



# Fifth ECINEQ Meeting Bari - July 22-24, 2013



### Booklet of abstracts

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### Conference schedule

		July 22 2013
8.30 AM	9.00 AM	Registration
9.00 AM	9.30 AM	Welcome
9.30 AM	11.00 AM	Keynote Lecture John Roemer:
0.00 111.1	11.00 11.11	Kantian equilibrium: an approach to the microfoundations of cooperation
11.00 AM	11.30 AM	Coffee Break
11.30 AM	1.00 PM	Parallel Sessions $(1.1,1.2,1.3,1.4,1.5,1.6,1.7,1.8)$
1.00 PM	2.30 PM	Lunch
2.30 PM	4.00 PM	Parallel Sessions (2.1,2.2,2.3,2.4,2.5,2.6,2.7)
4.00 PM	4.30 PM	Coffee Break
4.30 PM	6.00 PM	Parallel Sessions (3.1,3.2,3.3,2.4,3.5,3.6,3.7)
6.00 PM	7.00 PM	Meeting ECINEQ Council and Executive Committee
		July 23 2013
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9.00 AM	10.30 AM	Parallel Sessions (4.1,4.2,4.3,2.4,4.5,4.6,4.7)
10.30 AM	11.00 AM	Coffee Break
11.00 AM	12.30 AM	Parallel Sessions (5.1,5.2,5.3,2.4,5.5,5.6,5.7)
12.30 AM	$2.00~\mathrm{PM}$	Lunch
2.00 PM	3.30 PM	Parallel Sessions (6.1,6.2,6.3,2.4,6.5,6.6,6.7)
3.30 PM	4.00 PM	Coffee Break
4.00 PM	5.30 PM	Keynote Lecture Ravi Kanbur:
1.00 1 1.1	0.00 1 111	Can a country be a donor and a recipient of aid?
6.30 PM		BUS departure for dinner
8.00 PM		Gala Dinner
		July 24 2013
9.00 AM	$10.30~\mathrm{AM}$	Parallel Sessions (7.1,7.2,7.3,2.4,7.5,7.6,7.7,7.8)
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$4.00~\mathrm{PM}$	$5.30~\mathrm{PM}$	Keynote Lecture Martin Ravallion:
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5.30 PM	$6.00~\mathrm{PM}$	Coffee Break
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- Testing Tax-Progressivity and Income-Redistribution: The Suits Approach,

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#### List of abstracts

## Multidimensional Gini indices, weak Pigou-Dalton bundle dominance and comonotonizing majorization

Asis Kumar Banerjee Session 1.1

This paper considers the problem of constructing a normatively significant multidimensional Gindex of relative inequality. The social evaluation relation (SER) from which the index is derived is required to satisfy a weak version of Pigou-Dalton Bundle Principle (WPDBP)(rather than Uniform Majorization or similar conditions). It is also desired to satisfy a weak form of the condition of Correlation Increasing Majorization called Comonotonizing Majorization (CM).

The problem of measuring multidimensional inequality is here interpreted to be essentially a problem of setting weights on the different attributes. It is argued that determination of these weights is linked to the problem of determining the weights of the individuals. A number of conditions on the two sets of weights and on their interrelationships are proposed. By combing these conditions with a social evaluation function which is decomposable between equity and efficiency components we obtain a specific SER. THe Kolm index derived from the relation is then suggested as the multidimensional inequality index.

It is shown that the proposed index is a multidimensional Gini index satisfying the (inequality index version of the) properties of WPDBP and CM. The index does not seem to have appeared in the literature before. Moreover, the literature does not seem to contain any other normatively significant multidimensional Gini index that would satisfy both of these properties if the allocation matrices are not restricted to be strictly positive. In this paper this restriction has been relaxed on grounds of potential empirical applicability of the index.

Link to the PDF file

## Modeling Bivariate Lorenz Curves with Applications to Multidimensional Inequality in Well-Being

Jose Maria Sarabia, Vanesa Jorda Session 1.1

The extension of the univariate Lorenz curve to higher dimensions is not an obvious task. The three existing definitions were proposed by Taguchi (1972a,b), Arnold (1983) and Koshevoy and Mosler (1996), who introduced the concepts of Lorenz zonoid and Gini zonoid index. In this paper, using the definition proposed by Arnold (1983), closed expressions for the bivariate Lorenz curve are given, assuming different formulations of the underlying bivariate income distribution. We study a relevant type of models based on the class of bivariate distributions with given marginals described by Sarmanov and Lee (Lee, 1996; Sarmanov, 1966). This model presents several advantages, in particular the expression of the bivariate Lorenz curve can be easily interpreted as a convex linear combination of products of classical and concentrated Lorenz curves. A closed expression for the bivariate Gini index (Arnold, 1987) in terms of the classical and concentrated Gini indices of the marginal distributions is given. This index is specially useful, and can be decomposed in two factors, corresponding to the equality within and between variables. Specific models with Beta, GB1, Pareto, Gamma and lognormal marginal distributions are studied. Other

alternative families of bivariate Lorenz curves are discussed. Some concepts of stochastic dominance are explored. Extensions to higher dimensions are included. Finally, an application to measurement multidimensional inequality in well-being is given.

Link to the PDF file

## On a multidimensional Pigou-Dalton-type transfer principle and the extension of the fundamental theorem of inequality measurement

Ernesto Savaglio, Stefano Vannucci $Session\ 1.1$ 

Given two distribution matrices  $X, Y \in \mathbb{R}^{n,m}$ , representing a population of N individuals endowed with m attributes, which one does exhibit the lower level of disparity? To answer the question, we generalize some suitable unidimensional dominance criteria to the multidimensional case. In particular, we explore the possibility to extend the majorization (or dually Lorenz) preorder for vectors to a multivariate framework in which the elements of the distribution (which are full-comparable in the unidimensional (income) case), are now vectors of individual endowments. Those endowments are compared according to a criterion that is arguably the most non-controversial and natural one: the partial order induced by the binary relation that says individual i is richer than individual j if and only if for each good i's endowment is larger than j's one.

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#### Empirical Versus Policy Equivalence Scales: Matching Estimation

Adam Szulc Session 1.2

Properties of three types of equivalence scales obtained through the matching estimation are compared. They are derived by estimating the effect that demographic variables have on the household expenditures. The scales estimated include: i) matching on common values of well-being covariates (partly normative approach), ii) matching on simulated equivalent income minimising the deviation between the estimated and presumed value (solely empirical method), iii) matching on covariates with imposed economy of scale on selected commodities (policy scales). Unlike many scales based on the estimates of demand systems, those obtained by the matching estimation confirm expectations based on the economic theory. The empirical part of the study is based on the Polish Household Budget Survey data.

#### The ex post/ex ante Transfer Principles

Marc Dubois Session 1.2

In this study, we adopt a 'stronger' definition of the normative concept. It turns out that an extended social welfare function which includes the individuals' preferences is considered as empirically verifiable. In this framework, our model presents a decision-maker who does not know precisely what the individuals' preferences are (we name this position an ex ante one). She will have to reduce inequality by making decisions in a risky environment. Hence, we examine the difference between the decision-maker's behavior in the Expected-Expected Utility model (EEU) and the Dual-Expected Utility model (DEU). Ex ante, she will have to choose a reform without knowing its effects. We introduce the ex ante diminishing transfers principle which differs from the traditional one (subsequently named ex post). Ex ante, the respect of the diminishing transfers principle depends on both the decision maker's attitude towards risk and her redistributive preferences. Our results show that, ex ante, there is a significant probability that a DEU risk-averse decision-maker implements diminishing transfers.

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#### Proximity-sensitive individual deprivation measures

Walter Bossert, Conchita D'Ambrosio Session 1.2

We propose and characterize a generalization of the classical linear index of individual deprivation based on income shortfalls. Unlike the original measure, our class allows for increases in the income of a higher-income individual to have a stronger impact on a person's deprivation the closer they occur to the income of the individual whose deprivation is being assessed. The subclass of our measures with this property is axiomatized in our second result.

Link to the PDF file

## Competition, Firm Size and Returns to Skills: quasi-experimental evidence for Italy Michele Raitano, Francesco Vona

Session 1.3

We assess the impact of three quasi-natural experiments on returns to several types of skills, i.e. the 1993 Lira devaluation, the pre-euro 1997 Lira revaluation and of the process of market liberalization of the late 90s-early00s. We follow Guadalupe (2007) by assuming that the impact of the first two shocks is mediated by the trade exposure of sectors. For the liberalization shock, we follow Bassanini and Brunello (2011) by maintaining that competition increases only in three sectors: transport, energy and communication. Both types of experiments show that post-shock returns to skill increase in sectors that are more exposed to competition. In turn, the devaluation of the Lira in 1993 decreases returns to skills consistently with complementary evidence in Bugamelli et al. (2010). On average, instead, real wage premia decrease in sectors more exposed to competition. Finally, the increase in the skill premia

occurs only in large and especially medium-sized firms. This novel result appears as the combination of two contrasting forces: 1. medium firms compete to attract the best workers and so pay higher skill premia, 2. large firms are forced to pay higher skill premia, but are also characterized by rent sharing with unions that reduce returns to skills.

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## Tracking in the tracks. Understanding inequality patterns in the Italian public schooling system

Luigi Benfratello, Giuseppe Sorrenti, Gilberto Turati Session 1.3

We study whether - beyond an EU-style tracking that separates students in different curricula - the Italian highly centralized public schooling is plagued also by an implicit US-style tracking system, which separates students by ability within the same track and further reinforces inequality patterns. We pursue this aim by exploiting administrative data provided by the University of Turin on a standardized admission test at the School of Economics. The test is designed to verify students' basic knowledge and literacy. We proxy students' ability with the test score and study stochastic dominance of scores distribution across different schools within the same track all operating in the Municipality of Turin. We check whether stratification exists also for income distributions, using available information on the household income for each student. Our findings strongly suggest that the inequality patterns common in Italian schooling are affected by both types of tracking. We finally consider a regression model to understand whether individual differences in scores are mostly driven by the EU- or the US-style tracking. Results point to the importance of schools as the institutions truly responsible for inequalities, while household income appears to influence the choice between general and vocational track.

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#### inequality and education

Daniele Checchi, Michela Braga, Elena Meschi, Herman van de Werfhorst  $Session\ 1.3$ 

In this paper we study the relationship between inequality in education (measured in terms of both quantities - years of education - and quality - level of mathematical competences) in a cross-section of countries, using different age cohorts. We find that income inequality, even taking into account country and year fixed effects, is significantly affected by inequality in education along both dimensions. We use IV estimation in order to obtain the impact of educational reforms onto income distribution.

#### The Great Happiness Moderation

Claudia Senik, Sarah Flèche, Andrew Clark Session 1.4

This paper shows that within-country happiness inequality has fallen in the majority of countries that have experienced positive income growth over the last forty years, in particular in developed countries. This new stylized fact comes as an addition to the Easterlin paradox, which states that the time trend in average happiness is flat during episodes of long-run income growth. This mean-preserving declining spread in happiness comes about via falls in both the share of individuals who declare low and high levels of happiness. Rising income inequality moderates the fall in happiness inequality, and may even reverse it after some point, for example in the US starting in the 1990s. Hence, if raising the income of all does not raise the happiness of all, it will at least harmonize the happiness of all, providing that income inequality does not grow too much. Behind the veil of ignorance, lower happiness inequality would certainly be considered as attractive by risk-averse individuals.

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# Public Financing of Tertiary Education, Brain Drain, and Income Distribution Gabriel Romero, Aida Galiano Session 1.4

In a context in which brain drain is increasing, two important questions arise: Why does a society agree to publicly finance tertiary education? How does the brain drain affect income distribution in the source economy? We address these questions and introduce two contributions to the literature on brain drain. First, we apply a political economic approach to study why citizens should agree to the public financing of tertiary education in a context where skilled workers can emigrate. Second, we explore (theoretically and empirically) the effect of an increase in skilled emigration on the income distribution, which introduces an analysis of a causal effect not broadly analyzed in the literature. A key prediction of our theoretical model is the existence of a non-monotonic relationship between income inequality and emigration of skilled workers. Our empirical data confirm this result, showing a statistically significant inverse U-shaped form.

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#### Relative Concerns in and out of the Firm. Lessons from a Matched Employer-Employee French Database

Senik Claudia, Godechot Olivier Session 1.4

This paper looks at the association between wage satisfaction and different notions of reference wage, based on a matched employer-employee dataset. It shows that workers' satisfaction depends on other-people's income in different ways. Relative income concerns are important, but we also find robust evidence of signal effects. For

instance, workers are happier the higher the median wage in their firm, holding their own wage constant. This is true of all employees, whatever their relative position in the firm. This signal effect is stronger for young people and for women. These findings are based on objective measures of earnings as well as subjective declarations about wage satisfaction, awareness of other people's wage and reported income comparisons.

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## Are Women And Men Equal In The Effect Of Unemployment On Future Wages? An Analysis Based On The ECHP

Olivia Ekert-Jaffe, Isabelle Terraz Session 1.5

This paper investigates the effect of unemployment on men and women's monthly wages for eight European countries. Using a harmonised database (ECHP), we estimate the impact of declared unemployment on employees while taking account of attrition and unobserved individual heterogeneity. We find sizable unemployment effects. In most of the countries, the wage penalty represents from 4% to 9%, and appears to be even higher in the more flexible economies. In certain countries we do not find any gender differences. This is not the case for Belgium, where the scarring effect is particularly strong for women, and France and Italy, where it is particularly weak. Nevertheless, focusing on women who work full time, there is no gender difference in France. To explain the discrepancies between countries, we suggest that labour market institutions such as unemployment benefits and wage-setting institutions may be avenues of investigation.

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# Marital status and mortgage in France: do unmarried couples pay a risk premium? Marion Leturcq Session 1.5

Cohabitation rates increased a lot over the last decades, but little is known about the economic behavior of cohabiting couples. This paper assesses the link between marital status and the price of mortgage over the period 1987-2006 in France. Computing the effective interest rate couples face, it shows that married and unmarried couples tend to pay similar similar interest rate when difference in observable characteristics is not controlled for. However, when the differences in observables characteristics is accounted for, married couples tend to face a lower effective interest rate over the beginning of the period but they face a higher effective interest rate over the end of the period.

#### Using Extremes to Test Theories of Risk, Inequality and Gender

Steven Beckman, Gregory De<br/>Angelo, W. James Smith  $Session\ 1.5$ 

Abstract: Near the center of the income distribution expected utility theory, Fehr-Schmidt utility, Prospect theory and socio-biological theories of gender all predict similar behavior. In order to distinguish among the theories we need to broaden test conditions by broadening the distribution of income. Given that some theories predict risk seeking behavior we also need to employ experimental procedures that allow both risk seeking and risk averse behavior. We find similar other-regarding behavior between men and women roughly consistent with Fehr-Schmidt. In the risk domain, expected utility works well for women but men are generally risk seeking in one or more of the extremes.

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#### The Great Recession and the distribution of household income

Stephen P Jenkins, Andrea Brandolini, John Micklewright, Brian Nolan  $Session\ 1.6$ 

The 'Great Recession' was the worst macroeconomic downturn since the 1930s in most OECD countries. In many economies, subsequent recovery has been sluggish, and has sometimes turned into a new recession. The paper investigates the effects of the Great Recession on the distribution of household incomes. It shows that the changes between 2007 and 2009 in household incomes in total and on average, in income inequality, and in poverty rates, were modest in most of the countries studied, in spite of the depth of the recession in most countries. This outcome is remarkably different from the far more dramatic experience of the Great Depression, although not so different from some recent recessions such as the Nordic crisis of the early 1990s. During the GR, the household sector was protected from the impact of the downturn by both automatic stabilisers and additional support of governments through the tax and benefit system. The post-2009 distributional impacts of the GR are likely to have been considerably larger however, with greater differences across countries emerging.

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#### A cross-country decomposition of inequality during the great recession

Olivier Bargain, Tim Callan, Karina Doorley, Claire Keane Session 1.6

This paper examines the impact on inequality and poverty of the economic crises in three European countries - Germany, the UK and Ireland. The period examined, 2008 to 2010, was one of great economic turmoil as unemployment rose and GDP fell. It is unclear, however, whether changes in inequality and poverty rates over this time period were driven by changes in demographic and market income changes or whether they were influenced by tax benefit policies. Using microsimulation it is possible to disentangle these effects. We find that inequality rose in Ireland whilst falling in Germany and Ireland while poverty rates rose in Germany but fell in Ireland and the UK.

In general, these changes can be attributed to changes in the population, such as market income and demographic changes rather than tax benefit policies.

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## The design and distributional effects of fiscal consolidation measures in the European Union

Alari Paulus, Francesco Figari, Holly Sutherland Session 1.6

We compare the distributional effects of fiscal consolidation measures in nine EU countries implemented following the financial and economic crisis of the late 2000s. Using the EU microsimulation model EUROMOD, we identify measures introduced through cuts in public sector pay and cash benefits, increases in direct taxes and workers' social contributions as well as changes in VAT, and quantify their impact on household income distribution. We find notable variation in the size, composition and effects of fiscal consolidation. Overall, richer households tend to bear relatively more burden in most countries, though this differs a lot between types of tax-benefit instruments. Such heterogeneity remains little visible when measures are grouped as spending cuts and tax increases, which has been often used in the fiscal adjustment literature.

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#### Tax Policies and Informality in South Africa

Riccardo Magnani, Eliane El Badaoui Session 1.7

We develop a micro-macro simulation model for evaluating tax policies in developing countries characterized with a high informal employment. Our approach allows to analyze the effects of a reform, such as a tax policy, both at the micro level, i.e. on individual's labor supply choices (formal/informal employment, work/leisure) and at the macro level (GDP, equilibrium wages, size of the informal sector, etc.). We analyze, for the South-African case, the effects of two tax reforms, the introduction of a proportional tax system and of a lump-sum tax system, instead of the current progressive tax system. We show that both reforms allow to reduce the size of the informal sector and produce a positive effect on GDP, but they increase income inequality.

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#### Redistribution in Periods of Technology DIffusion

Manuela Magalhaes

Session 1.7

This paper analyses the effectiveness of two alternative redistributive policies - lump-sum transfers and educational subsidies - in periods of a skill-biased technology diffusion and when credit market is absent. The effectiveness arises from the redistribution effects on labor supply and human capital accumulation. We build a micro-founded dynamic general equilibrium model with technology diffusion, elastic labor supply and schooling decisions. There are skilled and unskilled workers who become skilled through investments in education. The model is simulated for the USA economy reproducing the college premium path from 1969. In this economy, lump-sum transfers are ineffective decreasing the unskilled labour supply and output and rising skilled labour supply and inequality. Yet the effectiveness of education subsidies depends on the stage of the technology diffusion cycle. For example, during the speed-up of the technology diffusion, education subsidies also increase the skill premium and, thereby, the income inequality.

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#### The effects of non-contributory pensions in Colombia and Peru

Javier Olivera, Blanca Zuluaga Session 1.7

The aim of this paper is to study the ex-ante effects of the implementation of a Non Contributory Pension (NCP) program in Colombia and Peru. Relying on household survey data from both countries, we simulate the potential impact of the transfer on poverty, inequality, fiscal cost, and the probability of affiliation to the contributory pension system. This last effect is the most direct behavioural effect one can expect from the implementation of a transfer scheme without contributions attached. For the behavioural response we estimate a Nested Logit Model. Our results show that a NCP in Colombia and Peru contributes to the reduction of poverty and inequality among the elderly, particularly in rural areas at affordable fiscal costs. Furthermore, there is not a large impact on the probability of affiliation to contributory pensions when the program is targeted to the poor (and extreme poor), with the exception of Peruvian women for whom there is always a sizeable reduction on their probability of affiliation.

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#### Analyzing Inequality Of Opportunity In Educational Achievements

Casilda Lasso de la Vega, Agurtzane Lekuona  $Session\ 1.8$ 

Inequalities in educational achievements can stream from different sources. Some of them are beyond the student's control and cause ethically illegitimate inequalities. In contrast there are others related to the student's effort that lead to ethically legitimate inequalities. Fleurbaey and Schokkaert (Journal of Health Economics, 2009) derive measures of unfair inequality in health and health care delivery from a structural model. This paper proposes to take advantage of their model to compute unfair inequalities in the educational field. Data from the Program for International Student Assessment database (PISA) 2009 are used.

