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Conquering The Seventh Year Itch: Viva AM²!

More than 30 migration experts from various countries united at IZA in Bonn, Germany to attend the seventh Annual Migration Meeting (*AM²*), organized by Dr. Amelie F. Constant, DIWDC Executive Director and IZA Deputy Program Direction in Migration, and Dr. Barry R. Chiswick, Professor at the University of Illinois at Chicago and IZA Program Director in Migration. From June 3rd to 5th 2010, as many as twelve scholarly papers on a variety of migration topics were presented and discussed by the migration scholars. Going strong for the seventh year, AM² consisted of seven sessions. Each paper presentation was formally commented upon by a discussant and followed by floor discussion (http://www.iza.org/conference_files/amm2010/viewProgram?conf_id=1834).

This year's AM² broke some significant records from previous years as one of the most selective conferences with a seventeen percent submission acceptance rate chosen from an overwhelming pile of sixty-five applications. Eleven very impressive papers were presented along with a very stimulating keynote speech. Additionally, this year's meeting included an impressive balance of male and female presenters from fourteen different countries. Research from these presenters was rich in diversity as research topics were conducted on nine different countries.

Following the welcoming remarks by Amelie Constant and Barry Chiswick, the meeting started with Session A entitled *"The Highly Skilled of the Past, Networks and Child Labor of the Present."* Mevlude Akbulut Yuksel (Dalhousie University and IZA) presented her paper *"The Unintended Long-Term Consequences of Dismissal and Exile of High-Skilled Professionals: Evidence from Nazi Germany,"* co-authored by Mutlu Yuksel (IZA) and discussed by Carmel U. Chiswick (University of Illinois at

Chicago and IZA). This paper examined the impacts of the dismissal and exile of the educated Jewish professionals on the educational attainment, labor markets, and political and social capital consequences of German youth during the Nazi regime. The authors discovered that the dismissal and exile of these Jewish professionals had adverse effects on human capital formation, the labor markets and the political and social outcomes of Germans who were in school during this period. For example, not only young children had a lower probability of attending college, but they also obtained half a year less of schooling. The next paper in this session *"Immigrant Networks in Australia: Do they Help Newly Arrived Immigrants to Find Jobs and Get Higher Wages?,"* was presented by Yevgeniya Savchenko (Georgetown University) and was co-authored by Francis Vella (Georgetown University and IZA). The discussant of this paper was Konstantinos Tatsiramos (IZA). This paper analyzed the effects of immigrant networks in the Australian labor market, and specifically on the employment and income of newly arrived immigrants. The authors found that the network of British immigrants is successful in assisting these individuals in terms of employment possibilities and average income. At the other end they found that the Chinese immigrants' network decreases the probability of employment and results in a lower income for the Chinese new immigrants. A non-statistically significant relationship was discovered between the employment probability and income of the Indian and Filipino immigrants and their ethnic networks in Australia.

After a brief break, Session B, *Immigration and Family Interactions*, started with a presentation by Lidia Farre (Institut d'Analisi Economica) on "*Immigration, Family Responsibilities and the Labor Supply of Skilled Native Women,*" which was co-authored by Libertad Gonzalez (Univer-sitat Pompeu Fabra and IZA) and Francesc Ortega (Universitat Pompeu Fabra and IZA) and was discussed by Corrado Giulietti (IZA). In this paper, the authors examined the impacts of immigration on the labor supply of skilled native females. Their results indicate that female immigration into a region not only expands the availability of local household services in the region, but also reduces the price of services. Likewise, their estimates showed that the inflow of female immigrants into the household service sector contributes to an increase in the employment rate of skilled, native, female workers as the immigrants assist the native female workers in house work and child rearing.

Session B continued after the lunch break, with a

presentation of a paper entitled "*Impact of Remittances on Child Labor in Ghana.*" The paper was presented by Sonia Plaza (the World Bank and IZA) and was co-authored by George Joseph (the World Bank); the discussant of this paper was Ruby Henry (IZA). The authors investigated the effects of remittances on child labor in Ghana using the latest nationally representative household survey. Specifically, they examined whether the decisions to send their children to work or not differs among households receiving international remittances, households receiving domestic remittances and those that do not receive any remittances. The authors found that receiving remittances reduces the prospect of children joining the labor market by approximately 2% and that domestic remittances appear to have no impact on the households' decision to send their children to work; international remittances contribute to the declining labor supply of children. The next paper entitled *"Does Intermarriage Pay Off? A Panel Data Analysis of Immigrants in Germany"* was presented by Olga Nottmeyer (DIW Berlin and IZA) and was discussed by Anna Myunghee Kim (IZA). The paper investigated the effects of intermarriage on labor market productivity by disentangling the impacts induced by the native spouse from effects that generate partners' choices and economic accomplishments. Nottmeyer discovered that intermarriage contributes to greater financial returns and to a better assimilation into the labor market. The author also found that experience obtained in intermarriage can be negatively rewarded perhaps because of the differences in gender roles and human capital allocation between intermarriage and intra-immigrant relationships. Moreover, the author found that highly-educated immigrants married to a native spouse experience better economic integration than less-educated immigrants.

The meeting proceeded with the Julian Simon Lecture, a keynote in honor of the late economist and migration advocate. Julian Simon, a migration expert and a major supporter of an unrestricted migration policy, was Professor

of Business Administration at the University of Maryland, Distinguished Senior Fellow at the Cato Institute, and a member of the Action Institute's Advisory Board. He wrote approximately 200 academic studies and numerous articles for *The New York Times, The Wall Street Journal,* and other such mass media. He published in 1989 his book entitled *The Economic Consequences of Immigration,* which stated that immigrants contribute to the U.S. economy considerably. Nine years later and at the age of 66, he unexpectedly passed away. During the Julian Simon Lecture, Eskil Wadensjö (Stockholm University and IZA) presented the *"Experience of the Common Nordic Labour Market."* The keynote analyzed the development of the Common Nordic Labor Market, the flow of migration and their determinants, and the inter-Nordic migrants' economic integration. Prior to the 1970s, Sweden was the main destination country for many immigrants thanks to its higher wages and job vacancies; Finland was the main country of origin. After the 1970s, differences in earnings gradually declined between the countries and vanished. Instead of Sweden, Norway emerged as a major destination country. During the 2000s, traveling across the borders increased, yet immigration and commuting within the nations were much higher.

The second day of the meeting resumed with Session C on *Immigrants and Language*. *"The Role of Language in Shaping International Migration: Evidence from OECD Countries 1985-2006"* was presented by Mariola Pytlikova (Aarhus School of Business) and was co-authored by Alicia Adsera (Princeton University and IZA). The discussant of this paper was Barry R. Chiswick (University of Illinois at Chicago and IZA). Using data on immigration flows and stocks held by foreigners in 27 OECD countries from 1985-2006, this paper examined the role of linguistic proximity in the decision-making of migrants. The results indicated that proficiency of the language of the destination country or of a commonly spoken language in the country enhances immigration success in the labor market of the destination country. Jens Suedekum (University of Duisburg-Essen and IZA) presented *"Dialects, Cultural Identity, and Economic Exchange"* that was co-authored by Oliver Falck (ifo Institute), Stephan Heblich (Max-Planck-Institute Jena), and Alfred Lameli (Deutscher Sprachatlas of University of Marburg). This paper was discussed by Zahra Siddique (IZA). The paper evaluated linguistic data from a language survey conducted between 1879 and 1888 in approximately 45,000 German schools and examined the economic implications of cultural ties in 439 regions in Germany. The paper had a more precise scope than earlier studies and determined the effects of culture on economic exchange. Results showed that, within a nation, there exist cultural borders to economic exchange and that an increase in dialect similarity by one standard deviation raises the migration flow by 6%.

Devoted to *Immigrant Earnings,* the ensuing session was chaired by Klaus F. Zimmermann (IZA, DIW Berlin, and Bonn University). Session D began with a presentation by Sherrilyn Billger (Illinois State University and IZA) (pictured above) on *"Immigrant Heterogeneity and the Earnings Distribution in the United Kingdom and United States: New Evidence from a Panel Data Quantile Regression Analysis;"* co-authored work by Carlos Lamarche (University of Oklahoma). The paper was discussed by Annabelle Krause (IZA). The authors investigated the native immigrant earnings differentials throughout the conditional wage distribution while controlling for individual heterogeneity. Integral factors determining these differentials were country of origin and of residence as well as gender. The results showed that in the U.S. wage discrimination occurs among female immigrants whose English is not their native language and that the wage penalty is strongly negative among those with the lowest conditional wage. Au contraire, wage differentials among females barely exist in Britain. However, male immigrants in both the U.S. and the UK earn a lower income. The session concluded with a paper on *"Reservation Wages of First and Second Generation Migrants,"* presented by Ulf Rinne (IZA) and co-authored by Amelie Constant (DIWDC, George Washington University and IZA), Annabelle Krause (IZA) and Klaus Zimmermann (IZA, DIW Berlin, and University of Bonn); Martin Guzi (IZA) was the discussant of this paper. Based on a new dataset with rich information on the unemployed in Germany, this paper investigated reservation wages of first and the second generation immigrants. The study discovered that there is a reservation wage gap between the first and second generation of approximately 4.3%, implying that the second generation immigrants earn a higher wage than the first generation. If other characteristics

are not held constant, such a gap increases to 5.1%. Such a gap exists because the second generation immigrants place a higher return to their characteristics, particularly education, than the first generation immigrants.

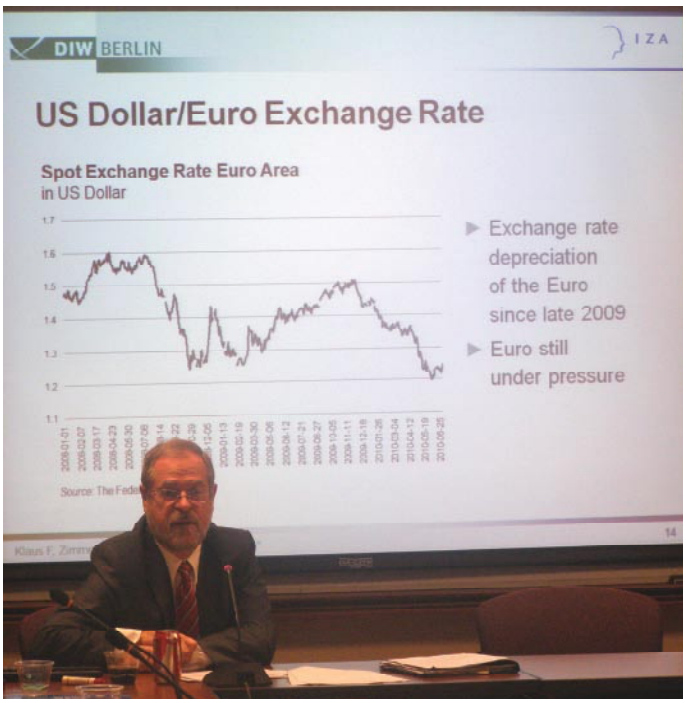
Last but not least was Session E. Pertaining to *Immigrant Occupations and Education*, it began in the afternoon with a research paper entitled *"Occupation-Education Mismatch of Immigrant Workers in Europe: the Role of Home and Host Country Characteristics."* This paper, co-authored by Ahmed Tritah (CEPII), was presented by Mariya Aleksynska (CEPII, Paris) and was discussed by Mutlu Yuksel (IZA). The authors examined the degree of mismatch in occupation and education of immigrants in the EU during the past ten years. Analyzing its determinants, the results indicated that immigrants have a greater chance of being over and under-qualified for a job than the natives and that transferability of human capital ameliorated the occupation and education match in the country of destination. This final session concluded with a presentation by Chad Sparber (Colgate University) on *"Quotas and Quality: the Effect of H-1B Visa Restrictions on the Pool of Prospective undergraduate students from abroad,"* co-authored by Takao Kato (Colgate University and IZA) and discussed by Yevgeniya Savchenko (Georgetown University). The authors investigated the impact of restrictions on temporary employment visas (H1-B) to skilled immigrants on the quality of prospective international students to the U.S. They discovered that limitations on the H1-B visas discourage highly-qualified foreign students who deem studying in the U.S. as a path to possible future employment in the U.S.

