency to move from peripheral regions to the urban areas. In answering this, it appears that amenities may play a much more relevant role in explaining these trends than was originally thought. In current academic research, a stream of literature is increasingly developing which considers the importance of amenities from the perspective of 'the consumer city'. Here it is believed that **amenities from the consumption side are much more relevant than the production side, in explaining why clustering takes place.**

Similarly, micro-data has revealed that commuting patterns are influenced by the amenities that spaces offer. When observing these commuting patterns, it becomes clear that **high-skilled people generally do not mind long commutes (in terms of time and distance) and that they tend to move from**

**areas where land rents are high (i.e. attractive places), to work in places where land rents are relatively low.** This is another indication that the apparent attractiveness of cities (captured by high land rents or absent amenities), is very important for people in terms of location behaviour. **These observations can be very important when considering the future development of the metropolis, for example, as the different types of processes, both from the production and consumption side, are ultimately the buttons that will steer and develop the existing policies.**

In this sense, empirical evidence can be crucial in reflecting the mechanisms that are truly relevant in shaping the spatial equilibrium. This is ultimately what this research, and other similar studies have been based on. Other research has also reflected similar results, as was the case with Martijn Smit and Maria Abreu's PhD thesis, which looked at the relationship between innovation and clustering. This study discovered that, **similarly to wage patterns, innovations tend to cluster in certain areas.** The research looked at whether this was due to the fact that these firms have the natural tendency to cluster together, or whether this is based on the individual characteristics of the firms, e.g. the Research & Development (R&D) stock that they have, the profits that they make or their individual characteristics that determine how innovative they are. As with the research on wages, this study revealed that **the individual firm characteristics are much more relevant than the surrounding space in which the firm is located. Sorting mechanisms therefore play a very important role in determining these location behaviours.**

In terms of looking at meta-analyses (analyses which try to explain huge amounts of existing literature from different countries, with different data sets and for different time periods and sectors), one result clearly stands out: they all show that once you start looking at micro-data, the size of the agglomeration externalities decreases substantially. Similarly, all kinds of surveys on the locations of

multinationals have revealed that **the importance of basic infrastructural factors hugely outweigh the importance of existing firms that are already in the vicinity when making location decisions.** This is also consistent with the other studies.

In conclusion, micro-data can be very useful as a means to determine the mechanisms behind cluster formations. In this sense, it can be essential in helping to fill out an extremely fascinating and challenging jigsaw puzzle. The type of mechanisms that need to be taken into account are extremely large and complex, and although there is more need for research on the spatial scope of these externalities, sector specificities and local conditionalities, micro-data offers a huge helping hand in understanding these mechanisms. These do not follow a one-size-fits-all type approach after all, and we therefore need to delve in all the specificities in order to move forward. In this sense, this is where geographers and economists increasingly meet, and where economists can learn a lot from geographers, who's old geographical approaches are much richer in their analyses. There is thus scope for more fruitful cooperation. Besides this, it is also important to realise that **these discoveries can have huge policy implications as the evidence in favour of the traditional arguments for cluster policies is getting weaker and weaker.** Clusters are thus still relevant, but for different reasons than the production-based reasons that we initially thought to be true.

### Presentation #2: Knowledge Clusters

Maurits de Hoog is currently both Professor of Urban Design at Delft University of Technology (TU Delft), and project leader at the Planning Department in Amsterdam. In the last few years, he has been researching 'environments of interaction', in close cooperation with TU Delft, Deltametropolis Association and the municipal planning departments of Amsterdam, The Hague, Utrecht, Rotterdam and Leiden. The results are planned

to be presented in the summer of 2012, and this presentation was based on the research findings that have been discovered up to this point. For more information on this topic, see the tIP01 Cultural Clusters expert meeting report.

In studying these environments for interaction, the research focus moved away from the traditional planning emphasis on businesses and logistics (i.e. airports, ports, fairs, CBD's and auctions), and instead, the study has looked at the interactions in culture, knowledge and congress-based sectors. This means that the spatial organisation of these clusters are very different depending on the city and cluster that is being looked at. These different typologies, and the characteristics and supporting programmes that they entail, therefore open up new ways of discussing and formulating the future of these types of possible clusters. This also means that the developments that are taking place in these clusters all vary, and that the interventions they may require are different per cluster. These different typologies therefore present interesting considerations when thinking about the future of these clusters.