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#### Equality of opportunity in public education provision. Evidence from Italy

Francesco Andreoli, Giorgia Casalone, Daniela Sonedda  $Session\ 1.8$ 

One of the scopes of public provision of educational services is to rise a society above difference in economic performances that are due to family background factors, to grant equality of opportunity for everybody. However, if unjustly advantaged families are the ones who benefit more from education, then illegitimate inequalities might not be compensated and might rather be perpetuated across generations through implementation of these policies. We use Italian data to uncover the distribution across families of economic advantage associated to grandparents' background characteristics. For every increment of a thousand Euro in unjust economic advantage, families benefit of 140 Euro of in-kind educational transfer, a measure of the per-student cost of educational services provision. This effect is robust across quantiles. Moreover, public provision of education seems to redistribute resources towards disequalization of opportunities for income acquisition among the richest families.

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#### Opportunities in Higher Education: An Application in France

Magali Jaoul-Grammare, Brice Magdalou  $Session\ 1.8$ 

This paper first sets out criteria to evaluate the inequality of opportunity in higher education. We propose a two-level classification, by distinguishing the categorial and the counterfactual approaches. For each approach, we consider dominance quasi-orderings and inequality measures. We then apply these criteria to the French higher education system, by comparing the situation in 1992 and 2004. Our main findings reveal that: (i) there is inequality of opportunity in each of the two years; (ii) even if we cannot say that the situation was unambiguously better in 1992, we can nevertheless state that the inequality of opportunity haven't decreased significantly in the meantime.

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### Multidimensional poverty measurement: Shouldn't we take preferences into account? Koen Decancq, Marc Fleurbaey, Francois Maniquet

Session 2.1

We study multidimensional poverty measurement. We propose to use agents' preferences themselves to aggregate the different poverty dimensions. We axiomatically derive a family of poverty indices. The key axiom consists in a priori identifying which preference relation makes experiencing deprivation the most severe experience. Then, we use data from the Russia Longitudinal Monitoring Survey (RLMS-HSE) to illustrate the approach. We find considerable empirical differences between the results based on a preference-sensitive multidimensional poverty measure and one-dimensional or preference-insensitive alternative measures.

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#### Measuring Chronic Multidimensional Poverty: A counting approach

Sabina Alkire, Mauricio Apablaza, Satya Chakravarty, Gaston Yalonetzky Session 2.1

How can indices of multidimensional poverty be adapted to produce measures that quantify both the joint incidence of multiple deprivations and their chronicity? This paper adopts a new approach to the measurement of chronic multidimensional poverty. It relies on the counting approach of Alkire and Foster (2011) for the measurement of multidimensional poverty in each time period; and then on the duration approach of Foster (2011) for the measurement of multidimensional poverty persistence across time. The proposed indices are sensitive both to (i) the share of dimensions in which people are deprived and (ii) the duration of their multidimensional poverty experience. A related set of indices is also proposed to measure transient poverty. The behaviour of the proposed two families is analysed using a relevant set of axioms. An empirical illustration is provided with a Chilean panel dataset spanning the period from 1996 to 2006.

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## An appraisal to alternative Gini Coefficient formulation for the issue of underestimation in cases of small observations

Amlan Majumder Session 2.1

Gini coefficient is influenced by granularity of measurements. When there are few observations only or when they get reduced due to grouping, standard measures exhibit a non-negligible downward bias. However, there is no consensus on the issue in regard to types of bias, their magnitude and the methods of correction. This paper identifies three types of bias, two of which are non-stochastic and they may arise together. Underestimations associated with these two are considered and addressed with simplicity with derivation of alternative formulations under the three frequently followed approaches of computing Gini coefficient synchronising relevant previous and present concerns.

#### The cost of living in China: Implications for inequality and poverty

Åshild Auglænd Johnsen, Ingvild Almås Session 2.2

Since reforms were initiated in 1978, the economic development of China has been tremendous. The World Bank reports an average growth rate of 9.9 percent, as well as a significant poverty reduction in this period (World Bank, 2012). However, these poverty measures are subject to debate and uncertainty (Ravallion and Chen, 2007; Kahn et al., 1999; World Bank, 2009; Sicular et al., 2007). Correcting for the cost of living is essential to inequality and poverty measurement, making prices a central part of the poverty reduction discussion. Considering the differences across provinces and urban and rural China, regional price levels are likely to differ significantly in this vast and populous country.

In this paper, we identify Chinese price indices that can be used as deflators to make income comparable across both regions and time by applying a simple but empirically robust economic regularity, namely Engel's law, to household data. Subsequently, new inequality and poverty trends are calculated and compared with those based on the official consumer price indices (CPIs) and the poverty measures reported by the World Bank. We study the development of prices, inequality and poverty from 1995 to 2002, a period characterized by both the establishment of the "socialist market economy" - an official embrace of a more market-oriented economy - and high economic performance through high growth.

This paper reports three main findings. First, prices have increased more in rural areas and less in urban areas than what the official price indices suggest. Second, whereas measures based on official indices suggest that inequality has declined in the period under study, our new real income measures show an increase in inequality in this period. Third, income measures based on our prices indicate a substantially more moderate poverty reduction than both the official measures and the World Bank numbers. Why produce new price indices? First, data on prices in China are scarce. There are no official and available price indices that allow for cross-province comparisons, and price data on specific goods are extremely limited. The Chinese government publishes price trends for provinces, in addition to urban and rural-specific CPIs. However, these are all set to 100 in the base year and do not reveal cross-regional price level differences.

Brandt and Holz (2006) exploit regional price data published in various yearbooks around 1990 to construct spatial deflators for rural and urban provinces. Using regional CPIs, they extend data from the base year, 1990, back and forth in time. This procedure has its limitations. They have to rely on only a subset of goods and services consumed that have to be aggregated to produce a regional cost-of-living index. Methodologically, the SPI is subject to the same challenges as the CPI: Traditional procedures of aggregation fail to be consistent with consumer preferences and actual behavior (see, e.g., Neary (2004) for a discussion of the inconsistency between price indices and consumer preferences). In other words, both the CPI and SPI are biased measures of price changes.

In this paper, we apply the Engel-curve approach to Chinese household consumption data (Riskin et al. (1995), Shi (2002)). We identify prices that are comparable across both time and regions (i.e., urban and rural-specific provincial prices for the two years under study). The Engel-curve approach is based on Engel's law, which states that a household's budget share for food is inversely related to household real income. Hence, by estimating this relationship, we can identify real income from information on budget shares.

Hamilton (2001) first proposed to use this identification strategy to estimate biases in the CPI. The method states that if two households with identical characteristics - observed in different periods - have the same budget share for food, they should also have the same real income. Because real income is produced by deflating nominal income by the CPI, a difference in their measured real income reveals a CPI bias. The Engel-curve approach infers the cost of living directly from consumer behavior, and welfare consistency is secured.

We take this method to a cross-section: systematic regional differences in measured real income reveal price level differences (see also Almås (2012)). In this field there is an ongoing debate about the price development in China, which is mostly based on urban data. Gong and Meng (2008) apply the Hamilton method to identify province specific prices 1986-2001 for urban areas, whereas Nakamura et al. (2012) uses the approach to identify biases in the urban CPI. However, a large share of the Chinese population lives in rural areas and there are large economic

differences between the urban and rural regions. We consider it to be of importance to cover both regions when studying the development of inequality and poverty in China, and in this paper we include both rural and urban households.

This paper also speaks to debate on the actual size of China's economy (Feenstra et al. (forthcoming) and pro-poor growth. Our results indicate that if one uses the World Bank measures to calculate the poverty reduction in the world, the positive contribution from China may be overestimated.

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#### Rural Poverty and Ethnicity in China

Carlos Gradín Session 2.2

In this paper I investigate the nature of the differential in poverty by ethnicity in rural China using data from the Chinese Household Income Project in 2002. For that, I compare observed poverty with that in a counterfactual distribution in which ethnic minorities are given a set of relevant village and household characteristics of the Han majority. Results show that rural poverty would be higher among minorities if they had the same regional distribution of Han. On the contrary, the ethnic poverty differential is reduced after equalizing other characteristics of minorities, such as them living in less developed and mountainous areas, their larger number of children, their low education, and their fewer skilled non-agriculture workers. Additionally, I show that poverty among minorities is not even higher because some of these adverse characteristics have a smaller negative impact on them than on Han. Finally, the ethnic per capita (log)income differential is shown to be higher for higher percentiles, with an increasing role of location as the main driver of these differentials.

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#### In search of a multidimensional poverty index for Latin America

Jose Manuel Roche, Maria Emma Santos  $Session\ 2.2$ 

This paper examines the Multidimensional Poverty Index jointly developed by OPHI and UNDP for the case of eighteen Latin American and Caribbean (LAC) countries. The MPI is designed to be internationally comparable and to capture acute poverty. For these reasons, it provides relative low levels of poverty in the LAC region which, although being a message of hope, it can puzzle civil society as well as NGOs and government agencies working on poverty reduction programmes. Simultaneously many governments in the region are incorporating multidimensional poverty measures as official ones. Thus, there seems to be scope and need for a multidimensional poverty measure that allows comparability across countries in the region, yet captures a 'second layer' of poverty (beyond the acute one). We consider alternative adjustments that could be done to the MPI to satisfy the above requirements and evaluate their impacts empirically.

#### Cronyism and education performance

Giuseppe Coco, Raffaele Lagravinese Session 2.3

In the face of past ambiguous results on growth effects of education when measured through school attainment, some papers suggest that some countries may be unable to use productively their schooling output because of the scope of cronyism. We investigate and demonstrate that, in a stylized model, cronyism in the labour market, (e.g. the ability to exert influence to gain high wage positions without merit), may impact heavily on the relationship between schooling inputs and cognitive skills, due to incentive effects. We then use a two-stage DEA approach to identify factors affecting inefficiency in education performance of OECD countries when the output is proxied by PISA scores. Our empirical results suggest that, as in our theoretical model, in the presence of cronyism, incentives to cognitive skills acquisition are dampened. Analogously to developing countries but for different reasons, the best way to improve the education system performance in OECD countries may well be to fight cronyism and increase transparency in labour access.

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#### Can academic mentoring reduce the time to get a degree?

Claudia Marin, Anna Rinaldi Session 2.3

We run a randomized control trial to assess the impact of a mentoring program aimed at reducing the time needed to get a degree for "off-course students" - i.e. students who have not succeeded in passing all the exams within the prescribed period of time. Literature on graduation rate generally states that students' outcomes are affected by financial barriers and liquidity constraints. We find that this mentoring program had no positive effects on students' outcomes and that their performances are not related to family income.

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#### Wage Functions and Rates of Return to Education in Italy

Davide Fiaschi, Cecilia Gabbriellini Session 2.3

We study the return to education in Italy in the period 1995-2010 for a representative sample of Italian households. In line with previous literature, OLS under-estimate the return to schooling. When the endogeneity of schooling is taken into account, the return to an additional year in school increases. The evidence is that returns have not changed much over the considered period, varying between 5.9% and 7.9%. Looking to the different sector of employment, a relative convenience to work in the public sector emerges, but not significant for all the analyzed years. In addition, there is an evidence of a gender pay gap, in favor of men for all the period considered. When the type of school attended is taken into consideration, the returns to education increase with higher levels of educational

attainment.

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# Has the attitude of US citizens towards redistribution changed over time? M.Grazia Pittau, Roberto Zelli Session 2.4

Demand for redistribution has been traditionally investigated within a static scenario, giving the perception of a stationary association between individual determinants and preferences. Using repeated cross-sectional survey data from the General Social Survey over the period 1978–2010, we model individual preferences in the U.S. within a chronological perspective. We fit a a logistic non-nested multilevel model with three different levels of variation: individuals, time and cohort. Despite an overall stable trend in demand for redistribution, we find that driving factors in shaping redistributive preferences have changed rapidly. Personal income is always a strong predictor, with the poor-rich gap increasing over time. Large changes have characterized the effects of education, ethnic bonds and self-declared party identification. Over time, highly educated people have increased their probability to be in favor of redistribution while the less educated have become less prone. Ethnicity mattered more in the 1970s than in the 2000s. In the 2000s it is party affiliation that shapes preferences rather than ethnic bonds: white and black democrats have similar feelings toward redistribution and so do white and black republicans.

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# The paradox of redistribution revisited: and that it may rest in peace? Ive Marx, Lina Salanauskaite, Gerlinde Verbist Session 2.4

This paper shows that Korpi and Palme's influential claim that "the more we target benefits at the poor, the less likely we are to reduce poverty and inequality" no longer holds as a robust empirical generalisation. We replicate their original analysis for more recent years, a broader set of countries and a range of alternative specifications. We find that by and large the relationship between targeting and redistributive impact is a very weak one across countries, suggesting that the extent of targeting per se may not matter as much as we have assumed since Korpi and Palme. In fact, for what it matters, targeting tends to be associated with higher levels of redistribution, especially when overall effort in terms of spending is high. A key point of this paper, however, is that empirical specification, data source and country selection matter in significant ways. We try to make substantive sense of this breakdown of the originally established relationship by focusing on two questions: first, what has changed in the countries originally included in the study and, second, what is different about the countries now additionally included in the analysis?

## Polarization of Equality Preferences and the Democratic Voice: Evidence from the World Values Survey

John Bishop, Haiyong Liu Session 2.4

#### Abstract

This paper applies Buchanan's notion of a fiscal constitution to income distribution analysis. The fiscal constitution postulates that tax and transfer shares are broadly considered to be equitable and "semi-permanent." A testable hypothesis of the Buchanan model is that in countries with well-functioning democracies most individuals should be "content" with the underlying income distribution. We measure the degree of contentment by a clustering of responses near the median response and a lack of contentment by the degree of polarization. In a unique dataset, the World Values Survey (WVS), respondents were asked whether "incomes should be more equal, or do we need larger differences in income as incentives?" As an example of polarization we find that only 13 percent of US respondents are strongly dissatisfied with the US income distribution while 43 percent of Argentine respondents are strongly dissatisfied with the Argentina's income distribution. Using four waves of WVS data we model the polarization of responses to the equality question as a function of democracy/freedom indicators and the degree of income inequality.

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#### Looking at Pro-Poor Growth from an Agricultural Perspective

Stephan Klasen, Malte Reimers Session 2.5

Pro-poor growth has been identified as one of the most promising pathways to achieve the Millennium Development Goals (MDGs) or any subsequent set of goals aiming to reduce poverty worldwide. Related research has developed a multitude of instruments to measure pro-poor growth using absolute and relative approaches and income and non-income data. This article contributes to the literature by expanding the toolbox with several new measures based on the concept of the growth incidence curve by Ravallion and Chen (2003) and the opportunity curve by Ali and Son (2007) that take into account the extraordinary importance of agriculture for poverty reduction in developing countries. The toolbox is then applied to two comparable household surveys from Rwanda (EICV data for the years 1999-2001 and 2005-2006), a country that has experienced impressive economic growth since the genocide in the mid-1990s and that has undertaken considerable efforts to increase the population's access to social services over the last decade. Results indicate that Rwanda achieved in this time period enormous progress in the income, but also in the education and health dimension of poverty, which was in many cases even pro-poor in the relative sense. The new tools further reveal that agricultural productivity of the labor/land productivity-poor increased relatively (but not absolutely) faster than for the labor/land productivity-rich. Lastly, we find indications that the labor productivity-poor dispose of less education than the labor productivity-rich which may imply further potential to increase the poor's productivity levels if their education levels increased.

### Dairy production in India: A way out of poverty?

Pasquamaria Squicciarini, Anneleen Vandeplas, Johan Swinnen Session 2.5

With almost three quarters of the labor force dependent on agriculture in India, kick-starting agricultural growth will be crucial to generate pro-poor development in India. With this aim in view, India tends to retain a protective stance towards its agricultural sector, which it generally tries to keep off the negotiation table in its international trade agreements. In particular in the dairy sector, fears have been voiced that agricultural liberalization would drive small dairy farms in India out of the market, and leave them with few alternative sources of income. In this paper we use primary data on 1000 rural households in Andhra Pradesh, a state in the South of India, to corroborate the argument that dairy production is concentrated amongst the poorest of Indian rural households. We show that participating in dairy production plays a positive role on farmers' livelihoods, both when looking at incomes per capita, and at the accumulation of land. However, there seems to be a pro-rich bias in dairy production, rather than a pro-poor one: when looking at who reaps the benefits from engaging in dairy activities, we find that the rural poor are less likely to be dairy producers than wealthier households. An important reason may be constrained access to land which reduces the direct benefits of dairy production for pro-poor growth. If policymakers want to ensure that domestic supply of milk keeps pace with rising demand for milk, they will need to address current constraints in input and output markets. Especially input markets for dairy production (e.g. markets for green fodder) do not seem to work well. While further research is needed, we do expect they can contribute importantly to the current debate on Indian policymakers' dilemma between protecting producers - by keeping tariffs on milk imports high and protecting consumers - by ensuring an adequate supply of milk to fulfill local needs at reasonable prices.

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### Fiscal Decentralization in Gadarif State: Did it Realize the Promise:?

Sharif Bongo Session 2.5

Based on state and local data of the periods (1998-2010) and (2008-2010) respectively, this study aimed at evaluating the fiscal decentralization experience of Gadarif state of eastern Sudan in the context of different aspects of fiscal decentralization, namely expenditure assignment, revenue assignment and intergovernmental transfers. The results on the state level reveal that the experience came out with a poor fiscal situations indicated by higher dependence on the federal transfers and higher vertical imbalance. The cross section and panel data analysis of the local level of the state indicates the overwhelming dependence of the localities on the state transfers and the failure of most of the localities to perform their responsibilities of delivering the basic services to their constituents.

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### Labor Vulnerability and the Evolution of the Working Poor in Mexico

Eduardo Rodriguez-Oreggia, Bruno Lopez-Videla, Daniel Prudencio

Session 2.6

This paper addresses changes in labor poverty and labor income at the household level during a period of time characterized by a macroeconomic shock with higher unemployment and lower real wages. Using data from the employment surveys (ENOE) for 2005 and 2010, and with matching for time invariant characteristics, we create a group of comparable households for 2005 to overcome the lack of longer panel data. We applied a probabilistic model for labor poverty, a multinomial for changes in poverty between 2005-2010 and regression for labor income. Results show that social security in the job, increasing members with income, an education play a key role in preventing labor poverty and increasing labor earnings. In the time span households needed to increase their share of earners in order to prevent poverty and decreasing income. Education is mostly relevant for urban areas, but high school and college workers have seen falling their income relatively more.

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### Economic security of households: assessment based on scenario analysis

Marek Kosny, Maria Piotrowska Session 2.6

Uncertainty associated with the future and the lack of full protection against the financial consequences of adverse events are the most important reasons of research on economic security of households. Literature distinguishes between two basic concepts: economic insecurity and economic security. Economic insecurity refers to the economic losses, whereas security is usually associated with certain conditions, the fulfillment of which is a guarantee of well-being of the individual. The proposed interpretation of economic security combines both elements, including risk factors and risk protection. They are included in the scenarios of possible changes of the household's situation in the future. These scenarios cover all permissible combinations of future events - both positive and negative allowing for an assessment of their financial implications.

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### The Asset Price Meltdown and the Wealth of the Middle Class Edward Wolff

Session 2.6

I find that median wealth plummeted over the years 2007 to 2010, and by 2010 was at its lowest level since 1969. The inequality of net worth, after almost two decades of little movement, was up sharply from 2007 to 2010. Relative indebtedness continued to expand from 2007 to 2010, particularly for the middle class, though the proximate causes were declining net worth and income rather than an increase in absolute indebtedness. In fact, the average debt of the middle class actually fell in real terms by 25 percent. The sharp fall in median wealth and the rise in inequality in the late 2000s are traceable to the high leverage of middle class families in 2007 and the high share of homes in their portfolio. The racial and ethnic disparity in wealth holdings, after remaining more or less stable from 1983 to 2007, widened considerably between 2007 and 2010. Hispanics, in particular, got hammered by the Great Recession in terms of net worth and net equity in their homes. Households under age 45 also got pummeled by the Great Recession, as their relative and absolute wealth declined sharply from 2007 to 2010.

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# Quantifying The Progress of Economic and Social Justice: Charting Changes in Equality of Opportunity in the United States 1960-2000

Gordon Anderson, Teng Wah Leo Session 2.7

The notion of Equality of Opportunity (EO) has pervaded much of economic and social justice policy and research over the last half century. The sense that differences in agent outcomes that are the consequence of their individual choice and effort are acceptable, whereas variation in agent outcomes that are the consequence of circumstances beyond their control are not, has underpinned much gender, race, education, and family law and policy over that period, making it a many dimensioned issue. In this context the empirical analysis of EO has been hampered in the sense that the usual techniques are one-dimensional in nature. Here a new approach to evaluating levels of and changes in EO which readily accommodates these many dimensions is introduced, and progress in the extent of equality of opportunity in the United States is examined over the period 1960-2000. The evidence is that gains were made in all categories throughout the period, more so for boys than girls (though girls were better off in an EO sense to start with), more so for children in single parent circumstances, and more so for the poorly endowed.