The 7th AM^2 came to a grand finale with lunch at IZA's back-yard overlooking the Rhine after co-organizers Amelie Constant and Barry Chiswick (pictured above with Klaus Zimmermann and Eskil Wadensjö) thanked the participants and pledged an exciting 8th AM^2 in 2011, to take place along with the 3rd Migration Topic Week. Participants continued their thought provoking migration discussions at the well attended wine and cheese garden party that took place at the Zimmermanns' villa. Statistics on this popular and sought after annual meeting on migration show that its co-organizers have found the right recipe to keep it going. Discussing and debating migration issues during breaks, lunches, dinners and social events are as important as the actual paper presentations. Over the last seven years, AM^2 had served as a cocoon for ground breaking research as well as a springboard of new collaborations -- "A refreshing higher female gender ratio this year attests to the fact that women are strong scholars in the economics of migration" (pictured above), said DIWDC Director Amelie Constant. ■

"G-20 Transatlantic Cleavage" Speech Brings the Conference Room to Capacity

Co-organized by DIWDC and hosted by the Center for Strategic & International Studies (CSIS) in Washington DC, the July 15 luncheon speech featured Prof. Dr. Klaus F. Zimmermann who talked about the transatlantic relations after the G-20 Summit in Toronto in late June. The speech was moderated by Dr. Sidney Weintraub, the William E. Simon Chair in Political Economy at CSIS. It was attended by high-profile community members from universities, embassies, think tanks, the media and other international organizations in the Washington DC area.

The fourth G-20 meeting of the heads of states in Toronto ended in a cleavage between the U.S. and Europe and left the economic world in diversity. The two commanding powers across the Atlantic – the U.S. and Europe – will now follow different economic strategies, heading towards regionally different regulations of the financial markets and different models to improve potential economic growth. While the U.S. is adopting a riskier Greek model, Europe aims at a strategy of growth-enhancing fiscal stabilization. DIWDC Chairman Prof. Dr. Klaus F. Zimmermann talked about this transatlantic divergence, and advocated the need for new fiscal stabilization policy to achieve sustainable and balanced economic growth.



Based on economic data and recent statistics, and using Germany as a European paradigm, Dr. Zimmermann discussed the current GDP growth and unemployment situation in Germany and the U.S. He showed that although GDP steeply declined in Germany compared to the U.S., employment in Germany has been constant. This German Miracle (*Wunderbar*) of the 21st Century is mainly due to short-time work (*kurzarbeit*) practices that created a scope for buffering capacity within firms and recent labor market reforms and behavior of social partners. Additionally, the crisis mainly affected export-oriented manufacturing firms. Those firms face a shortage of qualified workers and dismissals would entail a significant

loss of firm-specific human capital.

In other words, German firms (with the blessing and support of the German government) followed a strategy of massive labor hoarding. In the meantime, the U.S. labor market is becoming worse-off because of the broad impact of the economic and financial crises and the sharp increase in productivity.

Facing this global economic crisis, countries all around the world run a growing public debt, with a debt to GDP ratio almost 9% in the U.S. and 7% in the Eurozone. Moreover, aging and adverse demographics result in further risks for public debt and a heavier burden on the public coffers in both regions. How to tackle these problems, that is, checking excessive public debt and regulating the financial markets, is the point of dissention among the G-20, causing a transatlantic cleavage. Europeans claim that running heavy public debts have led to a weak Euro and that the announcement of budget consolidations came too late. For Europe, it is better to cut back on government spending in order to obey the Maastricht deficit limit of less than 3% of GDP and also keep a stable and strong Euro. For the U.S., budget consolidation could jeopardize global growth and economic recovery that is still fragile and thus strengthening domestic demand is a better alternative. This dissensus became a major issue in the Toronto G-20 Summit and was still not solved after the meeting.

The G-20 Summit with the theme *Recovery and New Beginnings*, ended with an agreement on only a few issues. A positive sign was China's announcement of more flexibility in its currency's exchange rate. However, regulation of the financial markets was not solved and the debate on budget consolidation versus strengthening domestic demand remains.

In the end, Dr. Zimmermann pointed out that it is time for a new supply side strategy, and called for a growth-friendly fiscal consolidation with regulation of financial markets, free skilled labor migration, rising female work force participation, structural reforms of labor market, a strategy affecting education and fostering free trade as the keys to recovering from the global recession. After the presentation, Dr. Zimmermann answered questions and discussed transatlantic economic issues with the audience. ■

A Profile: Professor Spyros Konstantopoulos

Featured as a distinguished guest lecturer at DIWDC's lecture series "Distinguished Scientists and their Stories," Professor Spyros Konstantopoulos engaged in a discussion with the doctoral students on Education and Methodology in DIWDC's conference room in February 2010.

Professor Konstantopoulos has focused his research on Education, Social Science and Policy Studies through the extension and application of statistical methods. Now, an associate professor of measurement and quantitative methods at the Department of Counseling, Education Psychology, and Special Education in the College of Education at Michigan State University, Professor Konstantopoulos continues to be a key contributor to the ever expanding breadth of research on education and research methods.

Prior to his position at Michigan State University, Professor Konstantopoulos was an assistant professor at Boston College and the Lynch School of Education and at Northwestern University and the School of Education and Social Policy. He was also a post doctoral fellow at the University of Chicago and the Data Research and Development Center. He received his Bachelors degree in Education from the University of Athens and his first Masters degree in Research Methods from Purdue University. He then received his second Masters degree in Statistics from the University of Chicago. In 2003 he received his Ph.D. in Research Methods from the University of Chicago.

With his extensive backgrounds, Professor Konstantopoulos has conducted research on the effect of class-size on students, teacher and school effects, program evalution, labor market performance of young adults, and social distribution of academic achieivement. He has been a vital member of IZA, Bonn, serving as a research fellow since December 2003. Since 2005 he is also a member of the Society for Research Synthesis Methodology. Throughout the years, he received numerous awards including the Palmer O. Johnson Award from the American Educational Research Association in 2002 and the Harold E. Mitzel Award for meritorious contribution in education practice through research. Professor Konstantopoulos also serves on the Editorial board for Sociology of Education, Journal of Research on Educational Effectiveness, and Educational and Psychological Measurement, and serves as an Associate Editor for Research Synthesis Methods.

Professor Konstantopoulos has published close to 40 research papers in prestigious scholarly journals as well as contributed to several books about his research. Some of his work on small class effects has been in the public eye and has appeared in the Washington Post, Education Week, and the Chronicle of Higher Education.

In a recent comprehensive interview with DIWDC's intern, Carolyn Ferguson, Professor Spyros Konstantopoulos commented on his research and the developments in the American Education system. DIWDC was able to gain a personal perceptive on Professor Kostantopoulos' many academic achievements in his field of expertise.

Q: What drove you to specialize in education and research methods?

After my Bachelors, I worked as a 4th grade teacher for two years and this is where I developed an interest in what works well in schools, how one can increase student achievement and so forth. During graduate school, I started getting more interested in statistics and its applications to educational research. A lot of the questions that we ask about the effects of teachers, or school resources on student achievement can be addressed with carefully designed studies and sophisticated research methods.

Q: What prompted you to begin working with Project STAR (Student/Teacher Achievement Ratio)?

Project STAR is a very unique dataset. It is a randomized experiment that took place in Tennessee in the mid to late '80s; it was a state-wide experiment with the main objective to examine whether class-size is related to student achievement. I started working on this project with my adviser and some other colleagues when I was a graduate student. I was always interested in how school resources affect student achievement and class size is one of these resources that has important implications for policy. I have conducted a few studies on the effects of small classrooms on student achievement using mainly data from Project STAR. Recently, I've been using other kinds of data to see whether the STAR results are replicated with other datasets.

Q: As an education scholar with an international background, how do you judge the American System of Education on its own and compared to other educational systems throughout the world?

In any system there are strengths and weaknesses. One of the strengths of the US education system is its "variability." This variability is a good thing on the one hand because the local component, the neighborhood component, is incorporated; it is not as standardized as in other countries. But on the other hand, this variability typically indicates that parents select which schools their children attend and as a result children from advantaged backgrounds may have different educational experiences than children from disadvantaged backgrounds. In Europe however, things are different. The education system in Greece, for example, operates under the Ministry of Education which decides what all the schools in the country should do for specific grades in a specific year; so the local component is minimized. The majority of the public schools follow the specific instructions, guidelines and directives that come from the ministry. Therefore, there is not much variability or selection in terms of students. These two are very different systems. In my mind the major difference of the US system compared to other systems is that it varies a lot in what students receive from schools.

Q: Economist and Nobel Laureate James Heckman is now working on the benefits of early childhood education and the importance of non-cognitive factors. He advocates that education before school and education outside the school environment are essential in shaping future outcomes such as whether people drop out of high school and earn lower wages. What is your view on that?

I totally agree with Heckman. I think that's a good thing to do, and parents and society as a whole should be involved in their children's education. I really believe that investing in early childhood education is the way to go. Our children are our future; the backbone of our society and economy. Focusing not only on achievement, but on other factors makes sense. I think the logic of all of this movement is that if we start early and create opportunities for all students of all backgrounds we may see more immediate but also lasting benefits in the future. We may see more individuals going into college, graduating from college, and have perhaps better performance in the labor market. That will keep America strong and a worthy global competitor.

Q: Several states, including Michigan, will begin receiving School Improvement Grants (SIG) from the Department of Education. What is your opinion of low achieving schools such as these? Do you believe that these grants will help improve achievement levels of the students within these schools? These programs aim at the supply of education.

That is my hope. I am a believer; I think that there is a higher likelihood that these grants will improve achievement levels for these schools. I think that this is an important investment; these are the schools that actually need the help; they are serving low achieving, disadvantaged students. Therefore, I think that in principle all these grants should improve achievement levels. The question is, will the resources be utilized appropriately in order to help the students? I'm hoping that this will be the case. I really believe that resources and money matter so long as they are used appropriately. This is a great objective and I hope that it will really have a positive effect on the low achieving schools.

Q: What are the questions that are going to dominate research on education in the near future?

I think one important topic is what constitutes an effective or high quality teacher, what are the characteristics of these kinds of teachers? So far, many of the studies on teacher effects have followed a macro perspective where they define specific teacher characteristics and examine whether they are related to student performance. We haven't done a very good job in actually measuring the characteristics that may be more important, for example, motivation of a teacher, the specific skills of the teacher, the interactions that go on in the classroom, and so forth. There is a lot of complexity that takes place in the classroom and so far we've been using very simple teacher characteristics to model student achievement and figure out whether there are teacher effects. I think the challenge would be to capture what really goes on in the classrooms and schools.

Perhaps a micro perspective about classroom instruction and practices or interactions would be helpful and informative and would complement the macro perspective. After all education researchers are interested in what really goes on inside what we call the black box, the classroom and the school. Another challenge that we would face is technology and the internet since we live in a digital era. Technology and the internet is part of our lives, and many of us spend a lot of time on the computer and online. Colleges and Universities offer online courses more frequently these days. This trend is incorporated in the schools as well. The question is, what is the best way to use technology and the internet for learning purposes? Also, what is the best way to train teachers to be more effective? For example, there is a lot of interest these days on what is the best way to offer professional development; is it face to face or is it online? Do we need to have a facilitator online or not? It will be interesting to see how we can use this technology and resources in order to maximize learning not only for students, but also for teachers. ■

Can China Win the Tug-of-War for Talents?

Amelie F. Constant, Bienvenue N. Tien and Jingzhou Meng

Historical Overview of China's Higher Education System

As one of the world's ancient civilizations, China's higher education goes as far back as the Eastern Zhou dynasty (771-221 B.C). But it was only during the Tang Dynasty (618-907 A.D.) that a whole range of higher education institutions were established, such as the famous Guo zixue (*School for the Sons of the Emperor*), Taixue (refers to *university*) and private Academies at the local level, such as the "four most prestigious academies"[1] (Statistical Information of Hunan, 2007). Most of these institutions used major classical texts of the Confucian school as their curriculum.