### Campus clusters

For this presentation, Maurits de Hoog focussed on the types of campus clusters that currently exist. These include universities, as well as private companies, businesses and research facilities. **These typologies are not only important for understanding what kind of campuses exist, but also in terms of what this means for interventions and what the next steps can be in developing them.** Seven different types of clusters have been identified in this category, and these are explained as follows:

**1. Court complexes:** These are the oldest type of campus clusters, which are especially prevalent in old universities. These comprise a central court, which is used as the main public, shared space. Many other buildings, faculties and departments tend to be connected to this central court. Well known international



examples include Oxford and Cambridge university (UK) and Coimbra university in Portugal. In The Netherlands, a couple of universities are in the process of creating or redesigning such court complexes. Examples include the Binnengasthuis Complex (University of Amsterdam), where most of the departments of the Faculty of Humanities will be clustered together in the South-east of the medieval city to form such a court complex.

**2. Centre:** This traditional form of campus is very common in The Netherlands, and examples include the entrance on the Boelelaan at the VU University of Amsterdam, the Roeterseiland (in the East of the inner city of Amsterdam), as well as the Shell Research Centre in the Northbank of the IJ. Centre campuses are therefore not only restricted to university complexes, they are also applicable to private companies and firms. Most centre complexes have an internal space (an atrium for example) where people meet and where the main facilities are oriented towards. This design is also common in many academic medical centres, such as Hoboken (the former Dijkzicht Medical Centre in Rotterdam) and the Amsterdam Medical Centre in the South-east of Amsterdam.

**3. University Quarter:** These tend to be prominent in research-based campuses. They form larger quarters which have similar facilities, such as the mix of shops, restaurants and public spaces, and these are often surrounded by housing. New York University is a good example, as many of its faculty buildings lie in the grid pattern of Manhattan Island, and these are all oriented towards the central space in Washington Square park. This functions as the central amenity and facility of the area, which is open to both the university and non-university population. In The Netherlands, there are only a couple of university quarters, including Leiden university and the university of Utrecht. These have access to similar facilities as New York university, but at a much smaller scale.

**4. Campus on the Green:** This is the traditional campus. These lie outside of the city

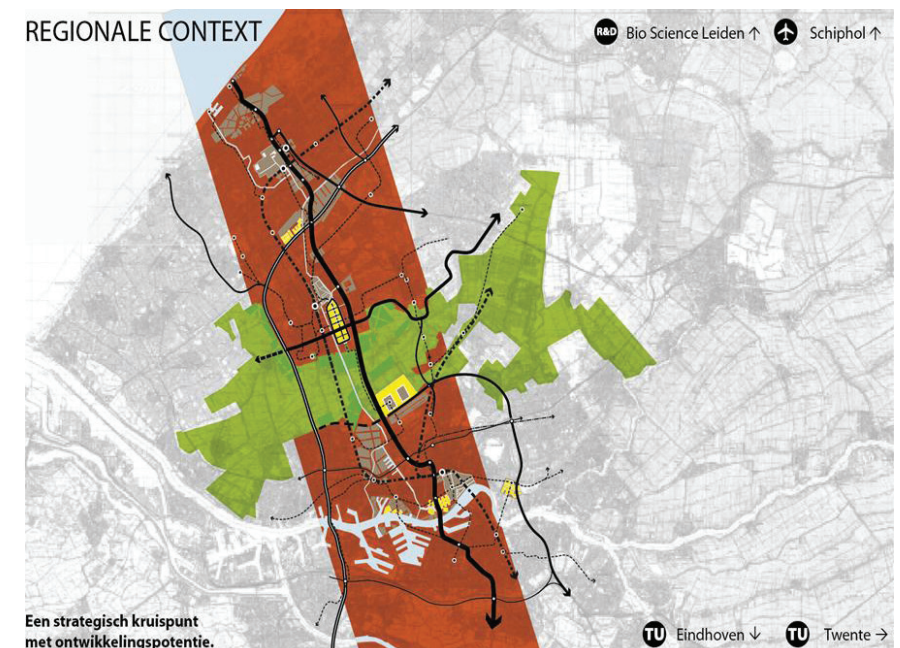
centre and include large green central open spaces. The campus on the green does not only include university faculties, but also dormitories for the people that study there. It therefore offers a combination of living and studying. The Netherlands only has one example of such a university campus: Twente University. This comprises a single entrance to an enormous park where people study and live at the technical university. The new High Tech campus of Philips in Eindhoven also has a similar concept, encompassing huge faculties with a large central space, however this is surrounded by a lake, not green space. Woudestein campus at the Erasmus University in Rotterdam is also working towards such a formation, which is currently just an ensemble of faculties. Changes are being made here to add elements of water, a main road and central facilities in the middle of the campus.