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### A Gini approach to inequality of opportunity: evidence from the PSID

Antonio Abatemarco Session 2.7

Given (pragmatic) partial ordering criteria for the comparison of individuals in terms of both circumstances and responsible choices, a Gini-based approach is proposed for the measurement of opportunity inequality and its (relative) contribution to outcome inequality. An application to US income distributions from 1999 to 2009 is also discussed. Given six circumstance variables (gender, health, economic condition of parents in the early years, ethnicity, IQ-score in the early years and unemployment rate in the place of origin), opportunity inequality is found to account for between 15.0% and 16.6% of outcome inequality from 1999 to 2009 with an U-shaped pattern over time supporting existing evidences on the inequality implications of financial crises.

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Equality of opportunity and the distribution of long-run income among Swedish men and women

Karin Hederos Eriksson, Markus Jäntti, Lena Lindahl Session 2.7

In this paper we explore equality of opportunity in long-run incomes for Swedish men and women. We decompose inequality into two parts; one that is due to differences in circumstances (e.g. gender, IQ and parental income) and one that stems from differences in effort. The key idea is that a society has achieved equality of opportunity if all income inequality can be attributed to differences in effort. We find that most of the variation in long-run incomes in Sweden can be accounted for by differences in effort. When analyzing the male and female samples separately we find that IQ, non-cognitive abilities, parental income, parental education and variations in the distribution of effort between groups of individuals who have the same circumstances are important determinants of inequality of opportunity. When we pool the male and female samples gender explains up to one-fifth of inequality in long-run incomes. This means that gender is the most important contributor to inequality of opportunity in long-run incomes in Sweden.

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### On the measurement of dissimilarity and related orders

Francesco Andreoli, Claudio Zoli Session 3.1

We consider populations partitioned into groups, whose members are distributed across a finite number of classes such as, for instance, types of occupation, residential location, social class of fathers, levels of education, health or income. Our aim is to assess the dissimilarity between the patterns of distributions of the different groups. These evaluations are relevant for the analysis of multi-group segregation, socioeconomic mobility, equalization of opportunity and discrimination. We conceptualize the notion of dissimilarity making use of reasonable transformations of the groups' distributions, based on sequences of transfers and exchanges of population masses across classes and/or groups. Our analysis clarifies the substantial differences underlying the concept of dissimilarity when applied to ordered or to permutable classes. In both settings, we illustrate the logical connection of dissimilarity evaluations with matrix majorization pre-orders, and provide equivalent implementable criteria to test unambiguous dissimilarity reductions. Furthermore, we show that inequality evaluations can be interpreted as special cases of dissimilarity assessments and discuss relations with concepts of segregation and discrimination.

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### A Joint Analysis Of The Achievement And The Shortfall Distributions

Oihana Aristondo, Casilda Lasso De La Vega $Session\ 3.1$ 

When individual's characteristics are recorded using bounded variables, these characteristics can be represented indistinctly by achievements or shortfalls. In these circumstances, measuring inequality involved the choice of either the achievement or the shortfall distribution. Depending on the side we focus on the inequality rankings can be reversed. A number of indicators have been introduced to overcome this difficulty. Basically the problem arises when some invariance criterion needs to be invoked. Both the relative and the intermediate points of view behave quite differently when applied to achievements or to shortfalls. This paper proposes a framework in which the achievement and the shortfall distributions can be jointly analyzed. Specifically, joint distributions assuming relative, absolute or intermediate points of view are introduced. The corresponding measures are then applied to assess inequality. A dominance criterion to rank distribution regardless the aggregative measure chosen is also proposed.

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### Multidimensional welfare weights: sources, determinants and implications

Lucio Esposito, Enrica Chiappero-Martinetti  $Session \ 3.1$ 

The shift from unidimensional to multidimensional indices in social and medical sciences comes along with a number of complexities to come to terms with. Among these is the issue of whether or not the way dimensions feature in the multidimensional index should account for their different importance. With the use of primary data on dimensions importance collected in the field and nationally representative survey data we show that i) dimensions importance vary greatly depending on whose view is sought, ii) weighting dimensions according to their importance can lead to opposite conclusions on the trend of multidimensional poverty when different (empirically revealed) sets of weights are applied and iii) interesting insights emerge from the investigation of the determinants of individual views on dimensions importance.

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### Measuring Upward Mobility

Garance Genicot, Debraj Ray Session 3.2

This paper develops a mobility measure that combines desirable features of the relative and absolute approaches to measuring mobility. From the relative approach we borrow the idea that income growth accruing to the relatively poor is more to be valued than income growth to the relatively rich. From the absolute approach we take the idea that upward changes are to be valued, in and of themselves. Our combined approach precipitates (under some axioms) a class of mobility measures, fully characterized up to a single parameter. As an application, we measure upward mobility to the panel data in the Cross National Equivalent Files.

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Mobility over several periods for discrete variables: Theory and application to life satisfaction indicators in the United Kingdom

Sanghamitra Bandyopadhyay, Gaston Yalonetzky Session 3.2

This paper discusses the meaning of intra-generational mobility when variables are discrete (ordinal or categorical). We propose concepts, and related desirable properties, of maximum and minimum mobility, along with mobility-inducing transformations. We also propose several functional forms for indices of individual mobility, and social mobility. It turns out that these indices measure mobility as diversity or instability in people's status (as measured by the ordinal variable) along the accounting period. We apply these indices to measure the extent of mobility as diversity in the responses to life satisfaction questions in the United Kingdom, using the British Household Panel Survey.

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#### Restricted Finite Time Dominance

Anca Nicoleta Matei, Claudio Zoli Session 3.2

We investigate intertemporal dominance conditions for comparisons of finite unidimensional streams of outcomes in discrete time. We follow Ekern's [1981, Time dominance efficiency analysis. Journal of Finance, 36, 1023-1034] approach based on unanimous net present value comparisons for classes of discount factors representing temporal preferences. In order to overcome the problem of dictatorship of the present in intertemporal evaluations we restrict the class of discount factors, by imposing a limit on the decrease of the weight attached in the current evaluation, between the outcomes of two future adjacent periods. The restricted time dominance theorems provide parametric dominance conditions that make explicit the policy maker's trade-off between current and future periods and the willingness to postpone her myopic judgement. We show that these conditions can be summarized by a single cutoff point that can be interpreted as the maximal decrease in the discount factor, which guarantees unanimous dominance for the class of intertemporal preferences considered.

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# Measuring returns to Education and decomposition of rural-urban Inequality: Evidence from Senegal

Abdoul Aziz Junior Ndoye Session 3.3

In this study, recently developed techniques for unconditional quantile regression are employed to measure both changes in the return to education across quantiles and rural-urban inequality decomposition in consumption expenditure. These methods make use of the Re-centered Influence Function (RIF) to evaluate the impact of changes in the distribution of covariates on the quantiles of the marginal distribution of the outcome variable. The RIF regression provides a detailed decomposition of quantiles in the same way as means can be decomposed when using the conventional Oaxaca-Blinder method. These approaches are applied in a linear Mincer equation type to a nationally representative household survey, the Senegal Poverty Monitoring Report (ESPS, 2005). Results primarily

suggest that the rate of change in the return to primary education across quantiles are comparatively lower than those to secondary and tertiary educations. Results also suggest that the returns to education are not significant for lower quantiles in rural sectors. Finally, the high rural-urban inequality found in Senegal is attributed in particular to the difference in returns to various covariates. In contrast to the case of Vietnam, the difference in characteristics weakly contributes to the rural-urban inequality.

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### Cash Transfers and School Outcomes: the case of Uruguay

Mery Ferrando Session 3.3

This study investigates the impact of a cash transfer program in Uruguay -Plan de Atención Nacional a la Emergencia Social (PANES)- on a wide set of school outcomes such as repetition, promotion and absences, for students in grades one to four of secondary school. PANES was an anti-poverty program carried out in Uruguay from 2005 to 2007 and covered nearly 10% of total households. The evaluation is based on a rich dataset that combines information at individual level from secondary school registers and the program official records. Assignment to the program was based on a predicted poverty score using household characteristics. Exploiting this eligibility rule, the effect of the program is evaluated using a Regression Discontinuity Design (RDD). Results indicate that the program had a modest impact on school absenteeism. More precisely, among children belonging to beneficiary households, absences to school were reduced by roughly 0.5 days a month. This effect is only significant for girls and first graders. The program did not substantially affect other school outcomes such as promotion or repetition. This study also analyzes the potential underlying mechanisms through which PANES may have affected school outcomes. While the available data tends to indicate that no role was played by conditions attached to the program, it appears that the observed effect might be driven by a net increase on household income due to the program. Even though PANES has been extensively evaluated on a wide set of outcomes, there is no previous study that analyzes such a large set of school outcomes as I study here. This contrasts with most studies of conditional cash transfers, which focus on enrollment or attendance. Also, this study provides novelty in assessing the impact of a conditional cash transfer using information from secondary school records instead of reported data.

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### Child school performance and parental expectations in Uruguay

Gonzalo Salas, Andrea Vigorito Session 3.3

This paper aims to investigate the extent to which people's aspirations concerning to their offspring are affected by their surrounding circumstances and can be understood as a process of adptation. We assess the relation between parental aspirations in regard to the maximum level of schooling expected for their children and test the hypothesis of adaptation to past and present child school performance, expectations of the reference group of the parents and socio-economic characteristics of the household. We also analyze child expectations. This work can contribute to shed some light on the reasons explaining the differences among child school performance and drop-out rates by

socio-economic strata, which can in turn reproduce inequalities in the long run. In this sense, adaptation can take the form of "self-fulfilling prophecy". Hoff and Pandey (2003) found evidence for India that even younger people internalize discrimination and adapt their level of effort accordingly. Also, in previous work it has been remarked that parental expectations are an exogenous and a key determinant of child schooling, both in terms of completed years of education and on academic performance. At the same time, various studies have shown that reference groups influence the reported levels of expectations. The more similar the answers provided by the individual and the group that adheres, the less it will experience cognitive dissonance (Festinger, 1975). In that sense, the possibility of developing adaptive preferences by the parents is greater if there is a high correlation between the responses of the group and those of the individual. In this paper we test the presence of group and past trajectory adaptation for different socio-economic levels. Previous work for Uruguay with other databases (Burstin et al, 2010; Salas and Vigorito, 2011) shows that the adaptation process in the case of income mainly operates through subjective indicators of reference groups rather than through past trajectories. We present econometric evidence for Uruguay using a two waves panel of children attending public schools in 2006 and 2009, created in the framework of the regional assessments Segundo Estudio Regional Comparativo y Explicativo (SERCE). These datasets contain socio-economic information, child performance in mathematics and language tests and parental expectations on the educational attainment they expect their children to complete. This panel allows for a fairly accurate identification of the peer group of households analyzed, since the sample contained full groups. In this way, we can identify the reference group of adults from the characteristics of adults in charge of the group of classmates of each child. Parents share a set of activities that take place at the school, interact with each other and live in the same neighborhood to which the school belongs. In order to test the adaptation hypothesis we follow the methodology used by Burchardt, 2005, Di Tella and Mc Culloch, 2008 and Deaton, 2008. We test whether a child's academic performance in language and mathematics is the result of his/her characteristics, household socio-economic background and parental expectations. We also test whether, in turn, parental expectations are conditioned by past school performance of their offspring. On this basis, we assess to what extent parental expectations influence the academic performance of their children or causality goes in the opposite way. We provide estimates by household socio-economic status, to assess whether adaptation processes follows a different path across population groups. To investigate the reference groups effects, we include fixed effects of the peer groups (Lavy et al 2009; Halliday et al, 2007) and also test for potential endogeneity between individual and group performance. Our findings indicate that adaptation of parental expectations mainly operates through the interaction with the peer group, although there is a mild effect of the past academic trajectory of the child.

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### Wo(Men) At Work? The Impact Of Cohabiting And Married Partners' Earnings On Women's Work Hours

Doreen Triebe Session 3.4

This study investigates the determinants of women's labor supply in the household context. The main focus is on the effect of a change in male partner's wages on women's work hours. This is linked to the broader question of whether married and cohabiting women make different economic decisions and respond differently to changes in their partners' wages. In addition, this study seeks to connect the working behavior of married and cohabiting individuals to the "tax-splitting" benefit for married couples. To provide a complete picture of working behavior within households, I analyze both women and men using data from the German Socio-Economic Panel Study (SOEP) from 1993 to 2010. The methodology for the main analysis relies on fixed effects regression. The main estimation results suggest that married women work less on the labor market and further, an increase in partner's wages results in a negative and significant effect on married women's work hours. The marital status of men, on the other hand, has

no significant impact on their work hours.

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### Wealth distribution within couples and financial decision making

Markus M. Grabka, Jan Marcus, Eva Sierminska  $Session\ 3.4$ 

While most studies on wealth inequality focus on the inequality between households, this paper examines the distribution of wealth within couples. For this purpose, we make use of unique individual level micro data from the German Socio-Economic Panel (SOEP). In married and cohabiting couples, men have, on average, 33,000 Euro more net worth than women. We look at five different sets of factors (demographics, income, labor market, inheritances, financial decision making in the partnership) that might explain this wealth gap. We find that all factors contribute to the explanation of the wealth gap within partnerships, with inheritances and income being particularly relevant. Furthermore, we find that specific characteristics (e.g. self-employment, no migration background, inheritances, high income) that decrease the wealth gap for women increase it for men. For men the respective coefficients are even stronger in absolute terms. When examining intra-partnership financial decision making, we find the gap to be significantly smaller when the female manages the money and larger if the male partner has the last word in financial decisions.

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### Intra-household Income transfer: from who to who? The Spanish Retirement Pensions

Ignacio Moral, Antonio Heras Session 3.4

This work presents an empirical analysis using Spanish data on the adequacy of Social Security and transfers that occur within the household among retirees and other members of the household. The results show a clear difference to the relative poverty risk for male cases (27%) and female (66%), reflecting the low level of adequacy of the Spanish social security system to avoid a risk of social exclusion in this group. Furthermore, our estimates show that retirees are receiving massive income from other household members. However, the behavior is very different depending on certain variables, especially related with gender. Women are receiving massive transfers of other household members. Other variables taken into account in the study are the size and household income or age pensioner.

# Does the Indian Employment Guarantee reduce households' risk exposure? Assessing the effects of the NREGA on crop choice

Esther Gehrke Session 3.5

This paper assesses the role of risk constraints in households' production decisions. It shows that the introduction of the Indian Employment Guarantee affects input allocation in agricultural production, particularly crop choice, by reducing households' uncertainty about future income streams. Taking advantage of the fact that the Indian National Rural Employment Guarantee Scheme was rolled out in three phases, I show that the key innovation of the Indian public works programme, namely giving households the right to work, encourages agricultural households to increase the share of risky but profitable crops in their portfolio. By triggering considerable increases in the fraction of inputs allocated to more profitable crops, especially to cotton, chillies and turmeric, the NREGA has the potential of raising the productivity of small and marginal farmers. The results of this paper are robust to a range of alternative specifications and to the inclusion of weather data as well as to changes in household income. Linking the Employment Guarantee to risk considerations is the key innovation of this paper. Therewith, it makes two contributions. First, it contributes to the empirical evidence on the validity of the theory of decision making under uncertainty. Second, it provides additional theoretical and empirical evidence to the ongoing debate on the effects of the NREGA on agricultural productivity.

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# Poverty, Access to Credit and Absorption of Weather Shocks: Evidence from Indian Self-Help Groups

Timothee Demont Session 3.5

In developing countries, most poor households experience extremely variable income because of the combined effects of a large exposure to climatic, economic and policy shocks, and a lack of appropriate insurance devices. Extreme weather events, in particular, are projected to become more frequent in a warming climate, leaving rainfed agriculture and large populations in developing countries at great risk. In this context, reliable access to finance in general and credit in particular can potentially bring welfare-improving consumption-smoothing opportunities. This paper studies the extent and the nature of the reactions to rainfall shocks that can be attributed to microfinance participation for rural households in Jharkhand, Northern India. We exploit first-hand panel data about members of Self-Help Groups (SHGs) and control households, coupled with meteorological data at the district-level. We find that agricultural production and income, consumption patterns and access to credit are all very dependent on the monsoon quality. By contrast, member households enjoy a stable access to credit, opening the possibility of short-term consumption smoothing thanks to higher borrowing following a bad rain shock. Moreover, SHG membership also allows some ex-ante risk mitigation, notably by diversifying the crop mix towards vegetables. Nevertheless, we suggest that the specific savings policy of the Indian SHG system, while ensuring its strong resilience in face of adverse climatic shocks, might hinder its insurance power.

# Sectorial shifts and Inequality. How to relate macroeconomic events to inequality changes

Carlos Villalobos Barría Session 3.6

This paper presents a way to explore how macroeconomic shifts may cause inequality changes. It is based on the backwardness observed in certain sectors in developing countries. It shows why highly dualistic economies tend to be more unequal than economies with flexible and integrated labour markets. Assuming that an inter-sectorial wage gap exists, this methodology allows control over the direct impact on inequality changes caused by macroeconomic changes that affects the relative competitiveness between the tradable and non-tradable sectors. The methodology aims to find the wage gap change (in log units) taking place between two points in time, which is not dependent on the distribution of endowments and their returns of the employed population (observed and unobserved). The decomposition methodology shows to be consistent under few assumptions (log normal distribution of earnings and inter-sectorial stochastic dominance) and was tested using observed and simulated data. We suggest a channel through which trade integration can affect the wage inequality in a context of capital-skill complementarity and imperfect mobility of workers supporting the findings by Devillanova et al. (2010). Since backwardness is a source of inequality, policies oriented to encourage labour mobility appear to be highly desirable in such economies.

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# How much inequality is desirable for a country? A framework for the relationship between income inequality and economic growth

Jorge Charles-Coll Session 3.6

This paper provides a conciliatory argument to the debate over the relationship between income inequality and economic growth by proposing that the disparities in most previous empirical studies derive from the fact that they have not accounted for the level of inequality as a factor that can define the sign of the relationship. An inverted "U" shaped relationship is demonstrated, showing that low levels of inequality exert a positive correlation with economic growth while high levels depict a negative one. Additionally, an Optimal Rate of Inequality (ORI) is proposed, in which growth rates are maximized in comparison to other inequality levels, and where the economy is released from any distortion generated by high inequality or high redistribution (and the associated taxation levels). Moreover, the model proposes the existence of an inequality trap which can explain why some countries are impeded to effectively reduce inequality levels or need more redistributive efforts to do so. Empirical evidence from a broad panel of countries as well as a bibliometric analysis is presented to validate these propositions. The main policy implication is that inequality does matter for growth, policies intended to promote growth should consider the growth enhancing properties of reaching an optimal inequality level.

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Regional Income Convergence in Portugal (1991-2002)

Gertrudes Guerreiro Session 3.6

Our research aims to address the problem of inequality in income distribution from a different perspective than the usual. We intend to verify if geography influences the pattern of inequality, that is, if the standard of living varies from region to region and if, in the process of growth, spatial units in Portugal have been converging in terms of most relevant variables, such as income. We search the answers to these questions by introducing the treatment of convergence between smaller territorial units, the municipalities as individuals. We intend to evaluate convergence or divergence in income growth and test empirically the theoretical hypothesis that  $\beta$ -convergence, although necessary, is not a sufficient condition for  $\beta$ -convergence. To study convergence, we use information about GDP and wages for NUTS III regions, and wages for municipalities. We observe spatial dependence between municipalities, so we estimate spatial econometric models to test convergence. With regard to conditional convergence between municipalities, the model most appropriate is the one which includes in the explanatory variables the weight of primary sector employment, leading us to conclude that this variable distinguishes the "steady state" of the small economies. Variables like the activity rate and percentage of active population with higher education also reveal highly significant on the growth of wages, reflecting the different contexts of the labor market at regional level.