However, it was not until the late 19th century that higher education was extended to ordinary people. The first modern Chinese higher institution – Peiyang University in Tianjin (now Tianjin University) – was established in the Qing Dynasty (1871-1908). During the Republican Era of 1912-1949 and with the newly founded higher education system, western university models began to become popular and Chinese students were sent abroad to learn advanced technologies. By 1949, 205 universities have been founded in China (Brandenburg and Zhu, 2007). After the People's Republic of China was founded in 1949, the higher education system came to a transitional phase. By 1953, the number of comprehensive universities was reduced from 49 to 13, but the number of specialized colleges in applied subjects such as medicine and agriculture, which aimed to directly meet the needs of economic development, increased (Ouyang, 2004). During the Cultural Revolution of 1966-1976, the higher education system in China was severely hurt by political misleading; universities were closed between 1966 to 1970-71, and then reopened after 1970-1971 with the emphasis on political study rather than standard college curriculum (Zhang, Liu and Yung, 2006).

China Invests in Human Capital

Much needed reforms started in the late 1970s with Deng Xiaoping's opening-up policy. He regarded education as an important means of turning China to a global economic power. In 1977 China resumed the National College Entrance Examination so that more people had the opportunity to obtain higher education (Mullins, 2005); 270,000 out of 5.7 million candidates entered higher education institutions (Brandenburg and Zhu, 2007). The academic degree system was based on the UK and the U.S. models, with associate degrees offered by short-cycle colleges and bachelor's, master's and doctoral degrees granted by the standard institutions of higher education; a post-doctoral research system was also enacted. From then on, the Chinese modern higher education system entered a new phase.

The Chinese government encouraged students to study abroad by offering them various scholarships. The China Scholarship Council documents that there are different government-sponsored scholarships to study in Oceania, Europe, Asia and North America and that the academic levels range from undergraduate to advanced scholars level.

[1] It refers specifically to Yuelu Academy (founded in 976), the Bailudong Academy (founded in 940), the Suiyang Academy (founded in 1009), and the Songyang Academy (founded in 484).

According to the Regulation of State-sponsored Study Abroad Program (Trial Implementation) (China Scholarship Council, 2007), recipients have to sign an agreement with China Scholarship Council and make a cash deposit before going abroad. The cash deposit ranges from 10,000 RMB to 40,000 RMB[2] based on the academic level and destination, and can be withdrawn after the recipients return to China with the implementation of study. Recipients must return after receiving the degree abroad and work in China for at least two consecutive years; otherwise, they face a severe penalty. By the end of 1986, the Chinese government also relaxed the quota on self-supported and self-financed students studying overseas. They even pledged to "support students and scholars studying abroad, encourage them to return to China after their completion of studies and guarantee them the freedom of coming and going" the number of Chinese students going abroad expanded (Ministry of Education of the People's Republic of China (MoE, n.d.).

China Internationalizes its Education in the New Millennium

In the 1990s and especially after the return of Hong Kong to mainland China in 1997, higher education internationalized. Chinese and western universities started cooperating and a growing number of Chinese students went studying abroad. In 2003, the Chinese Government started offering scholarships to outstanding self-financed students (Yao, 2004). These scholarships are open to all Chinese citizens who show an excellent academic performance and respect the recipients' choice after graduation. However, they only target doctoral programs with $5,000 awards per individual, and shall not be awarded to the same recipient twice (NesoChina, 2008). By 2007, China had established educational relationships with 188 countries and regions all over the world (2008 China Education Yearbook). Specific agreements on mutual recognition of academic degrees have been signed between China and 32 countries and regions in the world. Moreover, by the end of 2007, 226 Confucius Institutes[3] have been founded in 66 countries and regions abroad; 81 in Europe and 56 in America.

Trends and Distributions of the "Brains Sent Abroad" and the "Return of the Brains"

Since the opening-up policy, the number of higher education institutions increased from 600 in 1978 to more than 2,000 in 2008, with an even more dramatic increase of student enrollment to 20 million in 2008 (China Statistical Yearbook, 2009). At the same time, the body of students and scholars studying abroad as well as the body of international students studying in China have witnessed rapid developments. We call these bodies "sending brains abroad" and "luring brains in" respectively.

Depending on the type of funding they have, Chinese students studying overseas are distinguished in those who are officially-sponsored by the government and those who are self-supported. The first category can be further divided into two groups: the state-sponsored students, sponsored and sent overseas by the Ministry of Education, and the organization-sponsored students, supported by provincial governments or companies (Yao, 2004). In the beginning of the opening-up reform era, most Chinese overseas students were officially-sponsored. This was largely due to their lack of financial capabilities to support their studying abroad. However, things changed with the loose policy in 1986 to reduce the limitation for self-supported students and China's fast-growing economy in the 21st century.

In 2000, from the 38,989 Chinese students going overseas the majority was self-supported (82.8%). Those receiving organizational support were second (10.0%) and the government supported ones were third (7.2%). In 2008, more students went abroad (179,800). As Figure 1 shows, with 2000 as the reference year, the overall number of Chinese students overseas has more than quadrupled. While the self-supported constituted 89.9% of the outgoing students in 2008, there was a dramatic shift among those receiving governmental support. They represented 6.2%, followed by the organizational supported (4.8%). The number of the self-supported students going abroad more than quintupled. Interestingly, the number of those receiving government supports has clearly quadrupled, growing at an even faster pace than the other groups. That substantiates the fact the Chinese government continues its sustaining effort to support Chinese students going abroad. Chinese overseas students and scholars have indeed spread to 108 countries and regions all over the world (MoE, n.d.). While their preferred destinations

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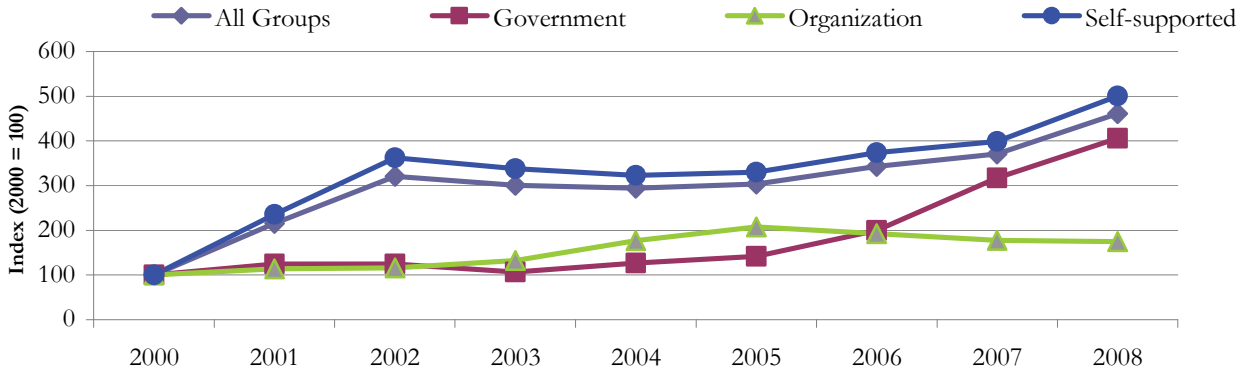
[2] As of August 01, 2007, the exchange rate between the US-dollar and the Chinese Yuan Renminbi was: 1 USD = 7.566000 CNY (see: http://www.imf.org/external/np/fin/data/rms_mth.aspx?SelectDate=2007-08-31&reportType=REP).

[3] These are centers for promoting the Chinese language and culture at various universities around the world.

vary through time, they mostly favor western countries especially English-speaking countries in North America and Europe.

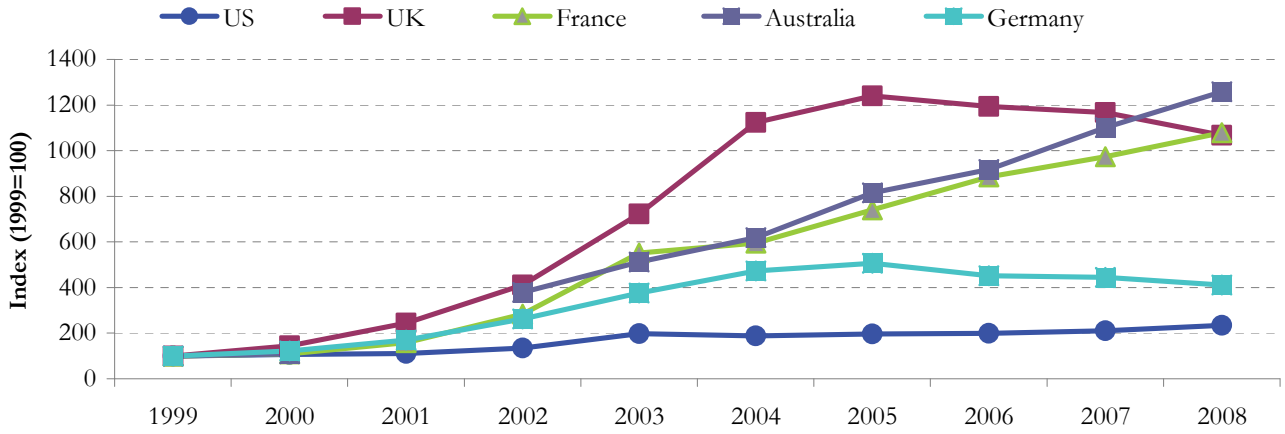
Figure 1: Evolution of Chinese Overseas (Post-)graduate Students by Type of Sponsorship



Note: Data for 2008 are from the Ministry of Education of the People's Republic of China.

Figure 2 depicts the flow of Chinese students by destination country over the period 1999-2008, assuming 1999 = 100. While the flow of students to the U.S. has remained almost constant, there is a rapid 10 to 12-fold increase of students going to the UK, France and Australia. The number of students going to Germany is similar to that in the U.S., albeit with a more dramatic increase after 2001. The number of Chinese students enrolled in German schools tripled in 2008 compared to the 2000 level. However, it is worth noting that the 2008 number is below the 2004 number of 25,000 Chinese students in Germany. As German policymakers debate about charging higher tuition fees to international students,[4] Chinese students clearly show that they prefer other countries.

Figure 2: Flows of Chinese Students at the Tertiary Level (ISCED 5 and 6) to Selected Host Countries: 1999-2008



Note: Data for Australia in 2001 were not available in the UNESCO database.
Source: UNESCO education online database; own presentation.

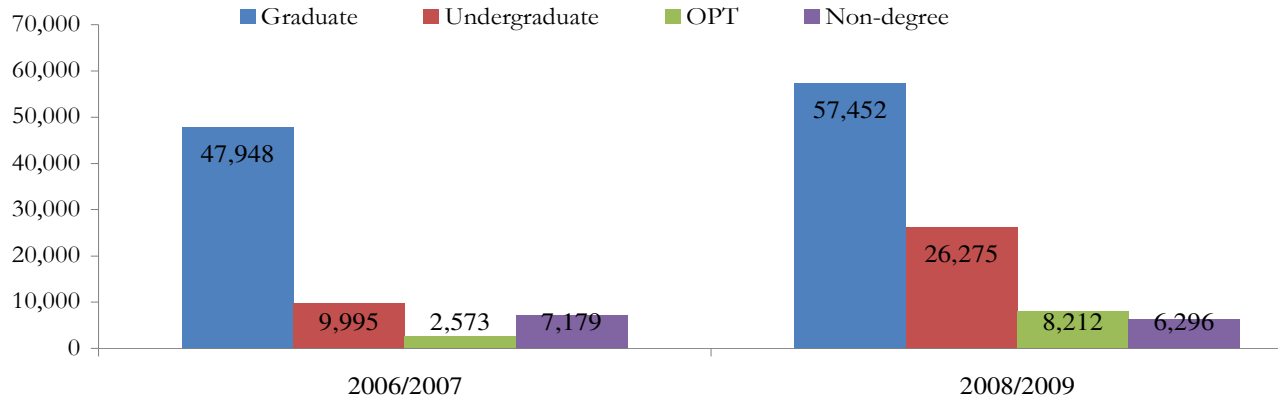
It is also interesting that the UK's dominant role as a destination country is declining after 2005. In absolute terms, the number of Chinese students studying in the UK dropped from 62,000 in 2000 to 48,000 in 2004 with a further decreased to 45,000 in 2008. Nonetheless, the UK is still a favorite destination because of its prestigious and high quality education. According to the British Council's *Vision 2020: Forecasting International Student Mobility at UK Perspective* (Böhm et al., 2003, p. 36), Chinese students will be UK's No. 1 main source for international students after 2010 with an annual growth rate of 11.4%. Figure 2 reveals Australia to be the big favorite with a steeply up-sloping curve since 2002. The trend of Chinese

[4] See: http://www.spiegel.de/unispiegel/studium/0,1518,680051,00.html.

students going to France follows an equally impressive upward slope. While in 2000 only 2,000 Chinese students went to France, 12,000 students went in 2004 and 21,000 students in 2008. Burgeoning agreements between French and Chinese institutions and universities to support the international exchange of students have certainly contributed to this trend.