**5. Science Park:** These parks are based on combining (student) housing and companies and institutes within a large public space. The biggest example in The Netherlands is the Bio Science Park in Leiden, which comprises two universities: the University Medical Centre (LUMC) and the Institute of Mathematics, as well as over 70 different companies that are located in the park. These companies are mostly specialised in Bio Life Sciences.

**6. University District:** These are similar to Science parks, but at a much larger scale. The best known examples are MIT and Harvard University in Boston. Here the universities originally started as a different campus (campus on the green), but many new faculties, institutes, museums and industries located themselves in the surrounding areas. This led to the clustering of huge new industries, which were not directly connected to the district. In The Netherlands, there are a few university districts, including Utrecht's 'De Uithof' (a huge complex incorporating the medical centre and the majority of the other faculties of the University). Here student housing is integrated with other projects



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and facilities, which are located in a central space. TU Delft is also an example of a university district, which is very similar in scale to MIT.

**7. Valley:** A huge area, or region, where (a few) universities are located, amongst many firms. The most obvious example of this is of course Silicon Valley, which is located in a huge area in the South of San Francisco. This area is well connected to the airport and inner city of San Francisco. The valley offers a combination of a few universities with many new firms and companies over a large space. In The Netherlands, such a valley does not exist explicitly, however the top 60 of Research and Development (R&D) is located around the Technical universities of Twente, Delft and Eindhoven. These are measured by personnel and investments and the majority of the top 60 institutes and firms are located within and between these areas. It forms a North-wing type of pattern, with a couple of outliers including Wageningen and Utrecht.

### The future of Dutch campus clusters

With regard to the different types of campuses, the breakdown of what The Netherlands has to offer is as follows:

- **Amsterdam:** 6 clusters (+ 2 private centres): including a court complex, a couple of centre campuses and a Science park
- **Utrecht:** 2 clusters: a university district and a university quarter
- **Leiden:** 2 clusters: a Science park/university district and a university quarter
- **Rotterdam:** 2 clusters: a centre campus and a campus on the green
- **Delft:** 1 cluster: a university district

From these figures, it seems that Amsterdam is the biggest campus city in The Netherlands. This can be backed up with statistics which reveal that 27% of all students in the Netherlands study in Amsterdam. On the other hand, however, this is not necessarily the case. When you compare the sizes of these clusters with one another, as well as

the amount of facilities and institutes, then the story is much different, as Amsterdam does not score the highest. In this sense, comparisons can be difficult to make.

Although **Rotterdam** currently only has two campuses, it's trying to use these to its advantage. The city is investing in research in Hoboken and Woudestein (and more recently also in the Clean Tech Delta Campus in Rotterdam West) and it is trying to connect them with each other and the inner city itself. It is a huge project to integrate these complexes, but it is an attempt to make the most out of the potential they present.

Similarly, **Delft** is trying to improve its campus cluster which currently consists of too much empty space. Delft is therefore attempting to concentrate all its building activities in the South of the area. On the other hand, it is also exploring the options of its well-placed location between The Hague and Rotterdam.

In **Amsterdam**, the range of these clusters is much bigger as these are more spread over the city as a whole. The 6 clusters are also completely different in terms of their typology and integration with the city: the Binnengasthuis and Roeterseiland are both located in the city, for example, but the Roeterseiland is much more integrated in its surroundings than the Binnengasthuis.

**The typology therefore can really impact the way in which a cluster interacts with the rest of the city.** Besides this, the composition, consumption and the supporting programmes that different clusters require also all vary. The question therefore remains: what can be done with the spaces in-between? How can clustering help facilitate the making of connections, and how can it help create more mixed environments? Are the current planned changes in these clusters worth the investments they require, both financially and in terms of planning?

### Reflections

After the two presentations, a discussion followed on how these types of research can

influence policy in The Netherlands. **It was asked whether the Top Sector Policy in The Netherlands is currently based on the wrong assumptions**, and if so whether the research is suggesting that these should be steered towards new policies that stimulate other developments, such as urban cores for example. Henri de Groot remarked that this may be too simplistic, but that it is important that **we realise that the Dutch Top Sector Policies that are currently in place do not appreciate the complexity and importance of all the varied processes that are relevant**. According to him, Top Sector Policy in The Netherlands should be modest, from both the sides of the policy makers and economists. The money that is involved in these processes is so too after all. **The budget of the Ministry of Economic Affairs is presently very small, and with the lack of available money, we've ended up in a situation where all sorts of pressures are present, which are driven by vested interests based on past interests.** By focussing on the demands of the past, and not of the future, this effectively means that there is a huge strengthening of patterns which already exist. This is a big concern because **the current Top Sector Policies reinforces what used to be relevant in the past, and this is a poor predictor for what will be relevant in the future**. According to de Groot, this is one of the biggest political process struggles in The Netherlands at the moment.