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# The dynamics of personal income distribution and inequality in the USA Oleg I. Kitov, Ivan O. Kitov Session 3.7

We model the evolution of age-dependent personal money income distribution and income inequality as expressed by the Gini ratio. In our framework, inequality is an emergent property of a theoretical model we develop for the dynamics of the individual income growth with age. The model relates the evolution of personal income to the individual's capability to earn money, the size of her work instrument, her work experience and aggregate output growth. Our model is calibrated to the single-year population cohorts as well as the personal incomes data in 10and 5- year age bins provided by the Census Bureau. We predict the dynamics of personal incomes for every single person in the working-age population in the USA between 1930 and 2011. The model output is then aggregated to construct annual age-dependent and overall personal income distributions (PID) and to compute the Gini ratios. The latter are predicted very accurately - up to 3 decimal places. We show that Gini for people with income is approximately constant since 1930, which is confirmed empirically. Because of the increasing proportion of people with income between 1947 and 1999, the overall Gini reveals a tendency to decline slightly with time. The age-dependent Gini ratios have different trends. For example, the group between 55 and 64 years of age does not demonstrate any decline in the Gini ratio since 2000. In the youngest age group (from 15 to 24 years), however, the level of income inequality increases with time. We also find that in the latter cohort the average income decreases relatively to the age group with the highest mean income. Consequently, each year it is becoming progressively harder for young people to earn a proportional share of the overall income.

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Chronic and Transitory Poverty in the Kyrgyz Republic: What Can Synthetic Panels

#### Tell Us?

Mira Bierbaum, Franziska Gassmann Session 3.7

In this paper we use data from the annual Kyrgyz Integrated Household Survey (KIHS 2005, 2008, and 2010) to analyse chronic and transitory poverty. Although the KIHS includes a rotating panel - only one quarter of households are replaced in each survey round -, its quality is not sufficient for the calculation of robust indicators over time. Intransparent fluctuations in replacement rates point to a non-systematic process, and attrition is likely to be non-random due to failure to keep track of moving households (Esenaliev, Kroeger and Steiner, 2011). We therefore create a synthetic panel based on repeated cross-sections to investigate poverty dynamics between 2005 and 2010, following the approach proposed by Dang, Lanjouw, Luoto, and McKenzie (2011) that yields estimates of lower and upper boundaries on transitions into and out of poverty. Compared to other pseudo-panel approaches, the methodology requires few modelling and error structure assumptions, is less data demanding, and allows analysing mobility both between and within cohorts or groups. Estimates of chronic and transitory poverty derived from the actual and synthetic panel are largely consistent, and differences are at least partly due to the described weaknesses of the existing panel. Approximately three quarters of the poor in 2010 have been chronically poor for a minimum of five years. Two major determinants are identified. First, residence in regions characterized by adverse topography and low levels of human capital hinders poverty escapes. Second, poor work opportunities, e.g. employment in informal, low-paid sectors with high income-insecurity, are associated with persistent poverty. Results also indicate that poverty exit is not sustainable for many households confronted with economic crises.

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### Intragenerational Income Mobility: a Nonparametric Estimate

Davide Fiaschi, Irene Brunetti Session 3.7

This paper analyses the level of intragenerational income mobility in Italy. We provide two novel methodologies to estimate income mobility based on nonparametric methods, and we apply it to the analysis of mobility of a sample of Italian individuals (between 16 and 65 years old) from the Survey on Household Income and Wealth (SHIW) by the Bank of Italy in the period 1987-2010. First, a linear specification of the Markovian model is estimated removing the assumption of no serial correlation in the error term suggesting a low level of income mobility; second, a nonlinear specification of Markovian model is estimated providing both local and global measures of income mobility. Income mobility appears to be low; in particular it reaches a minimum in the middle of income distribution and maximum values at the extreme bounds, with an income elasticity ranging from 0.4 to 0.8 in the relevant range of income (0.5-2). Moreover, from 1987- 1998 to 2000-2010 income mobility has increased over time, in particular in the middle of distribution.

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#### Polarization and Economic Power

Rosa M. García-Fernández, Daniel Gottlieb, Federico Palacios-González

Session 4.1

The twin concepts of alienation and identification have dominated the literature of polarization recently by stressing particularly the importance of the cohesion of the poorest class in the conflict around income distribution and its redistribution. The higher the within group variance, which is inherently higher in a crowded poor group, and therefore the higher the variance between groups, the less stable is the society considered to be. Following a similar logic, it is typically found that the richer the groups get, the lower becomes the adhesive power of their component of within-group variance and so forth for richer and richer groups, if they are considered big enough to form a group in the first place. This is where we believe the aspect of economic power should come into the analysis of income polarization. In this paper we analyze the effect of attributing changing weights to individuals, depending on the economic power they command. We require the suggested polarization index to maintain the basic axioms spelled out in the mainstream literature on polarization as well as desired properties of normalization and non-dimensionality. As in a previous article by the same authors the number and sizes of income classes are optimally determined by use of a multi-resolution analysis that detects sub-populations of incomes concentrated around an optimally determined number of poles. The new ideas are applied to Israeli income data over the years 1998 to 2011.

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### On A Multidimensional Diversity Ranking With Ordinal Variables

Mariateresa Ciommi, Casilda Lasso de la Vega, Ernesto Savaglio Session 4.1

In the last ten years, the measurement of diversity has become an increasingly important issue in the literature. On measuring diversity, two different approaches have been proposed. The first one assumes that the individuals in the population are exogenously classified into groups. Then diversity relies on the percentage of individuals belonging to each group. The second one defines diversity as the aggregation of diversity between any two individuals by introducing a distance between pairs. This paper assumes this viewpoint. An axiomatic characterization of a family of diversity ordering based on the counting approach is carried out. These orderings are founded on two very straightforward axioms: monotonicity and alpha-separability. Finally, an empirical application based on EU-SILC data for 15 European countries for 2004 and 2009 completes the analysis of diversity.

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#### Ethnic distribution, Effective power and Conflict

Matija Kovacic, Claudio Zoli Session 4.1

Ethnic heterogeneity can potentially be related to the occurrence of conflicts with long-lasting economic effects. Two main measures of ethnic heterogeneity are employed in the econometric literature on ethnic diversity and conflict: the Gini's heterogeneity or fractionalization index and the discrete polarization index. However, still no broad consensus is reached on which distributional aspect of ethnic diversity is associated with the outbreak of conflict. In this paper we argue that the relative importance of each pattern of ethnic diversity depends on the

trade-off between groups' power and between-groups interaction that is determined by the features of the population distribution across ethnic groups. Following the Esteban and Ray's (1994) approach to social antagonism, we axiomatically derive a parametric class of indices of conflict potential that combines the groups' effective power and the between-groups interaction. Differently from Esteban and Ray (1994), we do not treat each ethnic group as a unitary actor but we assume that groups can either act individually or pool their strengths together through a coalition formation. Moreover, we assume that the effective power of a group depends not only on its own relative size but also on the relative size of all the other groups in the population. We show that for certain parameter values the obtained indices reduce to the existing indices of ethnic diversity, while in general the derived indices combine in a non-linear way three different aspects of ethnic diversity, namely the fractionalization, the polarization and the ethnic dominance. The power component of the extreme element of the class of indices is given by the relative Penrose-Banzhaf index of voting power calculated over the shares of populations associated to each ethnic group. The results from our empirical exercise show that the index based on Penrose - Banzhaf voting power outperforms the existing indices of ethnic diversity in the explanation of ethnic conflict onset. This evidence is robust to the inclusion of a larger set of regressors, geographical and time controls, and several political variables.

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### Wealth Inequality, Unequal Opportunities and Inefficient Credit Markets

Giuseppe Coco, Giuseppe Pignataro Session 4.2

This paper investigates the impact of heterogeneous wealth on credit allocation from an egalitarian opportunity and an efficiency point of view. Due to DARA, poor entrepreneurs, other things equal realize better projects. This notwithstanding, due to bidimensional hidden information they may be rationed out or obtain a loan only at the cost of cross subsidizing bad projects realized by rich entrepreneurs. In the first case inefficiency arises in the form of insufficient investment, in the second in the form of inefficient projects being realized. An egalitarian redistribution of endowments may lead to perfect screening, no inefficiencies in the allocation of credit and EOp.

Link to the PDF file

### Equalization of Opportunity: Definitions and Implementable Conditions

Francesco Andreoli, Arnaud Lefranc

Session 4.2

This paper develops a criterion of opportunity equalization, that is consistent with theoretical views of equality of opportunity. Our analysis rests on the characterization of inequality of opportunity as a situation where some groups in society enjoy an illegitimate advantage. In this context, equalization of opportunity requires that the extent of the illegitimate advantage enjoyed by the privileged groups falls. Of course, for the judgement over opportunity equalization to be robust, one should require that the assessment of the change in the advantage of the advantaged group be satisfied for the broadest class of individual preferences. We formalize this criterion by resorting to a decision theory perspective and we derive an empirical condition for equalization that is defined on the sole basis of observed opportunity distributions. We discuss observability constraints and offer an empirical testing procedure to implement this condition. Lastly, we apply these criteria to the study of the equalizing impact of educational policy in France.

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# A general non-parametric approach to the measurement of inequality of opportunity Juan Prieto, Rafael Salas, Juan Gabriel Rodríguez Session 4.2

We provide a general non-parametric approach to the measurement of inequality of opportunity (henceforth IO), based on the Lorenz criterion and a bistochastic non-parametric estimated benchmark distribution. As a consequence, several measures consistent with the Lorenz criterion can be rationalized. Moreover, we adopt a cardinal view to decompose overall inequality into a gain due to IO-free income distribution and a loss due to IO, without any restriction on the intervals. Hence, more robust tests can be applied. The standard ex-post decomposition is seen as particular case.

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### Urbanization and Health Inequalities in Developing Countries

Isabel Guenther, Guenther Fink, Kenneth Hill Session 4.3

Continued population growth and increasing urbanization have led to the formation of large informal urban settlements in many developing countries in recent decades. The high prevalence of poverty, overcrowding and poor sanitation observed in these settlements, commonly referred to as "slums", suggest that slum residence constitutes a major health risk for children. In this paper, we use data from 191 DHS surveys across 73 developing countries to investigate this claim empirically. The data analyzed suggest that compared to children living in rural areas, children residing in slums have significantly better health outcomes, but fare worse than children in better-off neighborhoods of the same urban settlements. A large fraction of the observed health differences appears to be explained by pronounced differences in maternal education, household wealth and access to health services across residential areas. Once we control for these characteristics, children growing up in the slums and better-off neighborhoods of smaller urban settlements show levels of morbidity and mortality that are not statistically different from those of children living in rural areas; children living within large urban agglomerations (irrespective of slum or formal residence) fare better with respect to mortality and stunting than rural children, but not with respect to short-term morbidity outcomes.

### Regional Inequality in benefits in kind: The case of Italian National Health Service

Roberto Fantozzi Session 4.3

There are many different items which concur, directly or indirectly, to form the income of a person, or a household. This work examines how the income distribution in Italian regions changes when the value of health care expenditure is included in disposable income. Using the Abul Naga and Yalcin (2008) index, this paper extends previous analyses, focusing the investigation on a regional level. The aim is to obtain a matrix education- health, which improves the classical method, insurance value approach, based solely on age and gender in order to allocate the value of health care services. Applying the new method on IT-SILC 2010 data, I will show that the health in kind transfer, on the one hand reduces the total inequality, but on the other it increases the inequality between regions.

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### Housing deprivation and health: A European comparison.

Stefan Angel, Benjamin Bittschi Session 4.3

Poor housing conditions have long been recognized as a source of health deprivation, which is supported by various cross-sectional studies. However, empirical evidence scrutinizing that relationship with panel data is still surprisingly sparse. In particular, there is lacking evidence in a cross-country comparative manner. Furthermore, while the (causal) relationship between bad housing and health is established at the individual level there is no research linking the micro level with macro level outcomes to investigate which policy measures possibly moderate the effect between housing and health. Both research gaps are addressed in our article. First, we use EU-SILC panel data to estimate 2-way fixed effect logistic regression models in order to identify a causal effect of bad housing conditions on health. Second, we apply multi-level models to the same data in order to assess the influence of different policy measures on effect heterogeneity (slope-as-outcome models) and on between-country and region variability of the dependent variable (intercept-as-outcome models). Preliminary results show that despite controlling for the usuals socioeconomic variables living in bad housing conditions increases significantly the likelihood of reporting a bad/very bad health status and is therefore a further decisive issue of the socioeconomic status. Concerning the second research focus, preliminary results demonstrate that there is also a significant effect of country fixed effects on self-reported health. Around 10% of the variability in the dependent variable can be attributed to country specific factors.

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Public good provision and communication in the household. A model and some evidence from Cameroon.

Roberta Ziparo Session 4.4

In first-hand data from Cameroon, we observe that household members often contribute jointly to public goods, while at the same time hiding income to each other. The theoretical literature on intra-household decision does not give any prediction of why this should happen. To fill this gap, we study how intra-household allocations are affected when we relax the hypothesis of symmetric information among spouses: we assume that one spouse does not observe the income realization of the partner, allowing the possibility of hiding part of one's income. When both spouses contribute to the public good and can make transfers to each other, a partition equilibrium arises: the spouse whose income is privately observed reveals partially his income realization, such as to make his preferred contribution incentive compatible. The communication process is only partially informative so as to reduce the amount of free-riding of the other spouse. Ex-ante total public good contribution increases.

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### Land distribution and economic development: Small scale agriculture in developing countries

Harriet Mugera, Karfakis Panagiotis Session 4.4

Small scale farmers constitute about half of world's hungry people and include three quarters of Africa's malnourished children. The appropriate identification and characterization of this population and the constraints it faces, is essential for the design and the successful implementation of safety nets and to properly target their needs and effectively include them in agricultural development strategies.

We calculate four land cultivated thresholds which we then use as a measure to classify households that were surveyed in four developing countries. We empirically estimate the magnitudes of the small-holders, their characteristics as well as their poverty status using the four thresholds. Our analysis provides empirical evidence that small scale farmers still prevail in terms of population distribution in rural area settings in developing countries. Small scale farmers heavily rely on farm income as their form of livelihood and heavily contribute to the rural income. We also find that land is unequally distributed among small and large scale farmers in the rural households. Small scale farmers are also have the highest poverty rates in these rural settings.

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### Lasting Welfare Effects of Widowhood in Mali

Dominique van de Walle Session 4.4

Widows and their children are largely hidden from view in the data used to inform social policy discussions in Africa. Data for Mali reveal that households headed by widows have significantly lower living standards than other households in rural and urban areas. Furthermore, the welfare difference persists even after widows are absorbed into male headed households. An examination of individual measures of well-being further reveals that, relative to other women, worse outcomes for ever-widowed women persist through remarriage. These detrimental effects are passed on to children, suggesting an intergenerational transmission of poverty stemming from widowhood.

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### Commuting and Shopping: Determinants of City Income Structure

Babak Somekh

Session 4.5

This paper demonstrates how firms' pricing strategy and determinants of household location can interact to determine city structure. We go beyond previous work on spatial income segregation by endogenizing the tradeoff between households' choice of location and shopping behavior, as well as solving for the firms' choice of price. In this city, consumers and firms live on a continuous line interval. Our model consists of two types of firms; many high-cost perfectly competitive "Corner Stores" located in the Central Business District, and one low-cost "Superstore", choosing its location and price strategically. We use this setup to determine some of the factors that can contribute to the isolation of low-income consumers from affordable shopping locations. In addition we tie-in our results to the industrial organisation literature by considering the impact of city income structure on the pricing decision of firms.

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### Diffusion of car ownership and use in France since the mid-70's

Roger Collet, Jean-Loup Madre, Elise Boucq, Laurent Hivert  $Session\ 4.5$ 

For each quartile of income per consumption unit, annual time-series have been estimated from panel surveys, with annual waves of observations since 1974: INSEE Households' Continuous survey from 1974 to 1994, Sofres "Parc-Auto" panel survey since 1994. In these data sources, household behaviour is described through: car ownership (percentages of households with at least one car, and of multi-car households, average number of cars per adult over 18), car use (annual mileage per household or per car).

In mid-70's, car ownership and use were quite low for the poorest income quartile, but the gap has much decreased with the three higher income groups, which have a more homogeneous behaviour. Thus, multi-car ownership, which is mainly structured by geographic and demographic determinants, has slowed -but not reversed- the social diffusion of automobile. After a period of stability between the mid-80's and the early 90's, the social diffusion of automobile has started again like in the 70's, especially for low-income groups and in low-density areas where no alternative to car use is available. However, the Q4/Q1 index has almost stabilised in the 2000's, at national level as well as in Paris region, showing that this diffusion seems to reach its limits.

As the curves representing car ownership (number of cars per adult) and car use (annual mileage per household) seem to become quite horizontal during the most recent period, logistic curves have been estimated for each quartile of the distribution of households over income per consumption unit, according to time, then to real income. Saturation thresholds are estimated, as well as the date of inflection. The relationship between temporal elasticities (for each quartile) and cross-sectional income elasticities, which could be considered as a measurement of inequality at each point in time, will be discussed.

### Is there a relationship between income inequality and credit cycles?

Tuomas Malinen  $Session \ 4.6$ 

Recent studies by Atkinson (2011); Rajan (2010); Kumhof and Ranciére (2010); Bordo and Meissner (2013) have assessed the relationship between income inequality and financial stability. Bordo and Meissner found that changes in income inequality do not have an effect on the growth of credit. We extend their study by assessing the relationship between levels of income inequality and bank credit. We find that the relationship between inequality and credit is long-run, i.e. trending in nature and that removing this relation with first differencing will lead to biased inference. In conclusion we find that income inequality is associated with increased leverage in the economy.

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# Local banking development and income distribution across Italian provinces Alexandra D'Onofrio, Pierluigi Murro Session 4.6

What are the effects of local credit institutions on the distribution of income? Why should local banking development matter for the level of inequality? We focus on how different dimensions of banking development and other characteristics of 103 provinces in Italy affect the level of inequality. Using panel estimation and data over the period 2006-2010, we find that local banking development has a significant negative effect on the Gini coefficient and other measures of inequality, i.e. higher banking development is associated with lower inequality. When considering Italian macro-areas sub-samples (North, Center, South), the result is significant only for the North; thus suggesting the existence of a nonlinear relationship between financial development and income inequality, depending on the level of development.

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### Saving Behavior under Upward Looking Comparisons in Germany, 1995-2011 Kai Daniel Schmid, Moritz Drechsel-Grau Session 4.6

Using household data from the German Socio-Economic Panel between 1995 and 2011 we examine household saving behavior and its determinants, in particular upward looking comparisons in the light of rising income inequality. We argue that changes in the saving rate of households are not only driven by changes in own disposable income but are also influenced by the income of richer households. As a consequence both absolute and relative income changes determine the development of household saving rates. Our findings give valuable insights for the analysis of the evolution of the aggregate saving rate and help explain why income inequality has increased considerably stronger than consumption inequality. In addition, our study provides microeconometric support for basic behavioral assumptions within recent research that examines the effects of rising income inequality for macroeconomic instability.

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### Decomposing household wealth portfolios across countries: An age-old question?

Eva Sierminska, Karina Doorley Session 4.7

Using harmonized wealth data and a novel decomposition approach, we show that cohort effects exist in the income profiles of asset and debt portfolios for a sample of European countries, the U.S. and Canada. We find that younger households' participation decisions in financial assets are more responsive to their income than older households. This result has implications for policy setting during times of financial unease. Additionally, younger households' participation decisions respond more to to the institutional setting than mature households. Given participation, the level of financial assets and mortgage debt varies more in response to the institutional setting for the younger cohort than the older one. The opposite is true for housing wealth with the older cohort's housing portfolio being more responsive to institutions than the younger one. These findings have important implications, indicating a scope for policies which promote participation for young households and which promote optimal portfolio allocation for mature households.

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### Age-Specific Education Inequality, Education Mobility and Income Growth

Petra Sauer, Jesus Crespo Cuaresma, Samir KC Session 4.7

We construct a new dataset of inequality in educational attainment by age and sex at the global level. The comparison of education inequality measures across age groups allows us to assess the effect of inter-generational education mobility trends on economic growth. Our results indicate that countries which are able to reduce the inequality of educational attainment of young cohorts over time tend to have higher growth rates of income per capita. This effect is additional to that implied by the accumulation of human capital and implies that policies aiming at providing broad-based access to schooling have returns in terms of economic growth that go beyond those achieved by increasing average educational attainment.