What do Chinese students study abroad? Figure 3 illustrates the portions of graduates and undergraduates from mainland China who are enrolled in American schools; it also juxtaposes the 2006/2007 academic year to the 2008/2009 academic year. Clearly, Figure 3 shows much higher numbers of students in graduate education; this is in agreement with the perception that graduate education obtained in western universities is very prestigious in China. The number of graduate students is much larger than the number of undergraduates. However, while in 2006/2007 the 47,948 graduate students in the U.S. made up 70.83% of the entire Chinese student body, in 2008/2009 they composed only 58.48% of the entire Chinese student body in the U.S. While the number of graduate students increased by 17% within the academic year, the number of undergraduates and other students increased by a lot more.

Figure 3: Number of Chinese Students in the U.S. by Academic Levels



Note: OPT stands for Optional Practical Training.
Source: Institute of International Education.

For example, the portion of Chinese undergraduates rose from 14.7% in 2006/2007 (or 9,995 students) to 26.7% in 2008/2009 (or 26,275 students); an impressive jump of 62%. Therefore, while the total number of undergraduates is a lot smaller than the number of graduate students, it indicates a growing demand for American education at the undergraduate level. Equally impressive is the number of Chinese students with Optional Practical Training (OPT) status.[5] The number of student graduates staying to work in the U.S. for a year quadrupled within an academic year, going from 2,573 in 2006/2007 to 8,212 in 2008/2009. This is yet, another interesting trend, whereby Chinese students graduating from U.S. colleges want to stay in the U.S. It is said that whoever wins the battle over talents will be the victor in the 21st century. The numbers in Figure 3 allude to some kind of brain drain for China.

Should China Fear a Brain Drain?

The Chinese government is well aware of the numbers of Chinese students and scholars abroad and is making concerted efforts to attract outstanding students and scholars back to China. As Table 1 documents, there are various programs conducted and sponsored by the Ministry of Education that aim at supporting Chinese brainy expatriates to return to China and contribute to the country's economic reform as well as to the country's human capital. These programs have a wide range, covering young students and middle-aged scholars alike, and short-term visits or permanent stays. The most famous among them is the *Chunhui* Program (literally, Spring Bud), which, by the end of 2003, had funded more than 8,000 individuals and 90 groups of scholars and researchers who would serve the country on a short-term visit (MoE, n.d.).

[5] OPT status allows international students who graduate from U.S. universities to stay in the U.S. and work for a maximum of twelve months after their graduation.

Table 1: Main Official Programs to Fund Chinese Returnees

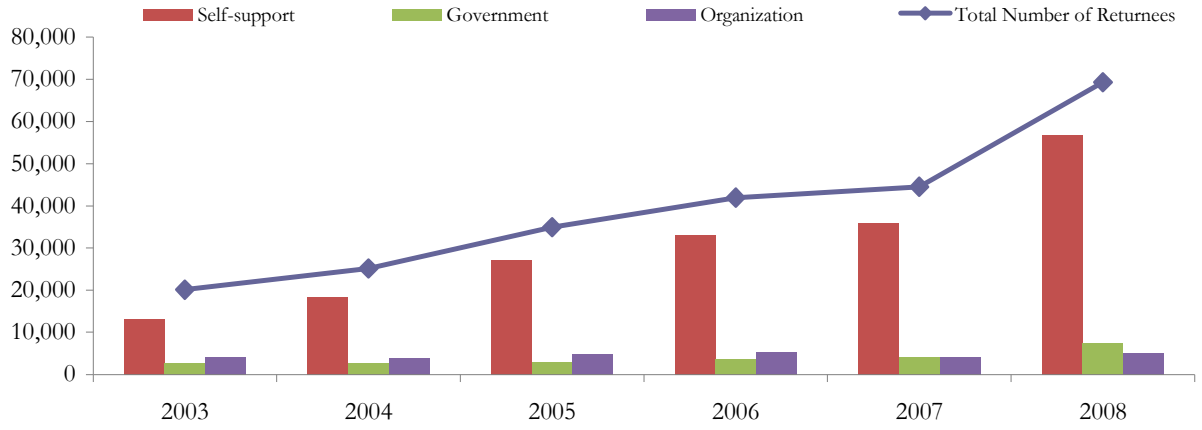
Program Name	Starting Year	Targeted Group	Incentives
The Fund for Returnees to Launch S&T Researches	1990	Returnees with doctoral degree who work in education and research institutes*	Provide funds for purchasing equipments and books, doing on-site researches, and attending conferences
Program for Training Talents toward the 21st Century	1993	Outstanding young teachers returned from overseas	Provide 200,000 to 300,000 RMB annually for doing researches in major topics
The *Chunhui* Program (literally, Spring Bud)	1996	Returnees with doctoral degree and with outstanding achievements in their fields	Cover travelling expenditures to attend conferences and academic exchange programs
*Changjiang*** Scholar Incentive Program	1998	Young and middle-aged leading Chinese scholars who have studying abroad experiences and are invited by HEIS as visiting professors	The program provides 100,000 RMB annual incentives, and the HEIs offer the salary, insurance and other social welfares during the visit
Program of Academic Short-return for Scholars and Research Overseas	2001	Outstanding Chinese scholars who come back to China in short breaks to give lectures or do research in 28 key Chinese HEIs***	Ministry of Education covers the travelling expenditures, and HEIs pay salary, provide accommodation and health insurance

Note: * For detailed information, refer to: http://www.moe.gov.cn/edoas/website18/level3.jsp?tablename=1263260667176 395&infoid=1263277716024458 (in Chinese).
** It is also called as "Yangtze River," literally translated as "The Long River." It is the longest river in China and Asia, and the third longest one in the world.
*** The list of 28 key Chinese Higher Education Institutes (HEI) is available at: http://www.moe.gov.cn /edoas/ website18/ level3.jsp?tablename=1305&infoid=12200 (in Chinese).
Source: Ministry of Education of the People's Republic of China; under: http:// www.moe.edu.cn/ english/international_2.htm.

These great efforts along with the "China opportunity theory," which results from China's continuous double-digits GDP growth and its recent growing global influence, more and more Chinese students overseas choose to live their "American dream" in China. Figure 4 shows the trend of returnees over time by sponsorship status. From 2003 to 2008 the total number of returnees increased by almost 50,000. The number of self-financed students, in particular, grew by 44,000 within these six years. According to statistics released by the Ministry of Education, by the end of 2008, the number of returnees went up to 389,100. Returned students and scholars play a leading role in fostering new high-tech start-ups and upgrading educational institutions (Naughton, 2007). The contributions of these returnees, often called *haiguipai*, are observed in almost all relevant societal domains. They are, for instance, present in leadership positions in educational institutions, research centers, investment banks, insurance agencies, state or private enterprises, law firms, etc.

Some are even well integrated into the Chinese political arena (Li, 2006). In his study, Li (2006) also looks at the distribution of overseas educational attainment of Chinese leaders and finds that almost 49.2% were visiting scholars, 32.8% Ph.D. graduates, 3.3% Post-Doctoral fellows, 9.9% MA/MS and 1.6% were respectively JD/MD, MBA or BA/BS. Looking at their respective fields of responsibility, the author finds that roughly 79% of these 'returnees' leaders are in charge of science and technology, education, industrial development, finance, foreign trade, and foreign affairs, 6.6% in the political scene (organization or propaganda matters) and 1.6% in charge of rural development. Classifying these returnees according to their (high-ranking leader) length of study time, the author finds that 73.8% spent less than three years abroad, and 11.4% stayed for more than six years; we should note that most of these years were spent in intensive study for a doctorate.

Figure 4: Number of Overseas Students back to China by Type of Sponsorship, 2003-2008



Source: Ministry of Education of the People's Republic of China; Own presentation.

Chinese higher educational institutes have made great efforts to attract returnees, with the objective to quickly enter the list of the world's best universities. For example, Tsinghua University and Peking University, the two most prestigious universities in China, allocated 20% of their annual budget to attract talents with preference given to those from abroad (Bail and Shen 2008).

Acknowledging a looming brain drain, Premier Wen Jiabao (2008) said that the *"future of China's sci-ence and technology depends fundamentally on how we attract, train, and use young scientific talents today. Thus, at the core of our science and technology policy is attracting a diverse range of talents, especially young people, into science and providing them with an environment that brings out the best of their creative idea"* (p. 649).

"Luring Brains In:" International Students and Scholars Going to China

The opening-up reform of the late 1970s was not meant to be a 'one-way-street.' Instead, it was also meant to be a turning point for Chinese universities and other higher education institutions to attract international students from abroad to receive higher education in China. For instance, at the signing ceremony on the scientific and cultural exchanges between the U.S. and China in 1978, President Jimmy Carter following Premier Deng Xiaoping's remark said: *"Our aim is to make this kind of exchange between our countries no longer the exception but the norm; no longer a matter of headlines and the historians, but a routine part of the everyday life of both Chinese and American people"* (as cited in Li[6], 2010). More than thirty years later, China's booming economy and its relatively stable political and social environment attract more and more international students. Official data from the Chinese Ministry of Education reveal that, the overall number of international students in China has been growing steadily from about 50,000 in 2000 to almost 200,000 in 2007. According to the Ministry of Education, 195,503 international students from 188 countries and regions went to China to study in 544 higher education and research institutes. Among them, 141,689 or 72.5% came from Asia, especially from South Korea and Japan. Europeans we placed second with 26,339 or 13.5%. The majority of Europeans is from the UK, France and Germany. Americans we next in the ranking (19,673 or 10.1%), followed by Africans (5,915 or 3%) and students from Oceania (1,887 or 1%).

Figure 5 demonstrates a more than four-fold increase of European and African students in China over the last decade (with 2000 as the reference year). The same pattern is observed in the Asian and American groups; their number has more than tripled. The number of students from Oceania also clearly doubled over the same time period. Overall, Figure 5 shows a considerable increase of foreign students in China. A conspicuous dip occurred with the SARS pandemic in 2003. The flow of American students going to China went down by 9 points compared to the 2000 level.

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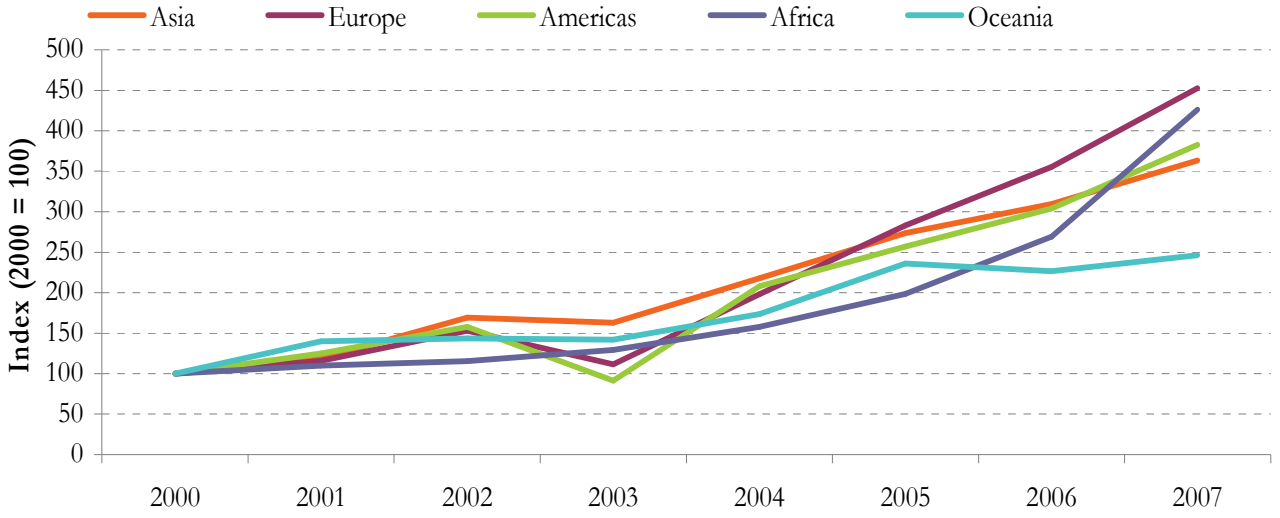
[6] Cheng Li (2010)'s comment during a panel discussion on: Chinese foreign-educated returnees: Shaping China's future. The Brookings Institution. Washington, DC.