In reaction to Maurits de Hoog's presentation, it was asked whether a link was found between the locations of the type of cluster and the type of study they involve. Various research papers have been written on these links, claiming that **Alpha students like to be located in the inner-city (this is why most Alpha faculties are located in city-centres), whilst Beta students prefer being away from the centre, in the green areas**. Similarly, these studies also claim that Alpha students tend to have less traditional compositions (e.g. single households, or dual-income families with no children) and they prefer urban culture, whilst Beta students tend to have more tra-

ditional families, who live in the suburban green areas and are more natural culture oriented. Although there was no clear consensus on whether these studies reflect the reality, de Hoog did find that the Humanity faculties in Amsterdam, Utrecht and Leiden are largely situated in the inner-city, while the more technical, mathematical and science-based faculties are located further away in the peripheral areas. The theory therefore seems to be a reflection of reality in The Netherlands, although this does not apply to the medical centres. These fluctuate more in terms of location: the VU Medical Centre is connected to the centre of the inner-city for example, whilst the Amsterdam Medical Centre is located much further away from the city. In Leiden, the LUMC is located near its central station to enhance accessibility, whilst Hoboken lies in the existing city, though not entirely central. There are thus variations in the locations of the medical centres.

As far as the research has shown, the success rate of a cluster does not seem to be linked to the scale of the cluster. **A bigger cluster is therefore not necessarily more successful than a small one**, however, according to de Hoog, the university districts currently appear to have the most promising future. This is because these districts have the most institutes and facilities, and because they are the most integrated and connected with the city.

**On the other hand, the availability of money and funding also plays a big role in the success of these clusters**, as is clearly the case with universities like Harvard and MIT. Nevertheless, connectivity is an important aspect of these clusters and in this sense, Delft could be much more successful than Utrecht for example, if it was better connected. In terms of connectivity, Delft has therefore also been looking at the possibilities of merging with the Universities of Leiden and Rotterdam. This could potentially be a huge improvement for all three universities, in terms of becoming a real, well-known physics centre, integrating the faculties and making them more



effective. It would also improve their rating, as when they are combined, they score in the top 10 rankings of best universities in the world. More likely, however, this would not be the case, as these rankings are based on content and not size.

Although the two presentations were very different in terms of how they dealt with issues of clustering, their arguments presented two sides of the same (or similar) coin; both were referring to issues which are intrinsically related, but in different ways and in different contexts. From an economic point of view, *it is a world-wide fact that concentrations of activities are related to productivity*. This is undisputed, but it does not necessarily mean that every place which is concentrated will automatically be more productive. In general, however, the pattern makes sense, as *when you have activities (of people and investments) concentrated in a particular space, the immediate effect is an increase in land prices. For employees to work in these places gainfully, this then typically also results in higher wages and labour prices*. Concentrations therefore generally lead to higher land prices and higher labour prices. This is also the case for the rate of internal capital, because the amounts of investments that are involved in concentrated areas (due to the higher land and labour prices), push productivity upwards. This does not mean that concentrating activities will automatically cause more productivity, but that where concentration exists, productivity has to be higher because that is the effect of the higher prices that are being paid to be there.

If concentrations exist without any other changes (other than increased labour and land prices), then the capital rewards will fall due to reduced performance and profits. This will lead to people and firms moving away from the area, because the cost-congestion effect price is too high. If activities therefore stay in a concentrated area, this means that other qualities are there that compensate for this. *This is the argument behind agglomerations: it is not simply about creating con-*

*centrated places, but about the positive outcomes that are generated through this (e.g. higher productivity, performance, business vitality etc).* These positive outcomes reflect that these areas involve extra mechanisms that are equal to, or more than compensating for the higher costs of these spaces. *The more that these mechanisms compensate for the high costs, the more concentrated, and thus attractive, the area will become.*

These compensating mechanisms which encourage concentration (and thus discourage dispersion) are largely unobservable. As Philip McCann explained: “these are things we just know”. Alfred Marshall (1842) was the first person to systematically write about these issues, which he based on two 19th century case studies on the cotton industry in Birmingham and the armaments and engineering industry in Manchester. These were the biggest industries at the time, and the cities became hugely populated, even though they were grim, working-class cities that could only offer people ad hoc employment with no contracts. People were thus living day-to-day, with no savings or pensions, yet these cities kept attracting more and more people.