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### The Dynamics of Wealth Distribution in a Simple Model of Economic Growth with Altruistic Consumers

Kirill Borissov Session 4.7 We consider a model with consumers who care about their consumption relative to others and the bequest they leave to their offspring. We show that if the parameter accounting for importance of positional concerns is lower than a certain threshold, then wealth and incomes of all agents converge irrespective of the initial distribution of wealth, whereas if it is higher than the threshold, then all the capital is eventually owned by the households which are the richest from the outset.

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#### Stochastic Dominance in Polarization

Andre-Marie Taptue Session 5.1

Poor distribution of income leads to a low level of social welfare. Moreover, it can generate social tensions if it leads to the formation of antagonistic groups. This situation arises because poor distribution of income induces the decline of the middle class in favour of two extreme groups of poor and rich. When this arrives, it is said that society is polarized. The two groups may involve in social conflict where the rich want to protect their interest and where the poor want to protest against a disadvantage social order. Hence the importance of comparing the degrees of polarization in two income distributions to choose the one to apply. Sometimes, comparison is affected by an arbitrary parameter in the polarization index. To avoid arbitrariness in choosing parameter that influences the conclusion, we propose the approach of stochastic dominance in polarization for comparing the degrees of polarization in two distributions of income . We apply our methodology to data of five countries that are USA, Canada, Mexico, Italy and Greece drawn from the Luxembourg Income Study databases.

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### Bipolarization measurement with recursive between-group Gini indices

Gaston Yalonetzky Session 5.1

Based on a relative second-order polarization curve, an index of bipolarization is proposed. The index is an average of differences between the mean of the top 50% and the mean of the bottom 50% of populations of different sizes. The mean differences are computed for each iteration in which the most extreme values are subtracted recursively (until only two values remain). Therefore the index is a function of several between-group Gini indices. It satisfies the desirable bipolarization properties laid out in the literature. Inspired by the index, an alternative representation of the bipolarization ordering, based on between-group Gini indices, is proposed. An empirical illustration is provided using a Peruvian Panel Dataset.

### Segregation, Informativeness and Lorenz Domination

Casilda Lasso de la Vega, Oscar Volij Session 5.1

It is possible to partially order cities with two ethnic groups according to the Lorenz criterion. Similarly, it is possible to partially order cities according to the informativeness of neighborhoods about the ethnic groups of its inhabitants. We show the equivalence of these two orders for the two-group case.

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## The Many Dimensions Of Child Poverty: Evidence From The UK Millennium Cohort Study

Andrew Dickerson, Gurleen Popli $Session\ 5.2$ 

In this paper we use a multidimensional framework to characterize child poverty in the UK. We use the data from the Millennium Cohort Study to look beyond income poverty, and consider both the psychological (subjective) and material deprivations faced by children. We use the existing measures to robustly estimate both the multi-dimensional child poverty (MP) at a given point in time, and the evolution of MP over time. We also study the interdependence among the different dimensions of poverty and the evolution of these interdependences over time. In our analysis we do a number of sensitivity checks, such as the choice of dimensions, choice of weights used to combine the dimensions to obtain the overall index for MP, and the poverty cut-offs used across dimensions.

Link to the PDF file

# Comparing different poverty rankings: Evidence from Italian EU-SILC Dataset Sabrina Auci, Annalisa Castelli, Mariangela Zoli Session 5.2

This work contributes to the empirical literature on multidimensional poverty by exploring if there exists a relationship between the poverty status and the way individuals exploit their personal endowments. The basic idea is that differences in individual standard of living may be the result of different endowments as well as of different efficiency in converting personal resources into current levels of well-being. Differences in individual efficiency levels are estimated using the Stochastic Frontier Approach (SFA), a methodology traditionally used in the production theory. The individuals' ranking based on their "technical inefficiency" in producing income is then compared to other two rankings, based respectively on income and on a multidimensional indicator of deprivation. The empirical analysis is performed on cross-sectional data from the Italian component of European Statistics on Income and Living Conditions (EU-SILC, 2008).

### Extreme poverty has declined within the world, but what about non-extreme poverty?

Florent Bresson

Session 5.2

This paper deals with poverty decompositions into subgroups defined with respect to intervals of income. For instance, world poverty estimates by the World Bank often distinguish between the extreme poor whose income are lower than .25 a day (in PPP terms) and the other poor with income between .25 and .5 a day. Existing dominance conditions can tell whether overall poverty and extreme poverty have declined in a robust manner when comparing countries at two point of time, but they cannot say anything for the non-extreme poor. In the present paper we propose stochastic generalized restricted dominance criteria to perform robust poverty ordering when the focus is put on some interval of the poverty domain. Using generated data based on grouped data from World Bank's PovcalNet tool, the paper finally investigates whether the robust decline of extreme poverty around the world during the last decades was also accompanied by favourable changes in non-extreme poverty.

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#### Socioeconomic status and the dimensions of unhealthiness

Elizabeth Savage, Meliyanni Johar Session 5.3

There are many dimensions of health, some summary measures and other more specific indicators such as chronic conditions, physical and mental functionality and sensory capabilities. We often use one or several of these dimensions to depict individuals' health state. There is limited research investigating the consonance of the many dimensions of health, and how the relationship between them varies by individual characteristics like age and income. If there are cases in which the dimensions conflict with each other, a policy that increases health in one dimension may lower health in another. Furthermore, if the aim of policymakers is to foster individual wellbeing, identifying pivotal dimensions of health is important. In this paper we use information on drug consumption and an array of health limitations to reveal the dimensions of 'unhealthiness' and the severity of health limitations by age. We examine how both 'unhealthiness' and severity are exacerbated by economic deprivation. We use cluster analysis to define 'unhealthiness', and explore the within-class consistency across the various dimensions of health. The sample of over 265,000 individuals is derived from the 45 and Up Study of the NSW population aged 45 and over. For the youngest individuals, 'unhealthiness' is characterised by moderate to high mental distress, a poor physical health score (equivalent to having four major limitations in physical functioning), teeth health less than good and having been diagnosed with at least two chronic conditions. In comparison, except for mental health, the oldest individuals also suffer from these limitations, as well as being dependent on at least three different drug groups and two medical treatments. Higher economic status reduces 'unhealthiness' in general, but provides relatively small protection against mental illness, and vision and memory decline. The socioeconomic gap narrows with age.

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Estimation of the welfare impact of Seguro Popular in OOP health payments

Rocio Garcia-Diaz, Sandra G. Sosa-Rubi Session 5.3

We use the distributional characteristic approach, already use in commodity taxation (Ahmad and Stern (1991), Newbery (1995), Mayshar and Yizhaki (1996)) to provides an alternative to measure the impact of OOP health payments in terms of welfare. The distributional health impact measure gives special attention to the social welfare weights which results from different responses to changes in income of households. This helps to clarify the value judgments underlying the analysis and facilitates a sensitivity analysis of them. The measure is decomposable; therefore allow us to illustrate how the social insurance program impacts some policy relevant subgroups. We also propose a robust result to the selection of a particular welfare function by using OOP health payments dominance curves.

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# Long-Run Effects Of Public Expenditure In Education On Poverty And Health Marisa Hidalgo-Hidalgo, Iñigo Iturbe-Ormaetxe

Session 5.3

Household characteristics may have long-run effect on individual outcomes when adult. For instance, individuals who lived when young in households experiencing financial problems may be more likely to be poor when adults. Public intervention in education is one of the most important means by which governments try to soften these effects and to promote equality of opportunity. The objective of this paper is to check whether public expenditure in education may have an effect in reducing the probability of being poor when adult, and to what extent. Our main finding is that, public expenditure in primary education has a strong effect on raising individuals above the poverty line, on reducing the probability of suffering health problems when adults and on increasing school attendance beyond compulsory education.

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# History dependent growth incidence: a characterization and an application to the economic crisis in Italy

Flaviana Palmisano, Dirk Van de gaer Session 5.4

The aim of this paper is to propose an axiomatic characterization of an aggregate measure of growth that takes into account the initial economic conditions of individuals, through their position in the initial income distribution. The contribution of our work to the existing literature is twofold. The first is to provide a unifying framework for the derivation of an absolute and a relative measure of individual growth. The second is represented by the aggregation procedure which leads to a generalization of existing measures of growth. We apply our theoretical framework to evaluate the growth processes experienced by the Italian population in the last decade in order to investigate the history dependent distributional effect of the recent economic crisis.

Link to the PDF file

# Changes instead of levels? Reassessment of the relationship between inequality and subsequent growth using top income shares data

Elina Tuominen Session 5.4

We discuss the association between changes in inequality and subsequent growth, although majority of the empirical papers in this literature focuses on the relationship between the level of inequality and following growth. The reason for addressing this question stems from an interesting study by Banerjee and Duflo (2003). They find that changes in Gini in any direction are associated with lower growth in the following period. They also argue that nonlinearity might explain why the formerly reported estimates in the literature have varied substantially between different studies. Another widely discussed problem related to inequality-growth studies is that empirical models have suffered from low-quality inequality data. Our study contributes the inequality-growth literature in two aspects. Firstly, we use regression spline methods in addition to traditional approach. Secondly, we use recently published top 1% income share series as our inequality data. We find that the levels of top income shares are more closely related to growth than changes in these shares. We also suggest that inequality-growth relation depends on the level of development: positive relation between the level of top 1% shares and following growth can be found only at earlier stages of development process, and high level of top 1% shares is not positively correlated to growth in advanced countries.

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# The inequality possibility frontier: the extensions and new applications Branko Milanovic Session 5.4

The paper extends the Inequality Possibility Frontier (IPF) approach introduced by Milanovic, Lindert and Williamson (2011) in two methodological directions. It allows the social minimum to increase with the average income of a society, and it derives all the IPF statistics for two other inequality measures than the Gini. Finally, it applies the framework to contemporary data showing that the inequality extraction ratio can be used in the empirical analysis of post-1960 civil conflict around the world. The duration of conflict and the casualty rate are positively associated with the inequality extraction ratio, that is, with the extent to which elite pushes the actual inequality closer to its maximum level. Inequality, albeit slightly reformulated, is thus shown to play a role in explaining civil conflict.

### Time Deficits and the Measurement of Income Poverty: Methodology and Evidence from Latin America

Ajit Zacharias, Thomas Masterson, Rania Antonopoulos Session 5.5

The use of conventional poverty thresholds in evaluations of poverty is internally inconsistent and normatively problematic when some households suffer from time deficits related to household production that they cannot compensate via purchases of market substitutes. We develop a measurement framework that can overcomes the problems inherent in the conventional thresholds. Unlike the earlier work in this area, we explicitly incorporate intrahousehold disparities in the division of housework. We supplement our measurement framework with a microsimulation model that sheds light on the effectiveness of employment growth for poverty reduction when time deficits are taken into account. Our estimates for Argentina, Chile and Mexico indicate that the rate of income poverty using our measure is dramatically higher than the official rate. We also find that full-time employment for every employable adult reduces income poverty drastically; yet, but a substantial share of households would still remain income-poor by our measure.

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### The Effect of Expanding the Bolsa Família Program on the Time Allocation of Youths and Labor Supply of Adults

Lia Chitolina, Miguel foguel, Naercio Menezes-Filho Session 5.5

This paper evaluates the impact of the 2007 expansion of the Bolsa Família Program to families with youths aged 16 to 17 years (Benefício Variável Jovem) on the time allocation of youths and on the labor supply of adults. The differences-in-differences estimator was used to compare households among the poorest 20% with 16 years old members with households in the same income bracket with youths of 15 years of age. The results show that granting the benefit had a significant and positive impact on school attendance and on the decision of young people to study and work at the same time. The effects on school attendance were stronger for males and when the child was the youngest of the household. With respect to the labor supply of parents, a positive impact was found on the employment probability of the mother.

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### Entering the Vicious Circle: The Discouraging Effect of Unemployment

Alexander Plum

Session 5.5

In various empirical studies it is shown that the experience of unemployment itself increases the risk of future unemployment. Based on the German Socio-Economical Panel (SOEP), this paper shows that being unemployed has an additional negative effect: it increases the risk of discouragement and to drop out of the labor force. Becoming inactive is comparable with entering a vicious circle: the risk of staying out of the labor force is increased and the employment prospects are lowered compared to unemployment.

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### Pro-poor Growth in Turkey

Raziye Selim, Fahriye Yildiz Session 5.6

The objective of the study is to examine whether growth performance in Turkey is pro-poor over the post-2001 crises period or not. We focus on two sets of issues: first we study impressive economic growth performance of Turkey with public finance reforms and structural reforms and the decrease of the income inequality after these changes. Second we evaluate whether this rapid economic growth performance and inequality improvement creates pro-poor growth or these changes are insufficient for poverty reduction estimating the various pro-poor growth indexes in Turkey during the period of 2003-2009. We used Household Budget Surveys that is conducted by Turkish Statistical Institution. The income inequality in Turkey is analysed with the help of the main inequality measures and the income shares graph of virgintiles by using OECD equivalence scale. The changes in inequality in Turkey evaluated dividing whole period into two sub-periods namely 2003-2007 and 2007-2009, in the former period it is observed a declining inequality and in the latter period it is presented slightly increases in inequality. The poverty in Turkey is estimated using three different poverty measures, i.e., head count, poverty gap and squared poverty gap. Further, pro-poor growth is analyzed by the help of Kakwani and Son (2004)'s method by the way of poverty decomposition of growth and inequality. Thus growth process is pro-poor only at the end of first sub-period namely 2006 and 2007.

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#### Globalization and Social Stratification

Nathalie Chusseau, Joël Hellier Session 5.6

From a model in which individuals differ in their skill and capital endowments, we analyse the impact of globalization upon social stratification in advanced economies. We make a distinction between North-North and North-South globalization. The first generates tax competition and the second a move in income distribution in favour of capital owners. We show that the economy is divided between four types of households: the excluded, the rentiers, the 'classical' (whose working time increases with the real wage) and the 'non-classical' (whose working time decreases with the real wage). Globalization modifies social stratification. The group of rentiers expands and the group of classical households shrinks. When tax competition is sharp, the number of excluded households augments. Finally, the model provides new explanations for the fast rise in the pay and stock option allocation to top executives.

### Globalization and the Working Poor

Joël Hellier, Ekaterina Kalugina Session 5.6

This paper analyses the effects of globalisation on the incidence of in-work poverty in advanced European countries between 2005 and 2010. In particular we make a distinction between the value of trade with developed countries and with emerging countries. Using the EU Statistics on Income and Living Conditions (EU-SILC), macro-data from Eurostat and the CHELEM database (CEPII), we find evidence of a distinct effect of globalization on working poverty. As expected from the theoretical literature, we find that imports of manufacturing from emerging countries has positive and significant effect on in-work poverty, whereas the effect of trade with developed countries is non-significant.

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### Intergenerational transmission of human capital: parents' characteristics and their impact on the child's educational choice

Luna Bellani Session 5.7

A growing strand of the economic literature studies the extent to which socioeconomic status is transmitted from one generation to the next. Human capital, and it subsequent impact on earnings, is one of the main channels through which this transmission operates. This paper investigates both theoretically and empirically the impact of parents' education on their children's educational attainment. A theoretical framework describing the mechanisms behind this transmission is defined, in which altruistic parents contribute to their child's human capital formation through time spent helping at a primary stage of the education process. While the educational attainment is the child's decision, this parental intervention lowers its effort. On the one hand, more educated parents provide help of higher quality, which increases the child's incentive to study. On the other hand, this effect may be counterbalanced by the fact that the opportunity cost of help (i.e. their hourly wage) is higher for more educated parents. This setting provides a particular case of voluntary subscription to a family public good, in which transfers are not lump sum and the level of public good eventually produced is the result of a third agent's optimization (the child). The objective of this theoretical exercise is to provide a better understanding of parents interactions in the transmission of human capital, and to analyze the effect of the distribution of parents education and child's ability in these interactions. The model gives rise to predictions, which are empirically tested using a structural econometric model based on a system of nonlinear equations on data from an original cohort survey (MAGRIP) containing informations on parental education together with cognitive skills of children at the end of primary school. Our structural estimations suggest that each parent's effort tend to increase with his own education, to decrease with the one of his/her spouse and with child's ability. Parental inputs, given by the quantity and the quality of their efforts, have a positive effect on the child's first educational outcome and finally her first level of education significantly impacts her final educational outcome. This level thus increases with child's ability and with parental education.

### Educational mobility - an agent based approach

Florian Wendelspiess Chávez Juárez Session 5.7

This paper develops a model aiming at reproducing the mechanisms generating the high intergenerational correlation in education and therefore the low educational mobility we can observe in many countries, particularly in Latin America. The model considers two main mechanisms: the biological transmission of ability and the economic environment of the children. Besides the core mechanisms several empirical regularities such as an education dependent fertility or assortative mating are taken into account. Considering such empirical evidence in the model is achieved by using agent based modeling techniques. The model is calibrated for the Latin American case - using data from Mexico - and is able to reproduce the observed patterns. Different policy measures such as subsidies to poor families are simulated and their impact on educational mobility is analyzed. The most efficient scheme in terms of cost and benefits appears to be one that features subsidies that are depending on private investment in education and sensitive to the level of poverty of the receiver. The results show that a significant increase in educational mobility can be achieved with subsidies for which a tax rate of about 10% is needed. An important finding is that the threshold of eligible people to receive subsidies strongly affects the efficiency, suggesting that coverage should increase with the size of the policy intervention.

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### Intergenerational Educational (Im)mobility Across Europe

Alyssa Schneebaum, Bernhard Rumplmaier, Wilfried Altzinger  $Session\ 5.7$ 

Intergenerational educational (im)mobility has received a fair amount of attention in the literature on social and economic outcomes, but there has been a disproportionate focus on boys and their fathers as subjects. Further, little is known about the intergenerational educational mobility patterns for people living in their country of origin compared to migrants into that country. Even fewer studies have examined the intersection of gender and migration background in intergenerational educational mobility; this is the prupose of this paper. We employ 2011 EU-SILC data for Austria to perform Markovian mobility matrix analysis and uni- and multivariate econometric analysis as well to study the relationship between gender, migration background, and intergenerational educational (im)mobility. We find that the educational attainment of girls and migrants relative to their parents is less mobile than that for boys and natives. Further, the immobility of educational attainment is enhanced by the intersection of these identities: migrant girls have very low chances of exiting the educational course laid out by their parents before them.

A preliminary analysis of the EU-SILC data for Austria confirms a high degree of educational immobility, which differs by the gender and migration status of the child. With the publication of the entire EU-SILC 2011 dataset in March 2013, we begin our cross-national investigation. Results are expected in June 2013.

### Aggregation versus cardinalization: a flexibility trade-off

Kristof Bosmans, Koen Decancq, Erwin Ooghe  $Session\ 6.1$ 

We propose a multidimensional transfer principle that approves of a progressive transfer of attributes between two individuals with the same preferences if the transfer preserves the overall efficiency of the distribution. Efficiency-preserving transfers among equals together with a handful of standard axioms (Pareto, anonymity, and a flexible form of welfarism) leads to a trade-off between aggregation flexibility and cardinalization flexibility. Either we must use money metric utilities to cardinalize and compare individual states, but can use any generalized Lorenz consistent social ranking to aggregate these money metric utilities over individuals. Or we can use any equivalent income approach, but then we must (locally) use leximin orderings to aggregate these equivalent incomes over individuals.

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### On the measurement of inequality for ordinal data

Martyna Kobus Session 6.1

Atkinson's Theorem (Atkinson, 1970) is a classic result in inequality measurement. It establishes Lorenz dominance as a useful criterion for judging whether one distribution is more unequal than another, because if distribution A Lorenz dominates distribution B, then all indices in a broad class of measures must agree that A is less unequal than B. Yet recent research shows that standard inequality theory cannot be used with ordinal data such as self-reported health status or educational attainment and therefore a new theory is being developed (Apouey, 2007; Naga and Yalcin, 2008). In this paper we formulate and prove an analog of Atkinson's theorem in an ordinal framework: Allison - Foster relation (Allison and Foster, 2004) is the widest relation with which all indices fulfilling median preserving spread agree, that is, these indices do not decrease whenever probability mass is transferred away from the median.

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#### Inequality with Ordinal Data

Frank Cowell, Emmanuel Flachaire  $Session \ 6.1$ 

The standard theory of inequality measurement assumes that the equalisand is a cardinal quantity with known cardinalisation. However, one may need to make inequality comparisons where either the cardinalisation is unknown or the underlying data are categorical. We propose a natural way of evaluating individuals' status in such situations, based on their position in the distribution and develop axiomatically a class of inequality indices, conditional on a reference point. We examine the merits of mean, median and maximum status as reference points. We also show how the approach can be applied to perceived health status and reported happiness.