Figure 5: Evolution of International Students in China by Place of Origin: 2000-2007



*Source:*China Education Yearbook, 2001-2008 Edition; own calculation.

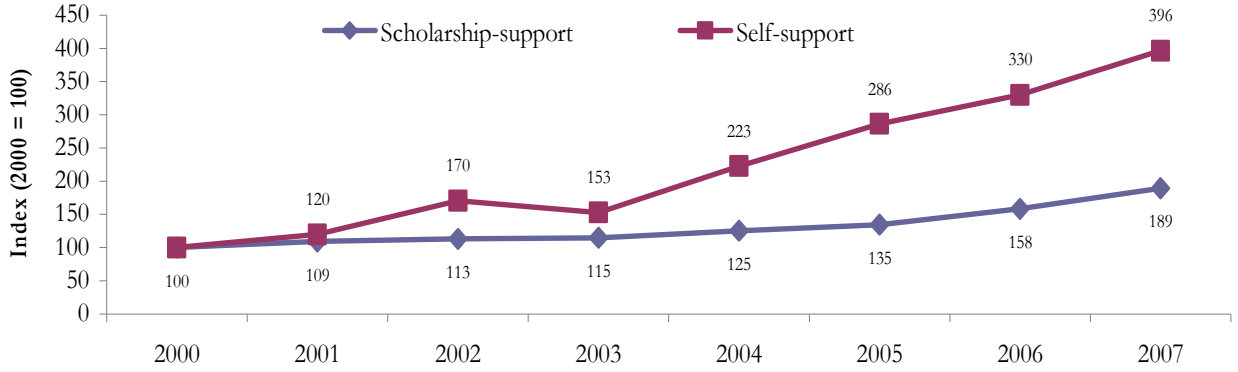
Among the international students, the self-financed students are gradually playing a dominant role. As demonstrated in Figure 6, while in 2000 there were 47,000 self-financed foreign students in China, by 2007 there were 185,000. Note that self-financed or self-supported basically means that these students do not receive support from the Chinese government or any other Chinese organizations; it includes students who have a scholarship from their home country government or other foundations and organizations. Figure 6 shows a growing demand for Chinese culture, language and know how.

Most foreign students in China enroll in non-degree programs, such as studying Chinese language and culture or absorbing short-term programs (less than six months). In 2007, there were 127,290 non-degree students; constituting therefore 65.1% of the entire international student population in China. Second, the Undergraduates represent for the same year 29.3%. The numbers of Master's (7,628) and Ph.D. (3,218) students are relatively small compared to the other student groups. They represent 3.9% and 1.6%, respectively. Nonetheless, as shown in Figure 7, the number of international students following academic fields whether they are at the graduate level (Master and Ph.D.) or just at non-degree programs has more than tripled over the past eight years (with 2000 as the reference year). The undergraduates, in particular, almost sextupled over the same reference period. This indicates that the world is expressing a serious interest in China.

According to *2008 China Education Yearbook*, liberal arts, including Chinese language and culture studies, is the most favorite discipline for international students, followed by studies in Chinese medicine and Economics. We conjecture that the relatively high number of international students majoring in medicine in China might be due to the reputed Chinese traditional medicine, such as acupuncture practices. One question that concerns policymakers is how to improve the quality of international education in China and attract more international students.

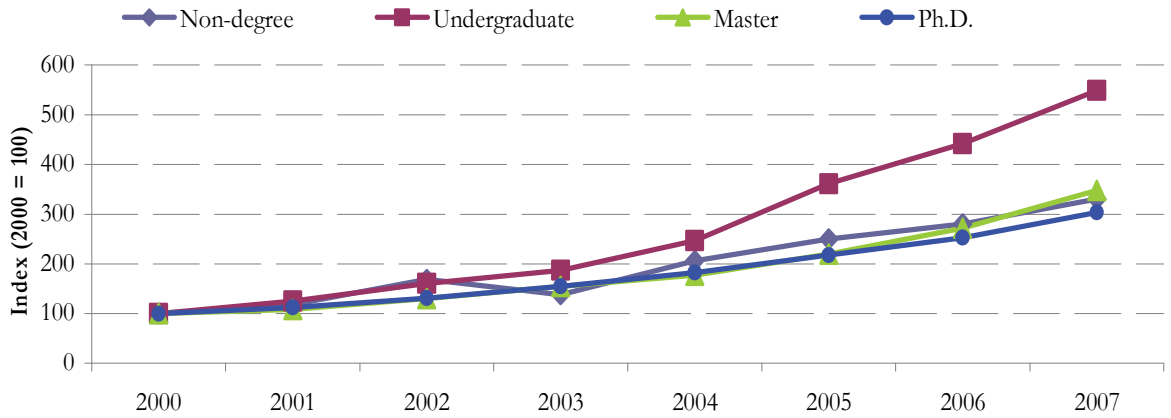
In the Action Plan of 2005, the Ministry of Education clearly stated the aim to *"adopt a strategy of creating 'renowned brand names' for selected institutions and academic fields and adhere to the principles of 'expanding the scale, raising the level, ensuring the quality, and managing according to established norms and standards'"* (Ministry of Education Action Plan, 2005, p.29).

Figure 6: Flows of International Students to China by Type of Sponsorship: 2000-2007



Source: China Education Yearbook, 2001-2008 Edition; own presentation.

Figure 7: Flows of International Students to China by Academic Levels: 2000-2007



Source: China Education Yearbook, 2001-2008 Edition; own calculation.

Conclusion

The opening-up reform of 1978 was the landmark for the Chinese modern higher education system. Since then, three important trends are observed: (i) The number of students enrolled in Chinese higher education institutions increase dramatically; (ii) More and more Chinese students begin seeking higher education abroad; and (iii) International students start showing interest in obtaining education in China. At the same time, an upward trend of Chinese brainy and skilled expatriates is also observed. According to statistics released by the Ministry of Education, the number of Chinese overseas students went up to reach about 1.4 million in total from 1978 to 2008. Among them 389,100 students went back to China, still more than 1 million students and scholars stayed abroad to study or have received permanent residency abroad.

Some observers think that China faces a brain drain problem. While Chinese officials dismiss it, they are aware of a looming brain drain and follow a steady course to counteract it. At the Chinese Embassy in Germany, Dr. Liu Jinghui, the counselor for Education, said that Chinese overseas students are going to play an important role in fostering global economic cooperation and international networks of research and innovation even if they do not return (Brandenburg and Zhu, 2007). Chinese governments have made great efforts to attract students to return to China by creating favorable environment and conditions for them to flourish; for example, to have start-up enteprises in China. However, experts in education point out that the essence to attracting overseas students back is "how to further provide an equitable environment and extensive room for further development" (Gao, 2003, p.87). It is said that whoever wins the battle over talents will be the victor of the 21st century. China has undoubtedly emerged as one of the largest economies in the world and has shown considerable global power. The begging question is whether China is complacent with being only the world's cheap manufacturer. If not, can China turn its labor-oriented economy into a knowledge-based economy and win the global tug-of-war for talents?

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World's Top 10 Countries in Education

How can one gauge knowledge? Human capital, which mostly refers to acquired knowledge either via standard education and/or via training on-the-job or elsewhere, has a big intangible part. In labor economics, human capital is important and highly compensated because it can render a worker productive. The marginal product of labor is what employers care about and what they are willing to hire. Following Jacob Mincer and Gary Becker, human capital theory attributes earnings differentials to worker differences in individual skill levels. Earnings profiles over time are steeper for the more educated and more able workers.

Students enrolled in universities are an important indicator of a country's human capital; it reflects the availability and spread of higher education and the extent to which higher education is valued in a nation. In Table 1 we provide the ranking of the top 10 countries with the most students going to universities in 2008, as accounted in the UNESCO data center. China, with a total enrollment of about 27 million, is undoubtedly the No. 1 country. This is, of course, due to its large population but also to the policy of expanding college enrollment since 1999. The U.S., with the most advanced higher education in the world, ranks first among developed countries with an enrollment of more than 18 million. The Russian Federation, follows in the third place with a total enrollment about 9.5 million; it also has the most college students in Europe. Brazil and Indonesia rank fourth and fifth respectively, followed closely by Japan, Iran, South Korea and Ukraine with a total enrollment around 3 million. To everyone's surprise, Iran, a traditional Islamic country, made the top 10 list, in the 7th place. It is impressive that apparently Iran is recognizing the value of higher education and provides free tuition and living expenses to students attending public universities. No. 10 is the Philippines with the total enrollment of about 2.6 million.

Individuals' knowledge and skills gained through education lay an important foundation for their future life and have an impact on the prosperity of a country. In Table 2 we provide the ranking of the top 10 countries whose students rank highest on each domain of the OECD Program for International Student Assessment (PISA). PISA is a survey that measures how well are young adults prepared to meet real-life challenges by using their knowledge and skills. It especially targets youths at age 15, which is approaching the end of compulsory schooling. It first started in 2000 and was repeated every three years. In 2000, the primary focus of PISA was on the domain of reading literacy, in 2003 on mathematics and in 2006 on science.

Looking at the 2000 results on reading, we find Finland ranking on the top. Canada is second and the U.S. is not even on the top 10 list. The Mathematics results in 2003 show Hong Kong-China first and Finland second. The U.S. is not on the top 10 list. Lastly, the 2006 results on science show Finland on the top and Hong Kong-China second. The U.S. is again, not listed as one of the top 10 in 2006.

Figure 1 shows the ranking of the number of hours spent in classrooms for students aged 7 to 14 in 2007. Can one say that students who spend more hours in school will do better in exams? According to Table 2 and Figure 1, it is possible that students are able to do well in exams without spending too much time at school. This is the minimax principle. Finland is a typical example. It performed the best in each PISA domain in every year, with a No. 1 ranking in both reading and science scale and a No. 2 in mathematics. However, it ranked second on the list of fewest hours students spent at school. Moreover, its dropout rate in the future higher education was the fifth lowest among countries. South Korea and Japan are on the top 10 list of highest scores in each PISA testing domain, but the number of hours students spent at school is fewer than in countries with lower PISA scores. It seems that students in those countries are more efficient.

The U.S. and Germany, the two largest developed economies in the world and famous for their advanced higher education and training, were not on the top 10 list of the highest PISA scores. Note that students in Germany also spend fewer hours at school. The No. 1 country with the fewest instruction hours at school is Hungary, while students in Chile have the most study time at school.

Table 1: "Top 10" Countries with the Most Students Going to Universities in 2008

Rank	Country	Enrolment in all Programs; Tertiary Education
1	China	26,691,696
2	The U.S.	18,248,124
3	The Russian Federation	9,446,408
4	Brazil	5,958,135
5	Indonesia	4,419,577
6	Japan	3,938,632
7	Iran, Islamic Republic of	3,391,852
8	Republic of Korea	3,204,310
9	Ukraine	2,847,713
10	The Philippines	2,651,466

Source: UNESCO Institute for Statistics. Table 15. http://stats.uis.unesco.org/unesco/TableViewer/document.aspx? ReportId=143&IF_Language=eng; own presentation.