The reasons why this was happening was unknown, although it was clear that it had something to do with all these people clustering together. In Marshall’s view, there was thus something that was attracting people to these cities which was unobservable. In his famous words: “The mysteries of the trade (...) are as it were in the air”. He realised that these unobservable attractors were hugely important and critical for cities, but he did not know how to capture these. *He thus made a list of three factors which were present in these cities, which he believed were important, i.e. knowledge interaction (and learning), the sharing of resources and the interactions of the labour market in these places.* This latter refers to the opportunities for ‘labour matching’ in cities, arguing that it is easier to find employment in concentrated areas because more opportunities are avail-

able to people in their geographical, as well as technical area. Besides this, businesses also prefer to be in these areas because of the large existing labour pool they contain. Even if these people need to be paid more, it is beneficial for businesses to move to these places because they already contain the skilled people they seek, effectively meaning they save on training and organisational costs if they hired people without the skills.

These arguments have all been production-based: they have no consumption element to them. This is thus not an all-encompassing point of view, because *people have preferences and choose to move to places for their intrinsic value*. Having said that, it is also important to remember that urbanisation, and the rise in popularity of urban spaces, is a relatively modern phenomenon.

Following the World War II, and up until the 1990s, most countries saw reductions in urbanisation, with decentralisation and suburbanisation being the norm. Then, at the end of the 1980s, there was a pattern switch, resulting in the modern era of urbanisation. *This was largely related to the effects of globalisation on the production side, in combination with the new nature of knowledge, information and technology.* This ‘modern era of globalisation’ was a huge shock for the global economy, and primarily took place between 1988-1994. In *The Netherlands, this shift happened in 1991, when the country’s policies switched from decentralisation to focusing on centralising Randstad Holland.*

With these changes in the economy, came changes in the ways of interaction. *The gains from concentration meant that face-to-face interaction suddenly accelerated massively. This especially involved knowledge workers across all sectors.* In other words, this was when the sorting effects really started to experience a shock. This relatively recent phenomenon was also largely influenced by new technologies, which favoured face-to-face interaction. A yuppie society phenomenon therefore arose, which indicated more than just a change in fashion (as fashion alone

cannot drive transformations in big cities), *it indicated a much more fundamental change which was related to technology, changing economies and new forms of interaction.*

The sorting effect in favour of concentration attracted people from the peripheral areas, who resided to the cities in order to make money. These yuppies brought with them the preferences, values and demands for high quality amenities, which they also had in the rural areas. *These high-income people carried out their preferences and aspirations, as they could afford to pay for these.* This effectively meant that lower-income groups were being pushed out of certain areas through the market process. The transformations of these urban places through globalisation and this ‘young-persons phenomenon’, were completely new for developers at the time. *This has put urban planning and architecture back in the forefront in terms of facilitating and revising this new type of urban life.* Importantly, these changes were both production and consumption driven, and this had to be taken into account when designing for the new urban lifestyles. An extreme example where these production and consumption-based sorting effects play a role is when you look at the housing market in New York. Here, some apartments are now being sold without kitchens because it is more cost effective: high-income workers in Manhattan simply don’t need to cook, as there are numerous, cheap culinary options available in the area and it is therefore more cost effective to eat out, than to pay for the extra space that a kitchen would take up.

*The largest numbers of high-income groups that can carry out this sorting effect (i.e. act out their preferences) are university graduates.* Modern university students have a much different take on what university means for them, than students did in the past. *University is increasingly seen as a consumption good: as part of a life-long consumption experience.* This lifestyle choice will work towards building a future career, but while these students are studying, they

expect to get the best possible experience of student life, 24 hours a day. For this reason, [the design of spaces for living and studying, and the way that a campus looks, the facilities it has and the activities it offers have all become increasingly important. This is a new challenge that architects and planners, as well as struggling cities, face worldwide.](#)

In terms of the sorting effect and its interaction with consumptions, it is important to note that [universities are increasingly becoming engines for urban transformation in places that are struggling.](#) On the one hand, well-known universities that are located in beautiful places, such as Cambridge or Oxford, generally do not have to do much to attract students. It doesn't really matter what they have to offer, as these places are already nice and students will want to go there anyway, regardless of what planners do to it. On the other hand cities and universities that are struggling can really benefit by changes in their planning and development. This is something that is a big issue in the North of England where there are many cities whose natural motor of development is disappearing, or has already disappeared. Classic cities, such as Sheffield, Leeds and Liverpool, have all experienced losses in their production drivers and for these cities, [universities can act as important anchor points for attracting investment and development, especially from the consumption side.](#) The role of the city, and these urban spaces are therefore being transformed in a regional development strategy, and this is true for struggling cities all across the world.