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### What is Social Inequality and Why Does it Matter?

Chiara Binelli, Matthew Loveless, Stephen Whitefield  $Session \ 6.2$ 

As distinct from income or wealth inequality, 'social inequality' is currently poorly understood and, at best, unevenly measured. We take a first step towards building a consistent framework to conceptualize and measure social inequality. We characterize social inequality as the relative position of individuals along a number of dimensions that measure achieved outcomes and perceived access to services as prerequisites to actively participate in the life of a community and achieve outcomes in the future. Using survey data from twelve Central and Eastern European countries we construct an index of social inequality that we compare with other measures of inequality, and we use to identify which countries are more or less socially advantaged. We find that cross-national patterns of social inequality differ significantly from patterns derived from measures of income inequality. This is important since countries with less social inequality have higher levels of economic performance and stronger political institutions.

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### The building blocks of International Ecological Footprint Inequality

Jordi Teixido-Figueras, Juan Antonio Duro Session 6.2

This paper performs an empirical Decomposition of International Inequality in Ecological Footprint in order to quantify to what extent explanatory variables such as a country's affluence, economic structure, demographic characteristics, climate and technology contributed to international differences in terms of natural resource consumption during the period 1993-2007. We use a Regression Based Inequality Decomposition approach. As a result, the methodology extends qualitatively the results obtained in standard environmental impact regressions as it comprehends further social dimensions of the Sustainable Development concept, i.e. equity within generations. The results obtained point to prioritizing policies that take into account both future and present generations.

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### Social programs and Empowerment. Evidence from the Uruguayan PANES

Verónica Amarante, Andrea Vigorito Session 6.2

In this paper we estimate the impact of a cash transfer program-the Uruguayan PANES-on some dimensions of empowerment related to the individual level, an outcome not commonly assessed in quantitiative literature. We understand empowerment as the expansion of assets and capabilities of people in order to participate, negotiate and gain control over their lives and over institutions. PANES was a package of interventions and among it goals it was that beneficiaries gained greater autonomy, enlarging their opportunities. We exploit the unique opportunity provided by the fact that the follow up survey designed for the impact evaluation of the policy included specific questions to capture individual empowerment. Using different methodological approaches, we find that although money transfer per se did not have any impact on individual empowerment, participation in information meetings or a workfare program, did have a positive impact on knowledge of certain individual rights.

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### Lost in translation - rethinking the inequality equivalence criteria for bounded health variables

Gustav Kjellsson, Ulf-G Gerdtham Session 6.3

This paper considers the question: what distributional change of a population's health preserves the level of inequality? In the income inequality literature, the answer to lies somewhere between a uniform and a proportional change of the distribution. The polar positions represent the absolute and relative Inequality Equivalence Criteria (IEC), respectively. However, for a bounded health variable, health may be defined as both attainments and shortfalls. As a proportional change in attainments do not equal a proportional change in shortfalls, the literature has stressed the importance of measuring inequalities in attainments and shortfalls of health consistently using an absolute IEC. By contrast, this paper explicitly considers the relative IEC defined with respect to attainments and shortfalls to be the two polar cases of defensible positions for a bounded variable by formalizing a new compromise concept.

We also use a surplus sharing approach to provide new insights on commonly used inequality indices by evaluating the underpinning IEC in terms of how infinitesimal surpluses of health must be successively distributed to preserve the level of inequality. The IEC underpinning the intensively discussed indices suggested by Wagstaff and Erreygers satisfies our new compromise concept, but the distance to the polar cases varies with the mean health in the population. By contrast, we derive a one parameter IEC that weights the polar cases independent of the health distribution. That is, the shares of the surplus distributed according to the two relative inequality perceptions are constant and equal to a parameter value and the corresponding index is equally sensitive to differences in health and ill-health independent of the health distribution.

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# Discrimination in a universal health system: Explaining socioeconomic waiting time gaps

Meliyanni Johar, Glenn Jones, Michael Keane, Elizabeth Savage, Olena Stavrunova Session 6.3

One of the core goals of a universal health care system is to eliminate discrimination on the basis of socioeconomic status. We test for discrimination using patient waiting times for non-emergency treatment in public hospitals.

Waiting time should reflect patients' clinical need with priority given to more urgent cases. Using data from Australia, we find evidence of prioritisation of the most socioeconomically advantaged patients at all quantiles of the waiting time distribution. These patients also benefit from variation in supply endowments. These results challenge the universal health system's core principle of equitable treatment.

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### When more does not necessarily mean better: Health-related illfare comparisons with non-monotone welfare relationships

Mauricio Apablaza, Florent Bresson, Gaston Yalonetzky Session 6.3

Most welfare studies are based on the assumption that wellbeing is monotonically related to the variables used for the analysis. While this assumption can be regarded as reasonable for many dimensions of wellbeing like income, education, or empowerment, there are some cases where it is definitively not relevant, in particular with respect to health. For instance, health status is often proxied using the Body Mass Index (BMI). Low BMI values can capture under-nutrition or the incidence of severe illness, yet a high BMI is neither desirable as it indicates obesity. Usual illfare indices derived from poverty measurement are then not appropriate. This paper proposes illfare indices that are consistent with some situations of non-monotonic wellbeing relationships and examines the partial orderings of different distributions derived from various classes of illfare indices. An illustration is provided for health poverty as proxied by the BMI and weight-for-age indicators using DHS data for Bangladesh during the period 1997-2007. It is shown inter alia that the gains from the decline of under-nutrition for Bangladeshi mothers are undermined by the rapid increase of obesity.

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### Measurement of Equality of Opportunity: A Normative Approach

Kristof Bosmans, Emel Öztürk Session 6.4

In this paper, we axiomatize classes of equality of opportunity measures using a normative approach.

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### The compensation problem with fresh starts

Aitor Calo-Blanco Session 6.4 Forgiveness is an ethical ideal that advocates that a fresh start should be conferred on those individuals who regret their past choices. Grounded on such a principle, Fleurbaey (2005) proposes the use of the equivalent endowment as the proper measure of the welfare loss experienced by those who have mismanaged their initial resources. In this paper we provide the forgiveness framework with an axiomatic foundation that allows us to formally deal with the compensation problem. We obtain that different solutions to the ideal of forgiveness can arise according to the distributional requirements that society wants to satisfy.

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### Inequality and development: the role of opportunities and free-will

Gustavo A. Marrero, Juan G. Rodriguez Session 6.4

Taking human capital as the main engine of development, this paper combines the basic principles of the wage determination and human capital accumulation literature with that of inequality of opportunity. We build an overlapping generation economy with heterogenous agents, populated by a continuum of dynasties and where human capital is accumulated according to a non-convex process, which generates multiplicity of equilibria, human capital trap and intergenerational mobility. An effort decission, which is needed to accumulate human capital, depends on a free-will parameter, but also on factors that are beyond individual's control, such as parental human capital or other exogenous circumstances or endowments. Two different sources of inequality arises in the model, one due to differences in the free-will parameter (inequality of pure effort) and that coming from differences in initial endowments (inequality of opportunity). Inequality of pure effort is generally good for the human capital average. However, inequality of opportunity benefits human capital only for economies with a high initial percentage of persons in the trap and low initial inequality. Otherwise, each type of inequality affects human capital in opposite ways (positive or negative).

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# Beyond Inequality Accounting: Marital Sorting and Labor Supply in West Germany Nico Pestel

Session 6.5

In this paper, I measure the effect of the association of female and earnings on inequality across couple households in West Germany from 1986 to 2010 by matching spouses randomly to each other and predicting labor supply choices of hypothetical couples. This allows quantifying the extent of sorting in earnings potential rather than observed earnings which result from both productivity and labor supply coordination within couples. Constructing counterfactuals based on observed earnings might be misleading since labor supply is affected by the household context. Using German microdata as well as a behavioral microsimulation model I find that the impact of observed sorting on earnings inequality among couples turned from equalizing to disequalizing in recent years, but is rather weak. However, after correcting for the effect of labor supply choices, I find that sorting in productivity has a much larger impact on observed earnings inequality.

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### The generation gap: new evidence

Alfonso Rosolia, Roberto Torrini Session 6.5

We build on Rosolia and Torrini (2006) and discuss entry wages, career patterns and inequality developments of subsequent cohorts of youths who entered the italian labour market since the early '70s and offer a focus on more recent developments observed during the Great recession. The decline in entry wages started around mid 90s has continued in the last decade although no significant acceleration is observed during the crisis. Falling entry wages have not been accompanied by faster subsequent careers; rather, subsequent careers have been growingly characterised by rising earnings dispersion. We relate such developments to the evolution of labour market institutions, insofar as they affected labor market flows.

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### Wage gaps and human capital: looking for an explanation

Maurizio Franzini, Michele Raitano  $Session\ 6.5$ 

The economic literature has devoted a lot of studies to explain the determinants of wage inequality focusing in particular on the growth of wage premia between high skilled and low skilled workers. Focusing on this distinction is equivalent to consider only the inequality between workers not homogeneous in terms of skills and human capital (the so-called between inequality), ignoring the wage inequality among workers having the same human capital (the so-called within inequality). The aim of this paper is to measure - through subgroup decomposition analysis of inequality and wage equations - the importance of within inequality in Italy and in the EU countries and to identify the possible determinants of wage gaps within workers endowed with the same observable characteristics. In addition, the paper shows the evolution of the share of wage inequality in the period 1987-2009 not explained by human capital and other determinants usually considered in the Mincerian equations. To this aim, a longitudinal dataset recently developed for Italy is used.

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The Effect of Trade and FDI on Inter-Industry Wage Differentials: The Case of Mexico

Gabriela López-Noria Session~6.6

Abstract: Taking advantage of the liberalization process under NAFTA, this paper assesses the relative importance of the degree of trade openness and Foreign Direct Investment (FDI) in explaining inter-industry wage differentials for the case of Mexico. Using INEGI's National Survey of Urban Employment for the period 1994-2004, the empirical analysis is conducted on two stages. In the first stage, individual wages are regressed on worker characteristics, job and firm attributes, informality and a set of industry indicators. In the second stage, inter-industry wage differentials (derived from the coefficient estimates of the industry indicators) are regressed on trade and FDI variables. The main findings show that trade openness does not have a robust and statistically significant effect on inter-industry wage differentials, whereas for the case of FDI, a positive nonlinear relationship is found to exist.

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# A multi-factor inequality approach to a transfer scheme: the case of Common Agricultural Policy

Arsen Palestini, Giuseppe Pignataro  $Session \ 6.6$ 

The purpose of this paper is to propose theoretical foundations on the impact of transfer scheme, e.g. Community Agricultural Policy, on income inequality within European Countries. First, we show that ex-post inequality (in the after-transfer distribution) may increase if either initial aggregate income or the amount of contributions are sufficiently high. Second according to welfare ordering, we characterize a multi-factor decomposition of the Atkinson index to gauge the impact of each income source on the inequality profile. Third, we introduce a methodology to construct a cooperative game played by different income factors (as net incomes and/or incoming transfers) explicitly measuring the cost of inequality across the population in terms of welfare loss. We finally rely on Banzhaf and Shapley values to determine the marginal contributions of each factor to overall inequality.

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#### The Income Lever and the Allocation of Aid

Lidia Ceriani, Paolo Verme Session 6.6

The paper develops a concept and a measure of the monetary capacity of a country to reduce its own poverty and shows how these tools can be used to guide budget allocations or the allocation of aid. The authors call this concept the income lever. Making use of tax and distributive theory, the paper shows how different redistributive criteria correspond to the different normative criteria of the income lever. It then constructs various income lever indexes based on these criteria and uses such indexes to rank countries according to their own capacity to reduce poverty. As shown in the empirical application, this methodology can provide an equitable tool to rank countries or regions when it comes to budget or aid allocations, whether it is the allocation of social funds within the European Union (North-North transfers) or the allocation of aid from rich to poor countries (North-South transfers). The findings indicate that the allocation of social funds in the European Union follows closely the rank that results from the income lever indexes proposed while the allocation of aid to Sub-Saharan African countries does not.

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#### Pro-poor mobility

Jean-Yves Duclos, Flaviana Palmisano Session 6.7

The aim of this paper is to provide an analytical framework for the evaluation of the pro-poorness of an income transformation process. Differently from existing contributions that focus on the impact of growth on poverty, we propose a measure of the impact of mobility on poverty. This measure allows to distinguish an income transformation process generating persistent, chronic, poverty from an income transformation process generating transient poverty. A further decomposition of our measure allows, finally, to disentangle the effect of the growth component of mobility from the redistributional component of mobility on the dynamic of poverty over time.

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### Measuring intergenerational transmission of poverty

Luna Bellani, Michela Bia Session~6.7

In this paper we examine the causal channels through which being born poor affects the individual's economic outcomes as an adult, assessing the role of both parental and child human capital. We contribute to the growing literature on intergenerational transmission, applying different modern statistical techniques, refining measurement of causal effects. On one hand, we propose to apply a propensity score matching method to select a control group of non-treated individuals. The matched samples of poor and non-poor children will then be used to assess impacts on adulthood outcomes, primarily income and poverty. Moreover, because we are interested also on inequality of opportunity, we focus not only on mean impacts estimation, but also on the distributional effects of growing up poor. To this end, we apply semi-parametric and non-parametric estimators of the Quantile Treatment Effects (QTE). The analysis is based on a wide-ranging cross-country comparison using EU-SILC data. For the specific purpose of this project we use the module on intergenerational transmission of 2005, where retrospective questions about parental characteristics (such as education, age, occupation) were asked. We find that being poor in childhood significantly decreases the level of income in adulthood (of around 3,000 euro on average), increasing the probability of being poor by 3%.

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Estimating Nonlinear Intergenerational Income Mobility with Correlation Curves William Nilsson

Session 6.7

A correlation curve is proposed as a new measure to study the degree of intergenerational income mobility, i.e. how income status is related between parents and adult child. The method overcomes the shortcomings of the elasticity of children's income with respect to fathers' income (i.e. its sensitiveness to different dispersion among the generations) and the correlation coefficient (i.e. its inability to capture nonlinearities). The method is particularly suitable for comparative studies and in this study is applied to labour earnings in comparison to disposable income. Nonlinear correlation curves are found, which in some cases substantially differ from corresponding nonlinear elasticities.

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#### Prioritarian poverty comparisons with cardinal and ordinal attributes

Kristof Bosmans, Luc Lauwers, Erwin Ooghe Session 7.1

The ethical view of prioritarianism holds the following: if an extra bundle of attributes is to be allocated to either of two individuals, then priority should be given to the worse off among the two. We consider multidimensional poverty comparisons with cardinal and ordinal attributes and propose three axioms that operationalize the prioritarian view. Each priority axiom, in combination with a handful of standard properties, characterizes a class of poverty measures. We provide an empirical application to European Union Statistics on Income and Living Conditions data. For this application, we develop a unanimity criterion within the setting of a single cardinal attribute (income) augmented by several binary ordinal attributes.

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#### Inequality, welfare and order statistics

Encarnación M. Parrado-Gallardo, Luis J. Imedio-Olmedo, Elena Barcena-Martin Session 7.1

In this paper we use the distributions of order statistics to define functions with the appropriate properties and represent social preferences regarding income distributions. Following the approach of Yaari (1987, 1988), this allows constructing a set of social welfare functions from which the corresponding inequality indices are derived. The obtained measures incorporate diverse normative criteria, with different degrees of preference for equality. The generalized Gini coefficients and the family of indices proposed in Aaberge (2000) are obtained as particular cases. This approach shows that each of these families of indices characterizes the income distribution, but for a change of scale.

# Analysis of Inequality across the Multi-dimensionally Poor and across Population Subgroups for Counting Approaches

Sabina Alkire, Suman Seth Session 7.1

Poverty has many dimensions, which, in practice, are often binary or ordinal in nature. A number of multidimensional measures of poverty have recently been proposed that respect this ordinal nature. These measures agree that the consideration of inequality across the poor is important, which is typically captured by adjusting the poverty measure to be sensitive to inequality. This, however, comes by sacrificing certain useful properties, such as not being able to break down the measure across dimensions to understand their contributions to overall poverty. In addition, compounding inequality into a poverty measure does not necessarily create an appropriate framework for capturing disparity in poverty across population subgroups, which is crucial for effective policy. In this paper, we propose using a separate decomposable inequality measure - a positive multiple of variance - to analyze inequality in deprivation counts among the poor and disparity in poverty across population subgroups. We provide two illustrations using Demographic Health Survey datasets to demonstrate how this inequality measure adds important information to the adjusted headcount ratio poverty measure in Alkire-Foster class.

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### Inequality measures and the income accounting period

Carsten Schroeder Session 7.2

When individual or household incomes are collected for administrative or scientific surveys, the income accounting period is sometimes a month, sometimes a quarter, and sometimes a year. This accounting period likely affects the shape of the income distribution and inequality measures. Using employment histories of German residents, the present study systematically explores the sensitivity of inter-temporal inequality patterns and cross-regional inequality comparisons to the length of the income accounting period.

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### Do wealth distributions follow power laws? Evidence from "rich lists"

Michal Brzezinski

Session 7.2

We use data on wealth of the richest persons taken from the "rich lists" provided by business magazines like Forbes to verify if upper tails of wealth distributions follow, as often claimed, a power-law behaviour. The data sets used cover the world's richest persons over 1996-2012, the richest Americans over 1988-2012, the richest Chinese over 2006-2012 and the richest Russians over 2004-2011. Using a recently introduced comprehensive empirical methodology for detecting power laws, which allows for testing goodness of fit as well as for comparing the power-law model

with rival distributions, we find that a power-law model is consistent with data only in 35% of the analysed data sets. Moreover, even if wealth data are consistent with the power-law model, usually they are also consistent with some rivals like the log-normal or stretched exponential distributions.

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### Inequality and the Top of the Income Distribution in Chile 1990-2012: Questioning the Consensus

Jorge Friedman, Andre Hofman Session 7.2

In Chile, the official figures on income distribution show no significant progress in the last 20 years despite fast economic growth and a significant reduction in poverty. This result is based almost exclusively on one household survey, the Socioeconomic Characterization Survey (CASEN). In this article we challenge the result on income distribution by comparing the micro data from CASEN with the outcomes emanating from the Supplementary Survey of Income (ESI) survey conducted by INE, Chile's National Statistic Institute. The micro data are available for both surveys since 1990. This paper reviews what has happened in terms of inequality in Chile in the period 1990-2012 and, contrary to the ongoing consensus, finds that important improvements in the income distribution can be shown for this period. Using Gini decompositions, this study shows how central the behaviour of income tied to the richest 1% of the households is, and how both surveys critically differ in the data on the upper end of the distribution. These results are in line with current research on income distribution that focuses on the top percentiles of income.

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### Subjective and Objective Well-Being: A Bayesian Networks Approach

Lidia Ceriani, Chiara Gigliarano Session 7.3

Aim of this paper is to provide an insight of the structure of dependence existing among the different components of well-being, by applying the statistical technique of the Bayesian Networks. A Bayesian Network is a probabilistic graphical model that represents a set of variables and their probabilistic dependencies, and offers advantages in implementing models of cause and effect. This paper constitutes one of the first attempt, to the best of our knowledge, to apply Bayesian Networks to the analysis of multivariate well-being. Our multivariate well-being evaluations will also take into account the differences across regions and countries. Empirical application is be based on LITS (Life in Transition Survey) dataset for a sample of European countries (France, Germany, Great Britain, Italy, Sweden, and a selection of new member states).

### Personality and dislike for inequality: Typifying inequality aversion with respect to locus of control

Santi Budria, Ada Ferrer-i-Carbonell, Xavier Ramos Session 7.3

In this paper we find an individual non-cognitive characteristic that generates heterogeneity on individuals' taste for equality. This is individuals' locus of control (LOC), a personality measure that defines individuals as externals or internals depending on individuals' perception about the role of external (e.g., luck and others) or internal (e.g., effort and own decisions) forces driving their lives. The empirical analysis shows that external individuals are more inequality averse than internal individuals. This relates to the idea that individuals' degree of tolerance towards inequality depends on the importance they assign to own effort or luck to determine individuals' outcomes. Even though policy making cannot affect individuals' personality and despite personality seems to be fairly time persistent, understanding the relationship between LOC and inequality aversion will help us assess the importance of fairness feelings on shaping preferences for equality. The empirical analysis uses the German SOEP, a large representative panel data set for Germany.