Table 2: "Top 10" Countries and Regions Ranking in PISA

Rank	(PISA 2000) Reading		(PISA 2003) Mathematics		(PISA 2006) Science	
	Country	Mean Score	Country	Mean Score	Country	Mean Score
1	Finland	546	Hong Kong-China	550	Finland	563
2	Canada	534	Finland	544	Hong Kong-China	542
3	New Zealand	529	South Korea	542	Canada	534
4	Australia	528	The Netherlands	538	Chinese Taipei	532
5	Ireland	527	Liechtenstein	536	Estonia	531
6	South Korea	525	Japan	534	Japan	531
7	The UK	523	Canada	532	New Zealand	530
8	Japan	522	Belgium	529	Australia	527
9	Sweden	516	Macao-China	527	The Netherlands	525
10	Iceland	507	Switzerland	527	South Korea	522

Sources: Knowledge and Skills for Life: First Results from PISA 2000, OECD. 2000. Retrieved on August 4, 2010 from: http://www.pisa.oecd.org/document/46/0,3343,en_32252351_32236159_33688686_1_1_1_1,00.html.
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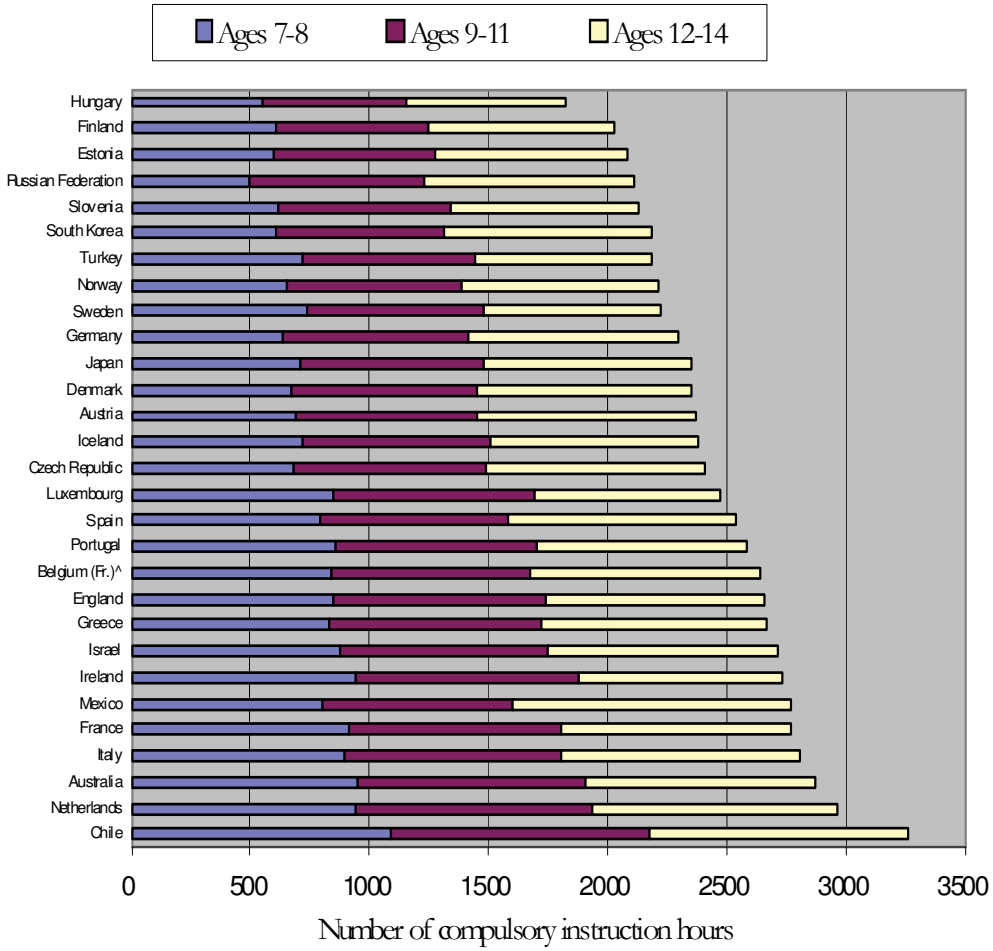
Table 3 shows the top 10 countries with the lowest school dropout rates in 2006; the data are accounted from Eurostat and U.S. Department of Education respectively. The U.S. ranks sixth on the list of lowest school dropout rate with 9.3%, but it is still 4.1% higher than the No. 1 country, Slovenia. Germany has an even higher dropout rate of students 18 to 24 years old that is about 13.8%. Based on findings from previous tables, it seems that students' performance in compulsory school time have an impact on their future performance in higher education. But it is interesting that Finland, a country that ranks high in the PISA scores, has a rather high drop out rate. ■

Table 3: "Top 10" Countries with the Lowest Dropout Rate (18 to 24 Years Old)

Rank	Country	Dropout Rate (2006)
1	Slovenia	5.2%
2	The Czech Republic	5.5%
3	Poland	5.6%
4	Slovakia	6.4%
5	Finland	8.3%
6	The U.S.*	9.3%
7	Austria	9.6%
8	Lithuania	10.3%
9	Denmark	10.9%
10	Sweden	12.0%

Note: * The dropout rate for the United States pertains to those aged between 16 and 24.
Source: Eurostat. http://www.imenet.eu/proyecto/Ime.net%20Presentation%203rd%20Meeting%20Final%20Study%20.ppt U.S. Department of Education, National Center for Education Statistics. 2010. http://nces.ed.gov/fastfacts/display.asp?id=16; own presentation.

Figure 1: Average Number of Hours per Year of Total Compulsory Instruction Time between the Ages of 7 and 14 in Selected Countries, 2007



Note: ^ Belgium (Fr.) refers to the French Community of Belgium. Countries are ranked in ascending order of total number of compulsory instruction hours.
Source: Education at a Glance 2009: OECD Indicators. 2009. Table D1.1. Retrieved on August 5, 2010 from: http://www.oecd.org/document /24/0,3343,en_2649_39263238_43586328_1_1_1_37455,00.html.; own presentation.

Euphoric Economic Indicators at Last!

The recent OECD Main Economic Indicators' release reveals an optimistic outlook in most of its member states and also in non-member states. The indicators for June 2010 point to a possible peak in extension. The Composite Leading Indicator (CLI) of the OECD area decreased by 0.1 point in June 2010. According to OECD, growth cycle phases of CLIs are defined as follows: expansion (increase above 100), downturn (decrease above 100), slow down (decrease below 100), and recovery (increase below 100). As portrayed in Table 1, the CLIs for France and China point to below trend growth in coming months, while the CLIs for the U.K. and the U.S. point respectively to a peak and possible peak. Germany and Japan, however, point to further expansion in the near future.

Table 1: OECD's Composite Leading Indicators; Selected Regions and Countries (June 2010)

	Ratio to trend, amplitude adjusted (long term average = 100)					**Change from previous month** (points)					**Yr to Yr change** (points)	**Growth cycle outlook**
	2010					**2010**					**Latest month**	
	Feb	**Mar**	**Apr**	**May**	**Jun**	**Feb**	**Mar**	**Apr**	**May**	**Jun**		
OECD Area	102.8	103.2	103.4	103.5	103.4	0.6	0.4	0.2	0.1	-0.1	8.5	Possible peak
Euro Area	103.6	104.0	104.2	104.3	104.4	0.4	0.4	0.2	0.1	-0.1	8.3	Expansion
Major Asia*	102.2	102.8	102.6	102.4	102.2	0.1	-0.1	-0.2	-0.2	-0.2	3.3	Downturn
France	104.7	104.4	103.9	103.3	102.7	-0.1	-0.3	-0.5	-0.6	-0.6	3.8	Downturn
Japan	102.1	102.6	102.9	103.0	103.1	0.7	0.5	0.3	0.1	0.1	10.0	Expansion
Germany	103.6	104.6	105.5	106.2	106.8	1.0	1.0	0.9	0.7	0.6	14.1	Expansion
The U.K.	104.4	104.4	104.2	103.9	103.5	0.2	0.0	-0.1	-0.3	-0.4	6.5	Peak
The U.S.	102.2	102.7	103.1	103.1	103.0	0.8	0.6	0.3	0.1	-0.1	9.7	Possible Peak
China	103.7	103.4	103.1	102.7	102.3	-0.2	-0.3	-0.3	-0.4	-0.4	1.2	Downturn

Note: * Major Asia 5: China, India, Indonesia, Japan and South Korea
Source: Adapted from OECD Composite Leading Indicators as of August 6, 2010.

At the time when many governments are debating whether another stimulus package is needed to strengthen economic recovery it is noteworthy looking at some aggregate variables. As depicted in Figure 1, the recovery has so far largely been supported by export activities. Government as well as private consumption remains weak compared with exports in the U.S. and Germany. From 2009Q4 to 2010Q1, export activities rose to 2.7% in the U.S. and 2.6% in Germany. Across regions, a positive prospect for international commerce is expected. As shown in Figure 2, in 2009, the world trade volume of goods and services decreased by 10.7%. The negative trend was observed everywhere. In the Euro area as well as in other advanced economies trade volume decreased by about 12%, in Sub-Saharan Africa by -7.5% and in the newly industrialized Asian economies by -6.9%. For this year, according to the IMF World Economic Outlook, trade volume in Sub-Saharan Africa is expected to grow by 9.5%, a remarkably larger rate than the total world trade growth (7.0%). Positive trade volume growth is also expected in the Euro zone area (3.0%), as well in the advanced economies (6.0%).

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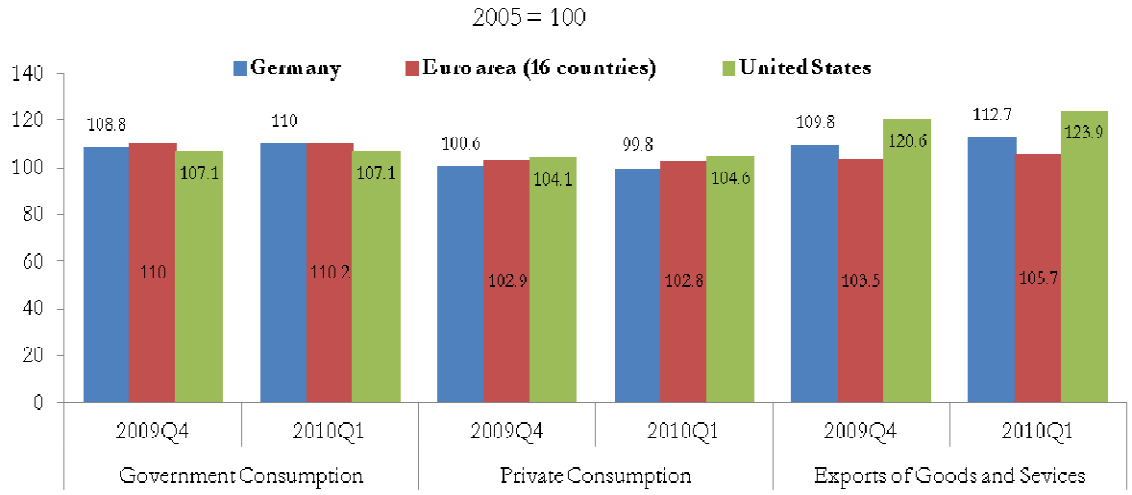
[7] OECD Composite Leading Indicators, News Release, Paris, 6 August 2010.
[8] The OECD system of CLIs is designed to track changes in "growth cycles", i.e. deviations of economic activity from its long-term trend, and so, predict cyclical turning points (peaks and troughs) in aggregate economic activity (OECD, Ex-planatory Notes: Metadata. Under: http://www.oecd.org/dataoecd/3/10/43469144.pdf).