A successful example of where universities have helped transform a place is Pittsburgh, Pennsylvania. This is a classic steel town, which was struggling and shrinking. The city did have a couple of museums and art galleries, however, and it has two universities: Carnegie Mellon University and University of Pittsburgh. By means of heavy investments in cultural activities, student facilities and accommodation, the city managed to transform the area by building a

whole concept around these themes in the centre of the city. This strategy was very successful, and by investing in student facilities and accommodation, the real estate prices in Pittsburgh also started to increase. By doing so, the city managed to become a consumer city, even though there no longer is any steel manufacturing in the city. Instead of leaving Pittsburgh once their studies are over, students now tend to stay in the area and set up their own businesses. [It has thus effectively become a SME in a high tech hub. Universities can therefore play an important role in these type of transformations, and urban design plays a crucial role in this as a "good design can really build a place".](#) Having said that, it is important that the place does have either some production or consumption amenities, as without these, it can be very difficult to do anything. In terms of our current knowledge base, Philip McCann believes that we do not yet know enough about how the consumption issue relates to the production issue in cluster formations. "The clue may lie in commuting behaviour, but universities also play a big role in this". [University years tend to be the times in people's lives when migration, and the choices that are based on this, play an important role, so we can still learn a lot from universities.](#)

In reality, however, many planners have the belief that investing in the cultural facilities of struggling cities is a waste of money. This is really not the case though, because cultural facilities such as opera houses and museums add to the attractiveness of cities which help bring firms to the city, which will in turn make investments in the city and its technology. It is thus a consumption amenity argument: [without these cultural facilities and amenities, the city will experience an adverse sorting effect.](#) Furthermore, if you do not invest in cities, then starting entrepreneurs will not be given the credit they need to start up their businesses, because all banks work on credit systems which are driven by the probabilities of having successful returns on their loans. These are dependant on the

vitality of the real estate markets, because these determine the real estate collateral ratings. In other words, the qualitative investments in art, culture, heritage, entertainment etc. are all part of creating a successful city. Our knowledge on where these boundaries lie is still not adequate, however. [Some cities, like Groningen, manage to attract people by just having a gem in the middle of the city, which is enough of an amenity to keep the wider functional labour market across all the skills there, whilst others need several amenities to attract people.](#) We therefore do not yet know enough about the way in which this operates and how this develops.

In term of preferences it is important to remember that people have preferences for where they live, and these preferences are carried out. Broadly speaking, this translates into high-income people living in places where other high-income people live. Low-income people therefore also tend to live in areas with other low-income people, but this is mainly because they have less choice in carrying out their preferences. This is not necessarily a negative phenomenon however because people all tend to have the same values and preferences and they can therefore work together. On a more complex level, however, the configurations of these movements have a substantive nature to them and if these interactions are tampered with, it can cause tremendous social damage in neighbourhoods (e.g. lack of social participation, no incentives to invest in public goods, isolation problems etc).

This idea is based on the theory of social capital and Helena Patacchini and Yves Zenou published an important study on this in the Journal of Regional Science in 2011. They discovered that [the intergenerational effects in high-income areas are greater than in low-income areas.](#) The reason for this is that in high-income areas, the returns to educational investments are systemically higher due to the high-income knowledge interactions between people in these areas. For lower-income income groups, the education levels

are much lower, so the return of investment of spending time with children is therefore also lower. Not only do these lower-income groups lack the skills, but they also tend to have lower expectations of what is on the job horizon. [When lower-income groups move to higher-income communities, however, the peer group effect on these families is incredibly strong and positive.](#) Even if the move is only slightly higher. Crudely said, this means that children who grow up in low-income areas have substantially less chances because of the surrounding environment which works against them. As Philip McCann explained: "it is a situation where even if you have the ambition and work hard, your children will get beaten up by local gangs for studying". This study was based on thousands of observations and proved that the peer group effect can be highly influential in creating positive, cumulative effects, but also in facilitating catastrophic negative effects. This can easily be observed in London, for example, where if you move one kilometer to the East of the city docklands, you end up in an entirely different world. [This is where design and architecture can play an important role in creating places that allow for mixing and which counteract the problems of isolation and fragmentation.](#)