Link to the PDF file

# Polarization of Time and Income - A Multidimensional Approach with Well-Being Gap and Minimum 2DGAP: German Evidence

Joachim Merz, Bettina Scherg Session 7.3

A growing polarization of the society accompanied with an erosion of the middle class experiences more and more attention at least in the German recent economic and social policy discussion. Our study will contribute to the polarization discussion with respect to multidimensional theoretical measurement and empirical application in two ways: First, we propose extended multidimensional polarization indices based on a CES-type well-being function and present a new measure to multidimensional polarization, the mean minimum polarization gap 2DGAP. This polarization intensity measure provides transparency with regard to each singular attributes and ensures at the same time its interdependent relations. Second, the empirical application - in addition to the traditional income measure - we incorporate time as a fundamental resource for any activity within multidimensional polarization. Genuine personal leisure time will take care of social participation in the spirit of social inclusion/exclusion and Amartya Sen's capability approach. Instead of arbitrarily choosing the attributes' parameters in the CES well-being function the interdependent relations of time and income will be evaluated by German Society. With the German Socio-Economic Panel (SOEP) and additional detailed time use diary data of the two available German Time Use Survey (GTUS) 1991/92 and 2001/02 we quantify available and extended multidimensional polarization measures as well as our new approach for the polarization development of the working poor in Germany. Overall, the new transparent multidimensional polarization components accompanied with the 2DGAP measure are important for any targeted polarization policies in particular. Three prominent empirical results appear: First, genuine personal leisure time in addition to income is an important polarization attribute. Second, its compensation evaluated by the German Society is of economic and statistic significance. Third, in particular supported by the new minimum 2DGAP approach, multidimensional polarization increased over that decade in Germany.

#### Labour Market Institutions, Crisis and Gender Earnings Gap in Eastern Europe

Cristiano Perugini, Ekaterina Selezneva Session 7.4

This paper studies gender earnings inequality in ten Central and Eastern EU countries before (2007) and during the ongoing crisis (2009), using quantile regression methods. The analysis reveals remarkable cross-country diversity in levels and patterns of the gender gap along the earning distribution. We address then the role played by country-specific labour market institutions in forming this variety. Labour market deregulation increases gender inequality, particularly reinforcing the glass-ceiling effect. Higher union density and wage coordination reduce the pay gap, with stronger equalizing effects again in the better-paid jobs. Lastly, the crisis seems to further weaken the already poor role of institutions in the low-pay sector.

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### The evolution of the gender wage gap

Blaise Melly, Giulia Santangelo Session 7.4

We analyze the evolution of the gender wage gap in the USA between 1968 and 2008. We first suggest a new correction for sample selection that exploit the panel structure of the data (PSID). Our results indicate that, while selection into employment remained positive over the whole period, the resulting bias decreased over time due to the increasing employment rate. We then decompose the observed change in the gender wage gap into a part explained by changes in the distribution of characteristics, a part explained by changes in the wage structure and a change in discrimination that cannot be explained by the other factors. The conditional wage distribution is estimated by a family of flexible quantile regression models. We use empirical process theory tools to derive the asymptotic distribution of our estimators and show the consistency of the bootstrap. Our results show a continuously convergence of the characteristics of the women toward those of men while the increase in wage inequality worked against women, confirming the "swimming upstream" hypothesis of Blau and Kahn (1997). The decrease in discrimination did not stop nor slow down during the entire period; we predict that it will disappear around 2020.

Link to the PDF file

# Does part-time employment widen the gender wage gap? Evidence from twelve European countries.

Eleonora Matteazzi, Ariane Pailhé, Anne Solaz Session 7.4

One of five workers work part-time in Europe, mainly women. This article examines the extent to which the overrepresentation of women in part-time employment explains the gender hourly earnings gap in twelve European countries. Using the EU-SILC 2009 data, a double decomposition of the gender wage gap is implemented: between

men and women employed full-time and between full-time and part-time working women. The high prevalence of part-time employment plays only a minor role. The nature of part-time employment and labor market segregation are much more important factors. A large share of the gender wage gap still remains unexplained, however.

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#### Power, luck and ideology in a model of executive pay

Frederick Guy, Peter Skott Session 7.5

The microprocessor and related technologies have transformed corporate and industry structure; applied in a neoliberal environment, the technologies have had profound effects on the relative power of different groups. Skott and Guy (2007) and Guy and Skott (2008) formalized one aspect of this process of power-biased technical change: firms' increased ability to monitor low-paid employees and the resulting changes in inequality and employment at the low end of the income distribution. This paper addresses power biases and income inequality at the high end. Increasing firm-level financial volatility has intensified the agency problem and increased the power of corporate executives. These effects, which have been compounded by changes in ideology and pay norms, yielded an explosion in executive pay. While the model developed in this paper (and empirical work, to follow) deals with executives of non-financial corporations, the argument is easily generalized to their counterparts in the financial sector, thus accounting for much of the rise in the income share of the top 0.1%.

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### Labour-Market Institutions and The Dispersion of Wage Earnings

Wiemer Salverda Session 7.5

In this paper we study the contribution of labour market institutions in modelling the wage distribution. After framing the problem with the help of an accounting model in a population composed by three groups (skilled and unskilled workers, unemployed), we study the correlation between institutional measures and inequality measures, varying at country and cohort level.

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# Polarizing growth, equalizing recession: technologies and skills in European employment

Valeria Cirillo, Leopoldo Nascia, Mario Pianta

Session 7.5

The aim of this work is to shed light on employment polarization considering employment changes between sectors and upskilling/downskilling trends within sectors. In the long run (1999-2011), an important part of upskilling registered in manufacturing is also explained by structural change, that is employment movement toward services and employment contraction in manual workers. We detail the analysis considering the relevance of cycles on employment and polarization investigating the relationship between polarization trends and technology in Europe in upswings (2002-2005) and downswings (2006-2011). We consider technology as a differentiated process focusing on product and process innovations. We analyze polarization firstly applying a within-between decomposition in order to account for intersectoral and intrasectoral employment variations. Then, we use an econometric model to investigate the impact of different technological strategies on polarization trends. In order to account for economic cycles, we split the sample in two periods 2002-2005 and 2006-2011. We found a significative and positive impact of cost-competitiveness technological strategies on polarization and a negative impact of product-based innovations on polarization trends during the upswing. On the contrary, during downswings most innovations are process-oriented and they have a negative impact on employment due to restructuring plans performed by firms. We detect an overall increase in polarization during upswings for both manufacturing and services which is reverted during downswings basically due to drastic cuts in manual workers in manufacturing industries. Services continue to polarize also during downswings.

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### Measuring Impoverishment: An Overlooked Dimension of Fiscal Incidence

Sean Higgins, Nora Lustig Session 7.6

The effect of taxes and benefits on the poor is usually measured using standard poverty and inequality indicators, stochastic dominance tests, and measures of progressivity and horizontal inequity. However, these measures can fail to capture an important aspect: that some of the poor are made poorer (or some of the non-poor made poor) by the tax-benefit system. We call this impoverishment and formally establish the relationships between impoverishment, stochastic dominance tests, horizontal inequity, and progressivity measures. The directional mobility literature provides a useful framework to measure impoverishment. We propose using a transition matrix and income loss matrix, and establish a mobility dominance criterion to compare alternate tax-benefit systems. We illustrate with data from Brazil.

Link to the PDF file

#### Long-term Participation Tax Rates

Charlotte Bartels
Session 7.6

Generous income support programs as provided by European welfare states have often been blamed to reduce work incentives for lower income classes and to increase durations of unemployment. Standard studies measure work

incentives based on annual income concepts. This paper analyzes how work incentives inherent in the German tax-benefit system evolve when extending the time horizon to three years (long-term). Participation tax rates are computed for 3-year periods 1995-1997 and 2005-2007 to reveal potential effects of the labor market reforms between 2003 and 2005. Results show that long-term work incentives increased even more than short-term work incentives. Particularly for middle-income individuals, this is largely explained by the abolition of earnings-related unemployment assistance.

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## The redistributive effect and progressivity of taxes revisited: An International Comparison across the EU with EUROMOD

Gerlinde Verbist, Francesco Figari Session 7.6

Progressivity of taxes is one of the major determinants of the equalizing capacity of taxes. Verbist (2004) presented an international comparison of the redistributive effect of personal income taxes in the 15 countries of the EU in 1998, using the European tax-benefit model EUROMOD. It compared the equalising effect of personal income taxes with that of social security contributions, as well the effect of the various types of tax concessions (i.e. exemptions, deductions, allowances and credits). This study found a wide variety among countries in the level of inequality reduction as well as in the instruments used to achieve this reduction. Personal income taxes were in all countries the most important source for inequality reduction, which was to a large extent, though not solely, due to the progressive rate schedule. Countries with a high degree of pre-tax inequality did not systematically redistribute more through their taxes; the results indicated rather the opposite. Over the past ten years, many countries have introduced major tax reforms. In this paper we want to update the analysis to the most recent available EUROMOD-version for the 15 pre-2004 EU countries, which will allow for a comparison over time. Moreover, we will incorporate also the post-2004 member states, whose personal tax systems have often different characteristics compared to the EU-15 (e.g. flat tax systems). Hence, also the geographical scope will be enlarged, allowing better insight in redistributive working of tax systems.

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# The Intergenerational Dynamics of Social Inequality - Empirical Evidence from Europe and the United States

Veronika V Eberharter Session 7.7

Based on nationally representative data from the German Socio-Economic Panel (GSOEP), the Panel Study of Income Dynamics (PSID), and the British Household Panel Survey (BHPS) we analyze the intergenerational transmission of economic and social (dis-)advantages in Germany, the United States and Great Britain. We test with the hypotheses that extent and determinants of intergenerational income mobility and the relative risk of poverty differ with respect to the existing welfare state regime, family role patterns, and social policy design. The empirical results indicate a higher intergenerational income elasticity in the United States than in Germany and Great

Britain, and country differences concerning the influence of individual and parental socio-economic characteristics, family disruption and health dissatisfaction on intergenerational income mobility and the relative risk of poverty.

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### Intergenerational Mobility of Italian immigrants in Germany

Timm Boenke, Guido Neidhoefer Session 7.7

This study presents an empirical analysis of intergenerational mobility in educational achievements of Italian immigrants in Germany. For this purpose a model of intergenerational human capital transmission is introduced and applied to the specific situation of immigrants and their offspring in the host country. The model is empirically tested by means of OLS and Probit estimation based on household survey data from German Socioeconomic Panel (GSOEP). Alternative measures to compare intergenerational mobility of immigrants and natives are also determined by the transition-matrix approach. Consistent with the suggestions of previous studies and economic theory, substantial inequality of educational achievements between immigrants and natives is found, with the gap getting lower in the case of "second generation" immigrants. Nevertheless the findings of this study show that Italian immigrants of first and second generation exhibit high intergenerational mobility, suggesting that the assimilation process of this group in the host country is not slowed down by persistence of educational achievements. In contrast, a relatively high degree of intergenerational education correlation is ascertained in the case of German native population. At last a yet unexplored database from the Registry of Italians Resident Abroad (A.I.R.E.) is presented. Initial analyses basing on this data give evidence for new trends in self-selection and mobility of more recent waves of Italian immigrants in Germany and leave space for further investigations.

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### From the Cradle to the Grave: The Impact of Family Background on Carrier Paths of Italian Males

Michele Raitano, Francesco Vona Session 7.7

In a previous paper on European countries (Raitano, Vona 2011), we show that, even when conditioning on child education and occupation, an unexplained residual correlation between family background and child earnings persists in Italy and it is mostly associated to a parachute for those descending the social scale. This evidence suggests that in Italy the main source of high intergenerational inequality is not the educational system, but the dynamics on the labour market. In this paper, focusing on Italy we can deeply analyze the impact of family background along the entire carrier path by means of micro-data provided by an innovative panel following individuals during their whole working life and containing information on parental background and several children characteristics and labour market outcomes and firms' features. We find that family background significantly affects returns to labour market experience on top on its effect on the earning potential. Moreover, this effect is not substantially larger for high ability individuals and it is linked to the sectorial degree of competition and it seems driven by those who

change firms during their career.

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# Inequality of opportunity for young people in Italy: the role of fathers' occupation Gabriella Berloffa, Francesca Modena, Paola Villa Session 7.8

In this paper we analyze the way in which changes in macro-economic circumstances and labour market institutions, that occurred in Italy over the '90s, affected the set of opportunities for young generations, amplifying or shrinking existing inequalities. In particular we investigate whether they have modified the importance of the family background to reach certain labour outcomes (in terms of more or less secure employment). Results suggest that the effect of the social network of the father on early occupational outcomes started to emerge in the early '80s and it increased through time. After 1997 (the introduction of the Treu's package), it became particularly relevant for facilitating the transition from insecure to secure employment or the exit from unemployment.

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# Inequality in educational opportunity: an intertemporal and international comparison Patrizia Luongo, Vincenzo Mariani, Vincenzo Mariani Session 7.8

In this paper we borrow from Roemer (2011) the idea of measuring inequality of opportunity (IOp) in educational achievement through an ordered pair that provides a measure of both the level and the degree of IOp. The first component focuses on the distribution of outcome of the most disadvantaged pupils, the second is a synthetic index of IEOp. This allows us to rank countries according to "how fair they treat their children" and analyse under a different perspective the evolution of national education systems over time. Using OECD PISA data from 2003 to 2009, we find that IEOp explains from 7% to 12% of total inequality in achievements according to the domain (reading, math and science). Western countries display high level of welfare, on the contrary IEOp is low in North America and Australia but high in Europe. Latin America presents both a high share of IEOp and a low level of welfare. Moreover, we find support to the fact that IEOp, together with welfare, has increased along time. Finally, we find that IEOp correlates negatively with GDP; on the contrary the tracking of students associates with both high inequality in educational achievements and IEOp.

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Inequality of Opportunity and Economic Growth: negative results from a cross-country analysis

Francisco Ferreira, Christoph Lakner, Maria Ana Lugo, Berk Ozler Session 7.8

Income differences arise from many sources. While some kinds of inequality, caused by effort differences, might be associated with faster economic growth, other kinds, arising from unequal opportunities for investment, might be detrimental to economic progress. We construct two new metadata sets, consisting of 111 household surveys and 135 Demographic and Health Surveys, to revisit the question of whether inequality is associated with economic growth and, in particular, to examine whether inequality of opportunity has a negative effect on subsequent growth. Results are suggestive but not robust: while overall income inequality is generally negatively associated with growth in the household survey sample, we find no evidence that this is due to the component we attribute to unequal opportunities. In the DHS sample, both overall wealth inequality and inequality of opportunity have a negative effect on growth in some of our preferred specifications, but the results are not robust to relatively minor changes. On balance, although our results are suggestive of a negative association between inequality and growth, the data at our disposal does not permit robust conclusions as to whether inequality of opportunity is bad for growth.

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#### More about Weakly Decomposable Inequality Measures

Casilda Lasso de la Vega, Pauline Mornet, Stéphane Mussard  $Session\ 8.1$ 

This note proposes a generalization of the weak decomposition axiom recently introduced by Ebert (2010) [U. Ebert (2010), The decomposition of inequality reconsidered: Weakly decomposable measures, Mathematical Social Sciences 60(2): 94-103]. The generalization of this axiom relies on the introduction of weaker weighting functions based both on the size of the population and the mean income. Relative, absolute and intermediate inequality measures can now be included in one class of weakly decomposable inequality measures.

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### Bayesian Assessment of Lorenz and Stochastic Dominance using a Mixture of Gamma Densities

David Lander, William Griffiths, Duangkamon Chotikapanich  $Session\ 8.1$ 

Hypothesis tests for dominance in income distributions have received considerable attention in recent literature. See, for example, McCaig and Yatchew (2007), Barrett and Donald (2003), Davidson and Duclos (2000) and references therein. Such tests are useful for assessing progress towards eliminating poverty and for evaluating the effectiveness of various policy initiatives directed towards welfare improvement. To date the focus in the literature has been on sampling theory tests. In such tests we either reject a null hypothesis, implying dominance does exist, or we conclude there is insufficient evidence to reject a null hypothesis, implying the evidence is inadequate to prove dominance. Chotikapanich and Griffiths (2006) develop and apply Bayesian methods of inference to problems of Lorenz and stochastic dominance. In this paper we extend their method, applying it to a more flexible class of income

distributions. Outcomes from income distribution comparisons are reported in terms of the posterior probability that dominance exists. Reporting results about uncertain outcomes in terms of probabilities has the advantage of being more informative than a simple reject / do-not-reject outcome. Whether a probability is sufficiently high or low for a policy maker to take a particular action is a decision for that policy maker. The methodology is applied to data for Indonesia from the Household Expenditure Survey for the years 1999, 2002, 2005 and 2008. We assess the likelihood of dominance from one time period to the next. In this paper income is assumed to follow a mixture of gamma distributions. The posterior probability of dominance is given by the proportion of times one distribution dominates the other over the posterior observations generated by Markov chain Monte Carlo.

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### Social Welfare Comparisons with Fourth-Order Utility Derivatives

christophe muller

Session 8.1

In this paper, we provide intuitive justifications of normative restrictions based on the signs of fourth-order derivatives of utilities in the context of multidimensional welfare analysis. For this, we develop a new notion of welfare shock sharing. We also derive a new characterization of risk apportionment for asymmetric conditions of fourth-order derivatives on utilities. Then, we use such restrictions to derive new stochastic dominance criteria for multidimensional welfare comparisons.

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### The Determinants of Income Polarization on the Household and Country Level across the EU

Mario Holzner Session 8.2

A multi-level approach to test for the determinants of income polarization both at the household as well as the country level is applied to a panel of about 300,000 households in EU countries over the period of 2003-2009. Among the policy relevant macro variables, higher progressive labour taxation and to a certain extent capital taxation is positively correlated with lower levels of income polarization. Also public expenditures on social protection, education and economic subsidies are related to a lower degree of polarization. Finally, lower unemployment, a stronger industrial base and more trade openness are also associated with lower levels of polarization.

#### Are Mass Media and ICTs associated with Inequality and Poverty?

Sanghamitra Bandyopadhyay Session 8.2

We examine associations of mass media and information and communications technologies (ICTs) with inequality and poverty. We find that mass media and ICT variables are robustly negatively associated with inequality and poverty. Newspapers have a robust negative association with inequality. Radios and TVs also have a negative association with inequality and poverty. ICT expenditures have a negative association with poverty. An ICT index is constructed which also has a negative association with poverty. ICT is positively associated with inequality for the full sample, but is negatively associated with inequality for the developing country sample.

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### Assessing the Measurement of the Middle Class: Argentina 1991-2012

Maria Edo, Walter Sosa Escudero Session 8.2

Several income-based definitions of the middle class have been advanced in the economic literature in recent years. Derived from divergent theoretical backgrounds, these alternative measures exhibit interesting conceptual and methodological differences. An empirical question naturally arises: despite their theoretical distinctions, do these measures differ when applied to empirical data? And, if so, which measures should be preferred, and why? Using data from Argentina, this study aims at assessing the performance of several practical notions on income based middle class. The dramatic changes suffered by the income distribution of this country during the last twenty years provide a suitable setting for this kind of analysis.

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### Measuring Vulnerability Using the Counting Approach

Indranil Dutta, Ajit Mishra Session 8.3

Vulnerability has become an integral part of any deprivation assessment. In this paper we take a fresh look at measuring vulnerability, where we separate out the identification part of whether an individual is vulnerable from the aggregation part as has been done in the multi-dimensional context. In doing so, we have also been able to deal with one of the crucial problems that we see in the multi-dimensional context, which is that of weights used on the different dimensions under aggregation. In this case the probabilities are used as the natural weights. We axiomatically characterize this new measure of vulnerability and thus also provide a theoretical underpinning to many of the empirical applications in this field.