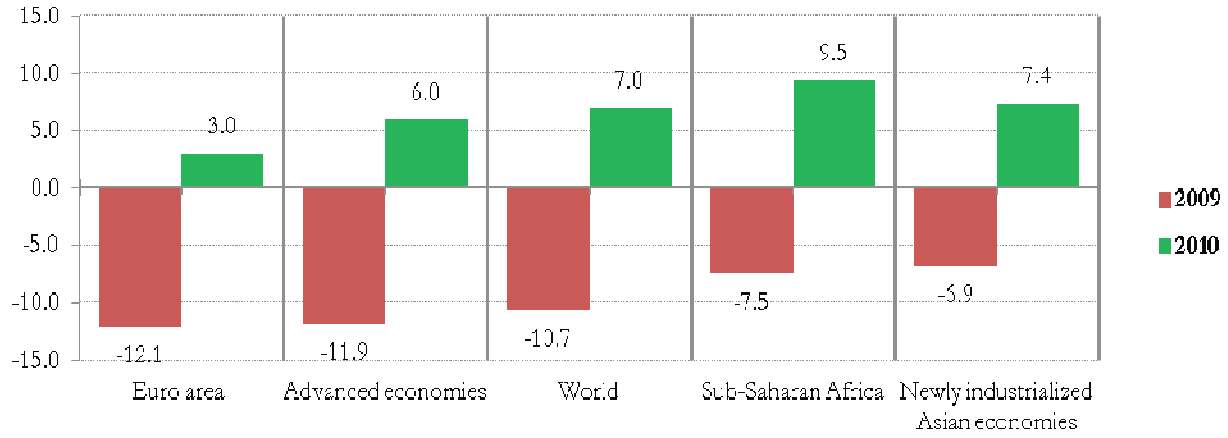
Overall, there are many underlying reasons for the positive outlook and projections. As indicated in the IMF's Economic Outlook[9], there were encouraging signs of growth in private demand, which translates into improvement in consumer confidence. Furthermore, according to the same report, global recovery will continue despite the recent financial turbulence in the Euro area. So far, there is little evidence of negative spillovers to real activities at the global level due to financial stress. ■

Figure 1: Volume of Government, Private Consumption and Exports for Selected Countries



Source: OECD Main Economic Indicators Database.

Figure 2: Outlook Projections of Trade Volume of Goods and Services for Selected Regions



Source: International Monetary Fund, World Economic Outlook Database, April 2010; own calculation.

[9] See: World Economic Outlook: Update of the Key WEO projections, as of July 7, 2010.

DIWDC's Busy Summer Training Half a Dozen Bright Interns

DIWDC had a busy, but fun and productive summer this year with six new students interning with the Institute. These graduate and undergraduate students from different universities and countries and with different experiences brought a refreshing tone to DIWDC. They were: Ms. Carolyn Ferguson (Franklin & Marshall), Mr. Erdal Kaplan (McGill University and Graduate Institute of International Studies- Geneva Switzerland), Ms. Jingzhou Meng (George Washington University), Mr. Paul M. Butler IV (Loyola University), Ms. Aga Postepska (Georgetown University) and Ms. Phanwin Yo-kying (Randolph College) [pictured above with DIWDC Director Amelie Constant]. The Institute is happy to have hosted and trained these bright students from May to August.

Under the guidance of DIWDC Director Amelie Constant, the students assisted in conducting research and formulating economic policy as well as editing and translating. They were involved in several projects, such as the U.S.'s trade deficit and international trade with South Korea; China's human capital, brain drain and brain magnetism; the green economy in the U.S., Europe and Thailand; transatlantic comparisons of education systems; and various other timely economic and political issues. The students contributed to DIWDC's scientific and policy outlets as well as to the Institute's newsletter and website. They also helped extensively in planning and organizing various DIWDC conferences, presentations and other events and supporting its public relations and administration. While at DIWDC,

the students were encouraged to attend other conferences and meetings by other think tanks in DC, representing the Institute, networking and absorbing knowledge from the nation's capital.

DIWDC is an advantageous place for student internships both at the undergraduate and graduate level. With its small size, DIWDC offers the opportunity to experience first hand the execution of real economics and research along with the economic and political networking of Washington, DC. DIWDC's program coordination team strives to provide every intern with the ideal internship experience tailored to their education levels and interests as well as teach them new skill sets not learned in the classroom. "My internship at DIWDC made me put into practice what I have learned at George Washington University's Graduate School and enabled me to become more knowledgeable in the field of international relations" said intern Jingzhou Meng. "Now, I know exactly what I will do for my thesis" added intern Phanwin Yokying who wants to pursue a research career in the field of migration. ■

DIWDC is currently accepting applications for the fall and spring semesters in the field of economics, public relations and administration. If you are interested in interning at DIWDC, please contact DIWDC for more information at: info@diwdc.org or call 202.429.2904

Ongoing Visiting Fellowships at DIWDC

DIWDC is an ideal place for up and coming junior Ph.D.s and post-docs. It is also a great place for more seasoned and veteran scientists. Located in the heart of Washington, DC near the White House, the World Bank, the International Monetary Fund, George Washington University and various high-profile think tanks, the Institute offers tremendous opportunities to researchers who are also interested in policy studies and the latest makings of policy. Washington, DC is home to the seat of all three branches of the United States federal government, 22 colleges and universities, 172 foreign embassies and innumerable think tanks, lobbying groups, NGOs and professional associations. DIWDC's program coordination team strives to provide every visitor with the resources needed to pursue their field of research studies. The DIWDC fellowship program enables academics, scientists, journalists and others, who come to the district to enjoy DIWDC's prime resources and to take advantage of the Institute's close ties to policymakers, embassies, fellow research institutions and universities. Visitors can participate in the Institute's conferences and events and hobnob with K Street executives, all while pursing a project in one of DIWDC's research areas or a general socioeconomic topic of interest to DIWDC.

Recent Visiting Fellows at DIWDC

Dr. Jens Schmidt-Ehmcke (pictured right) is currently visiting DIWDC since June 2010. During his six-month residence at the Institute, he will work on a new project measuring the intergenerational mobility of education among immigrants as well as the role of migrants in entrepreneurship and innovation, using a new dataset on immigrants in the U.S.. He received his doctorate in 2009 from the University Viadrina, Frankfurt (Oder) with a specialization in the economics of innovation and firm behavior. He is a researcher at DIW Berlin and the Department of Innovation, Manufacturing and Service, and a member of the Economic Advisors to the President of DIW Berlin. He is one of the developers of the Innovation Indicator Germany, a comparative indicator system that determines the innovation capability of 17 countries including the U.S. and Germany. His research and interests extend to education and migration.

Ms. Simone Schueller (pictured left) was a visiting fellow at DIWDC in July. She is a Ph.D. candidate at the Free University of Berlin, working on her dissertation. She specializes in the economics of migration with a focus on the education of immigrant children. Ms. Schueller presented her research paper on the "Ethnic Identity and Educational Progression of Second Generation Immigrants in Germany" at DIWDC's *Economics Seminar Series*. During her visit at the Institute, she collaborated with Dr. Amelie F. Constant in a new project on the role of social networks in migration, an empirical study based on the German Socio-Economic Panel.

DIWDC is currently accepting applications for visiting fellows for 2011. Applicants must have an advanced degree and be working on an approved project. They should set their own timeline for their visit and once accepted, may stay from one month up to one year, with the opportunity of seeking renewal after one year. Fellows will be responsible for all their own costs, including office space, and travel. Fellows will also be responsible for obtaining a visa to come to the U.S. ■

If you are interested in visiting DIWDC, please contact DIWDC for more information. Please send a CV, cover letter, a 2-page project proposal, 2-3 references and a suggested timeline to info@diwdc.org.

DIWDC's Economics Seminar Series is Underway!

DIWDC is proud to commence its Economics Seminar Series. As an economic think tank dedicated to teaching and research, DIWDC holds several seminars a year in which advanced graduate students along with established economists and other scientists and specialists are given the opportunity to present their original research to a select audience. Intermittent seminars cover a wide range of topics in economics and public policy and last for an hour and a half, allowing ample time for Q&A. Active participation is required and a dialectical method of debating encouraged. DIWDC is dedicated to providing a beneficial learning environment that fosters the engagement of young as well as more experienced individuals in the field of economics and which can stimulate thinking and generate new ideas.

Visiting fellow Ms. Simone Schueller presented her research on *Ethnic Identity and Educational Progression of Second Generation Immigrants in Germany.* Economists from the Institute, DIW Berlin, as well as from the World Bank and Georgetown University attended Ms. Schueller's presentation.

Ms. Agnieszka Postepska (pictured above) is DIWDC's most recent seminar presenter. She presented her findings in front of a select crowd of economists from the Institute, Georgetown University and the World Bank on *Immigrant Remitters in the US: Sex and Ethnic Differences* in August. Ms. Postepska is a graduate student in Economics at Georgetown University and a research assistant at DIWDC.

Upcoming Economics Seminar Schedule:

- **"Over-employment and Health: A Panel Analysis of Germany and the UK"** by Mr. Steffen Otterbach (University of Hohenheim)

  Wednesday, September 22, 2010
  12:00 pm – 1:30 pm

- **"The Innovation Index of DIW Berlin and its Policy Relevance"** by Dr. Jens Schmidt Ehmcke (DIW Berlin)

  Wednesday, September 29, 2010
  12:00 pm – 1:30 pm

- **"African Leaders: Their Education Abroad and FDI Flows"** by Dr. Amelie F. Constant and Mr. Bienvenue N. Tien (DIWDC)

  Wednesday, October 13, 2010
  12:00 pm – 1:30 pm

- **"TBA:"** by Dr. Swantje Renfordt, (Free University of Berlin)

  Wednesday, November 10, 2010
  12:00 pm – 1:30 pm

Want to learn more information about DIWDC's Economics Seminar Schedule? Please visit our website at www.diwdc.org and click on "DIWDC News" to find out more!

DIWDC Event Participation

- "Addressing New Economic Challenges," NPR interview with Dr. Klaus F. Zimmermann, DIWDC, Washington, DC, *May,* 2010
- "Addressing Kenya's Top Challenges: Justice and Reform," at the Center for Strategic and International Studies, Washington, DC, *May 12*, 2010
- "The Dragon's Gift: The Real Story of China in Africa," IFPRI Policy Seminar Survey, International Food Policy Research Institute, Washington, DC, *May 17*, 2010
- "T. Paul Schultz Symposium and Festschrift," The Center for Global Development, Washington, DC, *May 21st—22nd* 2010
- "Reform of the Immigration Removal Adjudication System," Migration Policy Institute, Washington, DC, *May 25*, 2010
- "Conference on Immigration Law," Migration Policy Institute, Washington, DC, *May 26*, 2010
- "Immigrants: Contributors to the Economy or Competitors for American Jobs?" Migration Policy Institute, Washington, DC, *June 7*, 2010
- "Discussion on Possible Solutions for Refugees and IDPs," Migration Policy Institute, Washington, DC, *June 9*, 2010
- "ONE's 2010 DATA Report: Building on Progress Made and Lessons Learned since Gleneagles to Meet the Millennium Development Goals," Center for Strategic and International Studies, Washington, DC, *June 10*, 2010
- The First Annual Conference on Turkey: "Turkey's New Geopolitics: Challenges and Opportunities," The Center for Turkish Studies at the Middle East Institute, Washington, DC, *June 16*, 2010
- "Enhancing Asia's Security Dialogue: The Role of the CICA," The New European Democracies Project, the Turkey Project at CSIS, and the Institute for New Democracies (IND), Washington, DC, *June 17*, 2010
- "The Greek Economy in Crisis: Causes and the Way Forward," The Hellenic Society Prometheas, St. George Orthodox Church, Bethesda, MD, *June 18*, 2010
- "Overcoming the Crisis and Securing the Future of Europe," The German Marshall Fund of the United States, Washington, DC, *June 23*, 2010
- "Prospects and Challenges for U.S.–India Technology Cooperation," Carnegie Endowment for International Peace, Washington, DC, *June 23*, 2010
- "How Can China Reduce Its Reliance On Net Exports," Carnegie Endowment for International Peace, Washington, DC, *June 24*, 2010
- "Successes in African Agriculture," International Food Policy Research Institute, Washington, DC, *June 24*, 2010
- "Weathering the Storm: Africa after the Crisis," at the Brookings Institution, Washington, DC, *July 7*, 2010

- "Transatlantic Security, Data Sharing, and Privacy Promotions: A U.S.-E.U. "Dialogue," Atlantic Council, Washington, DC, *July 8*, 2010
- "U.S. Regulatory Policy and Free Enterprise: The Impact on Economic Recovery," by Chris DeMuth, The Brookings Institute, Washington, DC, *July 8*, 2010
- "Reimagining U.S. Immigration Policy," The Brookings Institution, Washington, DC, *July 8*, 2010
- "The Global Economic Crisis and Its Impact in Latin America," George Washington University, Washington, DC, *July 13*, 2010
- "Export Control Reform: Security Enhancement and Economic Boon," American Enterprise Institute, Washington, DC, *July 14*, 2010
- "Global Energy Challenges: A European Perspective," The European Institute, Washington, DC, *July 19*, 2010
- "Do We Need a New Stimulus Package? Estimates of Spending and Tax Multipliers," American Enterprise Institute for Public Policy Research, AEI, Washington, DC, *July 23*, 2010
- "Youth Leadership Speaker Series with Congressman Elijah Cummings, Congresswoman Barbara Lee, Van Jones 21st Century Democrats," The Ford House Office Building, Washington, DC, *July 28*, 2010

School Resources, Student Achievement and Racial Inequality

Spyros Konstantopoulos: Professor at Michigan State University

Effective allocation of school resources to increase student achievement is the paramount objective of U.S. education. A major part of educational research has focused on identifying important school-related factors that affect student learning positively. In addition, many school policies are designed to ensure the best possible distribution of school resources that will result in higher levels of student achievement. At the center of this line of research is the notion that school resources *do matter* and have positive effects on student achievement. Two important school resources that have been of great interest to educational researchers and policymakers, especially during the last decade, are class-size and teachers.