### Zuidas

In terms of the Zuidas, several attempts have been made to improve its image and make it a more vibrant centre. More on this you can also read in TIP 03|07, Flagship Development. Together with the VU and UVA, Amsterdam Bright City (ABC) has looked at ways to further develop the Zuidas, beyond just being an office location that runs empty after business hours. [Its aim is to create a Zuidas community.](#) ABC has looked at ways in which it can entice people to stay in the Zuidas, and in its research, ABC has specifically focussed on four groups: the students in the area, the community inhabitants, the professionals that work there and the professors and staff that work at the universities. Trying to combine these four groups proved



to be a difficult task, however, because all these different people have different plans interests and wants. The young people have little time with their busy schedules, and it became clear that an extremely good programme, with interesting themes for discussion would be needed to get them involved.

One of the focal points for ABC is to see how a mixed community can be created, which is representative of the whole diversity of the Zuidas population. This therefore also includes foreign students and immigrants, and getting these groups involved is another big challenge. *In order to do so, ABC worked in cooperation with young people from TANS (an organisation involving 3,000 highly educated Moroccan-Dutch people), Tannet (a Turkish academic network) and ASN (an Asian exchange community).* This approach was more successful, as these young people really wanted to see the Zuidas as their main meeting point.

The next step now is to try and get these people out of their networks and comfort zones, and to connect them with other networks. This is extremely difficult, however, as the Dutch environment is considered hostile and unwelcoming to foreigners. This is why many foreigners have the tendency to stick together, as do the native Dutch people themselves. It can be very difficult for foreigners to become part of these groups. What the Zuidas therefore needs is something which will enhance the interaction between the groups in this area. These problems are likely to disappear over the next couple of generations, through natural integration processes, but for now, these issues play a big role stunting the full potential of the Zuidas. *In order for the Zuidas to become a successful area to invest in, it is essential that these issues of exclusion are tackled and that the Zuidas manages to become a multicultural society.*

Henri de Groot pointed out that one factor which may be influencing the potential growth of the Zuidas is the fact that a striking 85-90% of students in The Netherlands still lives with their parents. This can have

huge negative implications for how successful the creation of such an area can be, as students tend to just go home after the regular lecture hours. The opportunities for making a difference in the area may therefore be severely hindered by this. In Pittsburgh, the situation was the reverse of the Zuidas, as students had to move to the city in order to study there. The commuting distances there are simply too large for students to still live at home. In this sense, *the excellent accessibility of the Zuidas may therefore also be its biggest problem. In combination with the high property prices in the area, and thus lack of affordability, students are simply not presented enough incentives to move there.* They may want to, but they cannot afford it. It may therefore have been better for ABC to have been located further away from the city. In this sense, sorting at very low levels of spatial aggregation can be critical in these situations.

It is important to remember that the period in which people go to university is a critical point for interaction. This is the time when people are the most open and when most networks are formed. This is thus also the time when living away from home is the most important, as it enables students to make optimal use of these formations and to really route themselves in the city. In Amsterdam, this may be less of a problem than in shrinking cities such as Rotterdam.

Rotterdam is currently struggling to retain its highly-skilled people, primarily because the local factors are insufficient to keep these people. This is where short distances can once again be a problem, because *working and living are so disconnected in The Netherlands.* People can easily live in one city and work in another, and this may be why cities such as Rotterdam are running empty. On the other hand, however, Rotterdam does have the advantage of having many cheap office spaces on offer (due to its high vacancy rate), and this can work as an incentive for businesses to move there. In this sense, this advantage can add a completely new vibrant

element to the city centre.

In terms of figures, it is important to remember that statistics do not always reveal a full reality. A recent study revealed that in the past 40 years, the rate of highly educated people in Amsterdam increased from 10% to 40%, while those in Rotterdam shrunk from 40% to 10%. This may be an indication that Rotterdam is becoming less educated, but on the other hand, *these statistics are based on where people live, and not where they work.* It may be the case, for instance, that many more highly educated people work in Rotterdam than it appears.

Besides these differences in education, a big problem in The Netherlands is that cities such as Amsterdam have high inflows of skilled workers, which is causing the disappearance of the middle-class. *Although high-income workers can afford to live in these cities, they also need low-skilled people to carry out the service jobs. This is a hidden effect that is happening all over the world, where the middle-class groups cannot afford to live in these cities, so they end up living in the lower-income areas.* This consequentially leads to them competing for low-income jobs, and a disconnection from the higher-income groups. This is highly observable in Vancouver, the most segregated city in the world, as well as the city with the highest quality of life. In Vancouver, all the high-income groups are located together, and this is where the quality of life indicators are composed. It is the multinational companies that carry out these indicators, asking corporate executives about their experience of the city. They do not ask these questions to the lower-income groups or people who are less well off, because their compensation payments are based on these indications. *The higher the ranking of the quality of life, the lower the amount of compensation that is paid for being posted there. Quality of life indicators can therefore really hide the reality of segregation and inequalities.*

In the North of England, the changes that the universities have brought with them have

been highly successful. The city of Sheffield used to be incredibly deprived, for example, but it has changed tremendously over the past few years. The inner-city has been transformed into a vibrant city centre, with renovated old historical buildings, many offices, bars, shops, and restaurants. It is extremely accessible and feels safe with the hustle and bustle of the people that live there.

Similar strategies have been adopted in other Northern cities, which have focussed on providing very high quality, but reasonably priced student accommodation. These all entail high quality provisions, which are well advertised (through university brochures, websites and information) and they are usually easily accessible, close to public transportation and have high safety measures. The strategy has focussed on creating many of these types of accommodation, which can cater for hundreds of students. In turn, this has become a big source of revenue for the universities and the cities themselves. This, after all, is what students want, because they are close to their friends and feel safe in the new city in which they will study.

The universities have also used their financial resources to develop these campuses in terms of high quality office spaces and encouraging mixed developments. By offering short-term leases, for example, start-ups are encouraged in these areas and this has made these cities attractive for businesses. Furthermore, the encouragement of mixed use has also tackled the problems of isolation and it has really changed many cities in the North of England. *Investing in high quality student accommodation can therefore really make a difference as a long-term policy.* This will not happen by itself however, so a push is needed to start this process, but this strategy can lead to many fruitful outcomes.

In the Zuidas, the VU is attempting a similar strategy, by building more student apartment blocks in-between the faculties. The university wants to change the faculty structures that they currently have, by dividing the amenities and facilities into specific

functions (i.e. where all the libraries, dinner facilities and cafés are combined). By splitting these programmes, the VU is aiming to create a bigger mix of functions. Philip McCann did warn that the VU should be careful not to produce a factory system through these provisions. This is ultimately not what students want. [What students do want, is wide open spaces, which are highly differentiated and offer many options. A village effect so to speak.](#) This approach was adopted in the North of England and has been very successful up until now: not just for the students, but also for the inhabitants of the city.

On a final note, [Henri de Groot pointed out that time is an important factor which should always be taken into account. The past 10-15 years have been historically unique, as urbanisation and growth has been driven by a general purpose technology \(in this case ICT\). Historically, it has been proven that every time a new general purpose technology kicks in, it is at the advantage of the higher skilled population. In combination with the sorting effect, this largely explains the recent success of many cities that have attractive amenities and facilities, as these are attractive for high-skilled people. This was also the case in the USA in the 1920s, for example, where a new general purpose technology gave rise to a very positive dynamic, which was then followed by a crisis. The past 10-15 years of development have therefore been historically unique and although some cities are flourishing now, this is no guarantee that they will keep being successful. This is why investing in universities may seem attractive now, but we should be aware that recent developments do not provide any guarantees for the future. Location and time specific factors are therefore critical when talking about plans that take a long time to materialise. In this sense, modesty and awareness of the historical context is critical.](#)

## Agenda

Out of the expert meeting, the following agenda was proposed to further develop the knowledge clusters in Randstad Holland:

In terms of the customised investment agenda based on Top Sector policies, we need to appreciate that the world is much more complicated and varied than what seems to be implicit in the Top Sector policy approaches.

The relevance of looking at the ultimate drivers behind these processes is vital. If these assumed agglomeration externalities are involved, this means we have a very strong argument for public policies that foster clustering. If not, these types of policies need to change, to focus on just creating the prerequisites for certain types of development for example.

Furthermore, the Top Sectors approach may currently be reinforcing what used to be relevant in the past and this is a poor predictor for what is going to be relevant in the future. The focus should therefore lie more on programmes that allow for change: breaking down barriers between sectors, supporting learning environments and improving the quality of places.

Policies should take cities and regions more seriously in order to promote innovation and entrepreneurship, embeddedness and connectivity. Universities play an increasingly important role in linking and improving places. The Netherlands is currently not using this capacity to its full potential.