Class-Size Effects

Decisions about the allocation of school resources involve decisions about allocating teaching staff to classrooms. This involves making decisions about class-size and determining the optimal number of students in a classroom in order to

"Class-size reduction has been hypothesized to be a promising school mechanism that increases student achievement for all."

increase learning. Specifically, class-size reduction has been hypothesized to be a promising school mechanism that increases student achievement for all. The effects of class-size on student achievement have gained considerable attention in educational research and policymaking especially over the last decade. Many states introduced class-size reduction programs in the 1990s. California, for example, introduced a class-size reduction program giving schools financial incentives to reduce class-size in the early elementary grades to 20 or fewer students in each classroom. Wisconsin adopted a program that reduced class-size to nearly 15 students per classroom in early grades in schools with high percentages of students of low socioeconomic status. Class-size reduction is an appealing school intervention because, first, it is easy to implement. Its implementation involves making sure that each classroom has no more than a specific number of students (e.g., 20). Second, class-size reduction does not necessarily require changes in teaching or instructional practices, or curricula, that is, teachers can go about their everyday classroom routine with no disruptions.

In the late 1990s and early 2000s I was involved in a series of papers that examine the effects of small classes on student achievement, with coauthors Larry Hedges and Barbara Nye. Specifically, we studied the immediate, long-term, cumulative, and differential effects of small classes on student achievement using data from a four-year large-scale randomized experiment (*Project STAR*), as well as data from follow-up studies of Project STAR such as the *Lasting Benefits Study* (LBS). Project STAR is a unique large-scale randomized experiment, where

"Successive exposure to small classes in early grades is beneficial to low achievers in later grades."

students and teachers within schools were randomly assigned to small or regular size classes. The first study analyzed the immediate effects of small classes on student achievement in early grades (e.g., kindergarten through third grade) and found strong evidence of positive effects of small classes on academic achievement for all students. The effects were considerable for educational research and pointed to achievement gains of one-fifth of a standard deviation. The cumulative effects of small class in the four-year period were even larger and nearly one-third of a standard deviation. The second study examined the enduring effects of small classes in later grades (e.g., four through eight). The findings suggested that class-size effects lasted through eighth grade and were large enough to be important for policy (nearly one-sixth of a standard deviation). These findings are very important since it is rare to find lasting

benefits of early grade interventions in educational research. Typically, previous research has shown that the benefits fade away right after the end of the intervention.

An equally important policy question is related to the differential effects of small classes on minority and disadvantaged children. Put differently, the question is whether small classes can contribute to closing the achievement gap. My coauthors and I carefully studied this issue. Overall, the findings suggested virtually no evidence of differential small class effects for disadvantaged and minority students in kindergarten through third grade. Although all students benefited from being in small classes, minority and disadvantaged students did not seem to benefit more. However, when we examined the long-term differential effects of small classes on minority students we found that being in small classes in early grades may reduce racial inequality in later grades (four through eight). This finding is significant because it indicates that reducing class size in early grades can help reduce the racial achievement gap in later grades. On the other hand, this result was observed only when minority students were in small classes for four years continuously (e.g., kindergarten through third grade), suggesting that continuous longer term exposure to small classes may benefit minority students in later grades.

More recently, I examined the differential effects of small classes on low achievers and found some interesting results. Specifically, I analyzed the variability in student achievement in small and regular classes in order to determine whether class size reduction affects the achievement gap between low and high achievers. I also used quantile regression to examine the effects of small classes on academic achievement in the tails of

"Being in small classes in early grades may reduce racial inequality in later grades"

the achievement distribution. The results consistently indicated that high achievers benefited more from being in small classes in early grades than other students. This result suggests that class-size reduction may not be an effective school resource to close the achievement gap. In a subsequent study with Vicki Chung I investigated the additive effects of small classes in grades four through eight using data from Project STAR and LBS. We found that in reading and in grades four and six low achievers benefited more from being in small classes from kindergarten through third grade continuously than other students. That is, successive exposure to small classes in early grades is beneficial to low achievers in later grades.

Overall, these findings have provided conclusive evidence that class-size reduction has important positive, immediate and long-term effects on student achievement for all students. Note that, on average, in Project STAR, there were 15 students in small classes and 23 students in regular size classes. This eight student difference, on average, between small and regular size classes resulted in significant increases in student achievement. However, classrooms with 15 students are rarely observed in schools in natural settings and given that Project STAR is a unique study, one would argue that the findings from Project STAR illustrate the best case scenario for small class effects on student achievement. In addition, these results are not well replicated using other data.

Teacher Effects

Teachers are an integral part of the education system, bearing significant consequences. Folk knowledge as well as our own experiences in elementary and secondary schools suggest that the effects teachers have on individual students can be

"The effects teachers have on individual students can be remarkable, and can last well into adulthood"

remarkable, and can last well into adulthood. With the passage of the *No Child Left Behind Act* (NCLB), test scores are widely used to hold schools and teachers accountable for student learning. As a result, currently, many educational researchers study the effects of teachers on student achievement. There are at least two ways to determine how teachers affect student achievement. One way is to examine whether specific teacher characteristics such as teacher education, experience and salary are associated with student achievement. Another way is to estimate teacher effects as differences in class-room achievement with the underlying assumption that the between classroom variation in achievement captures teacher effectiveness.

Over the last few years I have been involved in studies that

examine the effects of teachers on student achievement. In one study, my colleagues Larry Hedges and Barbara Nye and I used data from Project STAR to determine the magnitude of teacher effects in early grades. We defined the magnitude of teacher effects as variability in achievement across classrooms controlling for important student characteristics and treatment effects (e.g., class-size). This was the first study to provide evidence about teacher effects using high-quality data from a randomized experiment, where students and teachers were randomly assigned to classrooms within schools. Our results yielded several noteworthy findings: First, teacher effects were large enough to be important for educational policy and nearly as large as the cumulative effects of small classes. Second, the results indicated that teachers seem to matter more than schools, that is, the teacher a student was assigned to within a school appeared to have a larger impact on student achievement than the school the student attended. Third, teacher effectiveness was more pronounced in lower *Socio-Economic Status* (SES) schools than in higher SES schools. Fourth, teachers and schools seemed to have a stronger effect on mathematics than on reading achievement. Fifth, observed teacher characteristics such as experience affected student achievement positively; more experienced teachers were more likely to boost student achievement than less experienced teachers. Finally the study validated estimates of teacher effectiveness from previous non-experimental work.

Lately, I worked on follow-up studies about teacher effects that are related to the durability of teacher effects in early grades. In one study, in particular, I examined the enduring benefits of teacher effects on student achievement through third grade using experimental data from Project STAR. The findings suggested that teacher effects are important and persist in early grades, but as expected recent teacher effects are more pronounced than less recent teacher effects. Students who have highly effective teachers successively in early grades increased their achievement by nearly one-third of a standard deviation. In a subsequent study, my coauthor Vicki Chung and I investigated the persistence of teacher effects through sixth grade. The cumulative teacher effects were significant and substantial hovering around one-half of a standard deviation. This finding indicates that longer continuous exposure to highly effective teachers in elementary grades results in large benefits for all students. In contrast, longer continuous exposure to low effective teachers results in a detriment to achievement that can be as large as one-fifth to one-third of a standard deviation.

"Longer continuous exposure to highly effective teachers in elementary grades results in large benefits for all students."

I have also investigated the effects of teachers on minority and disadvantaged students. The findings indicated that although teachers have positive effects on student achievement for all students, there was no evidence that minority and disadvantaged students benefited more from effective teachers. It is noteworthy that the magnitude of some of these estimates was considerable, indicating beneficial teacher effects on minority and disadvantaged students. Nonetheless, the estimates were not statistically significant mainly because they were underpowered (low probability of detecting the estimate).

Overall, these findings suggest that teachers differ considerably in their effectiveness and that these differences may be more pronounced in lower SES schools. It also appears that class-size does not interact with teacher effects, that is, teacher effectiveness is similar in small and regular size classes. In addition, there seems to be conclusive evidence that teacher effects persist in elementary grades and that the cumulative teacher effects are substantial. Hence, recruiting effective teachers in early grades is critical. As with small size classes; teachers do not seem to be the best means for closing the achievement gap. Nonetheless, teacher effects estimates derived from Project STAR assumed a perfect relationship with student achievement and absence of measurement error, which is unlikely. As a result, these estimates may be the best case scenario for teacher efforts on student achievement. Lastly, specific teacher characteristics do not account for much of teacher effectiveness. In Project STAR, teacher characteristics such as experience and education explained approximately one percent of teacher effectiveness. This implies that most of the differences in teacher effectiveness consist of unobserved teacher characteristics.

Short Bio

Spyros Konstantopoulos is associate professor and program coordinator of measurement and quantitative methods at the department of counseling, educational psychology, and special education at the College of Education at Michigan State University. He received his BA in Education from the University of Athens, his first MS from Purdue University in Educational Psychology and Research Methods, his second MS from the University of Chicago in Statistics, and his Ph.D. from the University of Chicago in Research Methods. His research interests include the extension and application of statistical methods to issues in education, social science, and policy studies. His methodological work involves statistical methods for quantitative research synthesis (meta-analysis) and mixed effects models with nested structure (multilevel or hierarchical linear models).

His substantive work encompasses research on class size effects, teacher and school effects, program evaluation, labor market performance of young adults, and the social distribution of academic achievement. In 2002, he received the Palmer O. Johnson Award from the American Educational Research Association, and the Harold E. Mitzel Award for meritorious contribution in educational practice through research. He is an IZA research fellow and a member of the Society for Research Synthesis. He has published in journals such as the American Journal of Education, the American Educational Research Journal, Educational Evaluation and Policy Analysis, the Elementary School Journal, Teachers College Record, Journal of Research on Educational Effectiveness, Evaluation Review, and Multivariate Behavioral Research. ■

Upcoming Events

November 1, 2010: Innovation Policy Day, National Press Club, Washington, DC
November 2, 2010: Innovation Academic Day, Columbia Square, Washington, DC
November 3, 2010: German Day on Development, World Bank, Washington, DC
November 5, 2010: Infra Day, Resources for the Future, Washington, DC
January 8, 2011: "Ethnicity, Identity and the Labor Market" AEA Annual Meeting, Denver, CO
April 14-17, 2011: Annual Meeting on the Economics of Risky Behaviors, IZA, Bonn, Germany
May 11-15, 2011: Annual Migration Meeting, Columbia Square, Washington, DC

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