## Measurement of income inequality re-examined: Constructing experimental tests by questionnaire

Barbara Jancewicz Session 8.3

Perception of income inequality by ordinary people is a relatively new field of research, but its importance is rapidly growing. More and more non-specialists are basing their opinions and decisions on inequality measures, with Gini coefficient, Theil measure and Atkinson index being the most frequently used ones. Despite the popularity of inequality measures, underlying assumptions of the most popular of them do not fully hold, as shown in early research by Amiel and Cowell (1992, 1999). However, results of their study contain multiple puzzling and inconsistent answers. Further research by these authors on the topics of inequality, risk, justice and polarisation perception is still burdened by this problem, even though the questionnaires differ and span multiple topics. This paper analyses methods used by Amiel and Cowell to elicit respondents' views about income inequality. It presents results of a quantitative questionnaire repeated after Amiel and Cowell, combined with qualitative interviews with selected respondents. The research was conducted in Poland on 132 sociology and economy students. Qualitative interviews and subsequent data analysis revealed multiple problems that caused respondents to answer inconsistently, and solutions to some of them are proposed. The questionnaire should offer a standardized set of possible answers to verbal questions, since different structure and adding explanations to some of the answers causes confusion both for the respondents and the researcher. The article proposes also giving respondents a possibility of expressing ambivalence or doubt, since some inconsistencies were a result of a forced answer. Understandability of the questionnaire can be increased by using natural language and avoiding abstract examples. This applies also to salaries, which should be presented in a currency familiar to the respondents and have plausible ranges, otherwise some respondents will transform them into such on their own. We should try to limit the number of questions used only to the ones most relevant to the analysed problem. However verbal and numerical questions show different aspects of inequality, so using and comparing both types of questions is advised, even though it lengthens the questionnaire and gives an opportunity of conflicting answers. These problems can be only partially solved by merging possibly conflicting questions into one (e.g. a ranking task of 3 distributions instead of 2 or 3 pairwise comparisons). The number of conflicts can be also decreased by rearranging the questionnaire so that corresponding questions follow one another, or using a computer-based interactive questionnaire. Results presented in this paper allow construction of better questionnaires about income inequality and related topics.

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## Cross-Sectional and Longitudinal Equivalence Scales for West Germany Based on Subjective Data on Life Satisfaction

Juergen Faik Session 8.3

The present study calculates variable, cross-sectional as well as longitudinal equivalence scales on the basis of the German 1984-2010 Socio-Economic Panel (SOEP) database for West Germany. It follows the "individual variant" for calculating subjective equivalence scales using "life satisfaction" as a proxy variable for "utility". The cross-sectional scale estimates are characterised by relatively low scale values which is typical for the subjective scale approach. As a further main result, the estimated longitudinal equivalence scales reveal some but rather slight cohort-specific scale differences. Especially, the unsatisfactory fit of the paper's regressions points to the need for more research activities in this strand of social science research. The latter must be emphasised since equivalence

scales are very important for social policy. Specifically, this holds true for longitudinal scales in order to capture cohort effects and, thus, to deal with intra- and intergenerational aspects of well-being (and corresponding differences).

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### On Gender Discrimination in Wages and the Feminization of Poverty

Daniel Gottlieb, Miri Endeweld Session 8.4

In this paper we analyze the socio-economic situation of women in Israel. More specifically we study the development of the dimensions of poverty of households headed by women over the observation period. We discuss poverty calculated from economic cash income and from net cash income. The difference between them reflects the effort of poverty reduction by government intervention through payment of social benefits and taxation. These developments are shown for various population groups, including the old-aged and single mothers. The poverty dimensions include poverty incidence, the relative income gap and poverty severity (as measured by the FGT index). In the second part we estimate the gender effect in a microeconomic model of determination of hourly wages, which may be interpreted as an indication for gender discrimination in the labor market. This is done by estimation of a wage equation for the beginning and the end of the observation period - 1999 and 2010. We also added an estimate for 2011 in order to check for the robustness of the 2010 results. The hourly wages are explained by demographic and socio-economic variables, like the economic branch and occupation of the wage earner's, and more general data such as the geographic area and ethnic origin, which are also important determinants in Israel's highly heterogeneous society. Such estimations typically encounter the problem of the self-selection bias. This is particularly true in economies which have a high percentage of people in working age who do not participate in employment. We thus estimate the two-stage model including a "Heckman-correction" and compare it with the OLS estimates. Our analysis indicates that the poverty indices for women as heads of households are significantly higher than for households headed by men. However the gender gap in poverty rates is found to decline over time. In the simple wage equation we find gender discrimination to be significant and more or less stable over the decade. After correcting for self-selection we find that the gender bias was lower in all three years, but remained stable between 1999 and 2010. However it increased in 2011 compared to the other two years we examined.

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#### Career discontinuities and the gender wage gap: a quantile approach

Paolo Naticchioni, Michele Raitano, Giulia Santangelo  $Session\ 8.4$ 

This paper investigates the impact of career discontinuities in working history, i.e. experience gaps, on the workers' career profile, to assess whether and to what extent they affect differently wages of female and male workers and hence contribute to the gender gap. We make use of a unique Italian administrative dataset, the AD-SILC, to precisely identify both the experience gaps in career histories for women and men, and the reasons for such gaps, i.e. maternal leave. We implement a recent quantile methodology that allows controlling for unobserved heterogeneity in a quantile framework. Our results show that in fixed effects experience gaps have a negative impact on male

weekly wage dynamics, effects that is decreasing along the wage distribution. Women display an additional wage penalty with respect to men, which is instead more uniformly distributed along the wage distribution. We also point out that the additional penalty for women is only partially due to cumulative weeks in maternal leave and to childbirth events.

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#### Inequality-adjusted gender wage differentials in Germany

Ekaterina Selezneva, Philippe Van Kerm Session 8.4

This paper exploits generalized, 'inequality-adjusted' measures of wage differentials to examine the gender wage gap in East and West Germany over the period 1999-2008 using data from the German Socio-economic Panel Study (SOEP). Women appear penalized twice, with both lower mean wages and greater wage inequality. The 'inequality-adjusted' gender gap is significantly larger than sugested by mean wage differences, especially in East Germany. We take advantage of a hypothetical risky investment question collected in 2004 in the SOEP to estimate individual risk aversion measures and use those to tune our inequality-adjusted wage differentials measure.

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#### A Theoretical Model of the Chinese Labor Market

Gary Fields, Yang Song Session 8.5

This paper constructs a theoretical labor market model for China, and utilizes the model to examine the effects of various labor market policies on economic well-being. Two key features of the model are a segmented labor market involving three sectors - state-owned enterprises, private enterprises, and agriculture - and China's unique household registration system (hukou). The major existing theoretical models of employment and development - the Lewis model, the integrated labor market model, the Harris-Todaro model, and various segmented labor market models - stylize different developing countries' labor markets in other ways but do not include these two key features.

The paper first formulates the equations of the model, then obtains a closed form solution given initial conditions, and then deduces the labor market and welfare consequences of several policy interventions, which include promoting rural development, reducing the cost-of-living in urban areas for rural hukou holders, and offering some rural workers the chance to convert from rural to urban hukou status. These policy interventions are analyzed using two alternative welfare criteria: first-order stochastic dominance and an abbreviated social welfare function. Using both social welfare criteria, it is shown that the rural development policy is unambiguously welfare-improving, while the other two policies have ambiguous effects on social welfare. None of these policies is unambiguously welfare-decreasing.

#### Informal labor market and access to education in developing economies

Eliane El Badaoui, Therese Rebiere Session~8.5

This article studies the impact of access to education on labor market flows in a search-matching model of a labor market representing a developing economy. The segmented market embodies a lower-tier informal sector, a formal sector, and an upper-tier informal sector. An increase in education raises the size of the formal sector and reduces that of the lower-tier sector but more educated workers enter into informality. When the education program is subsidized by a tax in the formal sector, overall results require data calibration that we perform with the ENOE Mexican data set. It then addresses the issue of the impact on the market efficiency of public policies aiming at increasing education.

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# Microfinance Spillovers: a Model of Competition in Informal Credit Markets with an Application to Indian Villages

Timothee Demont Session 8.5

Despite widespread interest in the development of microfinance, spillover effects on the non-using population and redistributive issues remain largely unexplored. This paper studies the channel of local credit markets. Using a two-sector model of lending under adverse selection, I characterize the conditions under which composition externalities dominate competitive pressures, triggering an increase in the equilibrium interest rate charged by traditional moneylenders and affecting the welfare of borrowers outside microfinance. The main predictions of the model are shown to fit first-hand panel data about financial transactions in a sample of Indian villages that enjoy varying sizes of the microfinance sector over space and across time.

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#### Partisan Tax Policy and Income Inequality in the U.S., 1979-2007

Olivier Bargain, Mathias Dolls, Herwig Immervoll, Dirk Neumann, Andreas Peichl, Nico Pestel, Sebastian Siegloch Session 8.6

We assess the effects of U.S. tax policy reforms on inequality by applying a new decomposition method that allows us to disentangle the direct policy effect from the effect of changing market incomes. Over the whole period 1979-2007 the cumulative tax policy effect aggravated income inequality by increasing the income share of the top 20% in contrast to the middle class' share. The tax policy effect accounts for up to 29% of the total change in inequality; its contribution increases up to 41% if we take into account behavioral responses. Using our unique policy effect measure and variation in tax policies across U.S. states and time, we also identify the redistributive intention of policymakers. The estimated effect of partisan politics on the U.S. income distribution is statistically

significant and economically important. Republican policymakers increased inequality especially at the top whereas Democrats increased the income share of the bottom 80% of the distribution.

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#### High Incomes and Personal Taxation in a Developing Economy: Ecuador 2003 - 2010 Liliana Cano, Facundo Alvaredo Session 8.6

This paper provides new evidence about the evolution of top incomes in a developing economy. We present series of top income shares in Ecuador between 2003 - 2010, based on individual income tax data and national accounts. We find three main empirical results. First, income in Ecuador is highly concentrated on the top 1 per cent of the income distribution. In 2010, the income share held by the richest 1\% of the population reach almost 25 per cent of total income. Second, high income individuals in Ecuador are mostly rentiers and capital owners; most of their income comes from returns to capital. This trend differs from evidence found in developed countries in recent decades, where the rise in top incomes during the last years is mostly due to a surge in top wage incomes. And third, while recent evidence based on household's surveys shows that income inequality has decreased since the 2000's in most Latin America countries, top income's analysis shows a different situation. In fact, when Gini coefficient takes into account higher incomes reported to tax files, income inequality level is much higher and significant.

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#### Declining Tax Progression and the German Dual Income Tax Katharina Jenderny

Session 8.6

This paper analyzes the effect of the introduction of a final withholding tax on capital income on the progression of the German income tax. As previous literature shows, even with synthetic income taxation, tax progression was strongest in the middle of the income distribution, and decreased for high incomes. At the top, notably for the richest top 0.001\% of potential taxpayers, tax progression was not further observable. In 2009, the tax schedule changed and capital income was excluded from the synthetic income tax tariff. Instead, it is taxed at a lower final withholding tax rate. This paper explores the effect of this change on the overall progression on total income. The analysis is based on a microlevel panel dataset of income tax returns between 2001 and 2006, which provides information on the distribution of total taxable income and is particularly representative for the top of the income distribution.

### Bequest Motives, Estate Taxes, and Wealth Distributions in Becker-Tomes Models with Investment Risk

Shenghao Zhu Session 8.7

I introduce investment risk into Becker and Tomes (1979) model and reinvestigate the impacts of bequest motives and estate taxes on wealth inequality. Contrasting with Becker and Tomes (1979) and Davies (1986), I find that bequest motives increase wealth inequality and estate taxes reduce wealth inequality. Furthermore in my model the impacts of estate taxes on wealth inequality does not depend on the redistribution of tax revenues. Different from Davies (1986) I also find that economic growth decreases wealth inequality.

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### Social Mobility at the Top: Why are Elites Self-reproducing Joel Hellier, Elise Brezis

Session 8.7

The paper analyses the impact of the structure of meritocratic education systems upon the emergence and self-reproduction of the elite. We build an intergenerational model in which tertiary education comprises elite and standard universities, with different expenditure per student and selection patterns. Even if education differences between families are initially low, this system generates an enlargement of these differences resulting in the emergence of an elite group that is to a large extent self-reproducing. The higher the relative funding of elite universities, the higher the elite self-reproduction, and the lower social mobility. The increases in the shares of both the middle class and the elite in the population raise social mobility for the generation when they occur but decrease mobility for the subsequent generations. These findings provide explanations for several observed facts and a theoretical basis for the 'Great Gatsby Curve'.

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### Earnings Mobility and Inequality: An Integrated Framework

Claudia Vittori, Paul Gregg, Rosanna Scutella Session 8.7

In this paper we propose an integrated framework for the analysis of earnings inequality and mobility, which enables the analysis of the distributional dimension of inequality reduction from mobility, an assessment of the economic drivers of mobility and a sense of which drivers are equalising and dis-equalising. The framework also offers a bounded approach to isolating the underlying inequality reduction resulting from mobility from measurement error which can otherwise lead to a substantial upward bias. Using data from the Australian HILDA survey we find evidence of a sizable degree of earnings mobility in Australia over the years 2001/2 to 2008/9. However, there is evidence of substantial measurement error in earnings, particularly in the upper tail, with true mobility lying somewhere between 1/4 and 1/3 of original inequality. Age-earnings growth explains a substantial amount of observed

mobility. Yet this rather smooth picture of earnings rising with age is shown to be substantially driven by a series of less frequent step changes associated with job-to-job moves, promotions and taking on more responsibility. There are also shocks which run against this equalising process, most notably job loss, which has substantial negative effects on earnings and disproportionately falls on lower waged workers.

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### Fuzzy poverty measurement and crisp dominance

Buhong Zheng Session 9.1

In this paper we make several contributions to fuzzy poverty measurement. Specifically, we identify a sensible source for the fuzziness in poverty which leads to a natural way to estimate poverty membership function; we provide an axiomatic characterization for an important class of fuzzy poverty measures; and we derive a set of crisp dominance conditions for fuzzy partial poverty orderings.

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### Aggregate Poverty Measures with endogeneous income poverty lines

Benoit Decerf Session 9.1

Ravallion and Chen made the following point in a serie of recent papers: if one considers that the poverty threshold is an absolute concept in the space of welfare and relative income matters for welfare, then the poverty threshold is relative in the space of income. This paper investigates the consequences of such view on the families of poverty indices developed in the aggregate poverty measures literature. I extend its traditional framework by adding a new object: a preference relation in the space of income and average income. This preference is a normative choice made by the social planner. She uses it to evaluate the welfare of individuals present in income vectors. The income poverty line is made endogenous in this extended framework as it evolves with the vector average income, in order to be consistent with the poverty welfare threshold. The poverty indices derived are then required to respect the welfare judgments held in the chosen preference relation. An axiom encapsulating this idea is therefore introduced: Strong Pareto among the poor. The paper derives the functional form of poverty indices for certain domain of preference relations. The domain of piecewise linear preference relations are of particular interest as it contains, as special case, the weakly relative poverty line derived empirically by Ravallion and Chen.

#### Utility Independent Subjective Poverty Line and Equivalence Scales

Andrew Grodner, Rafael Salas Session 9.1

Most subjective poverty lines and subjective equivalence scales have been rationalized in the literature by assuming a cardinal utility framework, an approach which greatly restricts their use within the standard microeconomic theory. However, we show that an approach based on a Minimum Income Needs Question (MINQ) allows for flexible specification of preferences. It requires two basic assumptions: (i) the minimum income perception which assumes systematic perception errors that can be isolated by the intersection method, and (ii) equivalent utility which assumes that households at the true minimum income have the same utility level across various demographic characteristics. Because neither assumption imposes any additional limitations on the underlying utility function we conclude that the subjective equivalence scales based on MINQ are utility-independent and can be used in applications requiring sound theoretical foundation such as estimation of the demand systems.

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# Ambitions, effort and circumstances in higher education: Do European Students Favour Responsibility-Sensitive Fairness?

Christine Le Clainche, Jérôme Wittwer Session 9.2

Abstract: Economic or social background of the parents is found to explain success of the offsprings at school or in life. Different pathways either through intergenerational transmission of income or of ambitions or preferences may explain such an evidence. According to this evidence, in this paper, we document the extent to which a sample of European students (from Denmark, France, Italy and Sweden) consider that individuals should assume together with the state the paying of the costs of education choices. Using an empirical social choice methodology, we test the acceptability of different ways of financing costs of education more or less associated with effort or ambitions in accordance with a normative framework relating to responsibility-sensitive fairness. It appears that individuals of our sample consider more often that ambitions belong to responsibility characteristics than effort does. This principally means that the students are not willing to subsidy the differences of ambitions. Lastly, we find that students' nationality has a small influence but that danish students seem to hold more clear-cut judgments than the others.

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The Power(lessness) of the State. The Reproduction of Educational Inequalities by the Welfare State.

Ronny König Session 9.2 Previous research on social stratification reveals that social inequalities in educational and thus occupational opportunities are still a feature of modern societies. Against this background this article regards the intergenerational reproduction of educational inequalities and how this connection can be affected by specific welfare state patterns in 13 European countries. For the analyses micro-data from the Survey of Health, Ageing and Retirement in Europe (SHARE) and macro data from several sources (e.g. Eurostat, OECD and UNESCO) have been used. With this approach it is possible to combine a multi-level perspective in a two-level model. The broad comparative perspective allows an identification of different institutional influences, namely direct or indirect governmental investments in education, nationally-specific shifts in the labor market as well as demographic changes. In general, multi-level estimates on 32,738 individuals show the perpetual importance of the family of origin and the reproduction of educational inequalities over generations. Furthermore, the overall hypothesis that both welfare state arrangements and labor market indicators have an influence on the educational attainment could be confirmed. In addition, contextual characteristics can partly counter the influence of social origin and therefore reduce the intergenerational transmission of educational opportunities.

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### Subjective social position: are countries polarized? An international comparison based on individual characteristics

Chiara Assunta Ricci Session 9.3

This paper analyses subjective social position, an ordinal variable drawn from the International Social Survey Program (ISSP) 2009 which indicates people's own opinions of their location in society across more than 35 countries. The purpose is to investigate what lies behind the sense of identity or alienation observable within a community (Esteban and Ray, 1994). Using the measures of ordinal segregation proposed by Reardon (2009) and the polarization measures suggested by Fusco and Silber (2011), we evaluate the differences between countries in people's judgment on their relative social condition, verifying the heterogeneity of answers in each country and to what extent the distribution of people among the scale depends on the individual features sex, education and profession. In this way, intending the polarization phenomenon as a high homogeneity of the answers within each group and a high level of heterogeneity between groups, it is possible to make some considerations on people's perception of social structure and the possible effects on their behavior and choices. What emerges is that, on the one hand, some common trends are observable across countries but, on the other hand, there are significant differences between nations in how people judge their relative social condition.

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# The Decomposition of Well-Being Categories - An Application to Germany Juergen Faik, Uwe Fachinger Session 9.3

In the paper, a combined approach is used to test for inequality differences of several well-being categories for a number of groups of persons. Hereby, total inequality is decomposed into within- and into between-group/category

inequality (via a normalised coefficient of variation as the inequality indicator used). The decompositions are categorised into those referring to socio-demographic characteristics (age, sex, nationality, place of residence, household type) and those belonging to different well-being (sub-)categories (several income, wealth, and expenditure categories). Based on the methodical setting, empirical analyses are performed for Germany using the 2008 German Sample Survey of Income and Expenditure (Einkommens- und Ver-brauchsstichprobe; EVS) as the database. Out of our numerous findings for both kinds of decomposition, the overwhelming role of within-group/category inequality becomes evident. By decomposing German (material) well-being inequality in great detail, we shed light on its dimensions, showing that decomposition by income, wealth, and expenditure, as well as by socio-demographic characteristics is important to draw adequate solutions for socio-political measures. Not considering the fact, from where the real inequality stems from, is like barking up the wrong tree and bears the danger of false political measures regarding social and distributional policy.

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### Poverty and Well-Being: Panel Evidence from Germany

Andrew Clark, Conchita D'Ambrosio, Simone Ghislandi $Session\ 9.3$ 

We consider the link between poverty and subjective well-being, and focus in particular on the role of time. We use panel data on 42,500 individuals living in Germany from 1992 to 2010 to uncover four empirical relationships. First, life satisfaction falls with both the incidence and intensity of contemporaneous poverty. There is no evidence of adaptation within a poverty spell: poverty starts bad and stays bad in terms of subjective well-being. Third, poverty scars: those who have been poor in the past report lower life satisfaction today, even when out of poverty. Last, the order of poverty spells matters: for a given number of poverty spells, satisfaction is lower when the spells are concatenated: poverty persistence reduces well-being. These effects differ by population subgroups.

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## The Occupational Segregation of Black Women: A Look at its Evolution from 1940 to 2010

Olga Alonso-Villar, Coral Del Río Session 9.4

Based on harmonized and detailed occupation titles and making use of measures that do not require pair-wise comparisons among demographic groups, this paper shows that the occupational segregation of black women dramatically declined from 1940 to 1980 (especially in the 60's and 70's), it slightly decreased from 1980 to 2000, and it remained stagnated in the first decade of the 21st Century. To assess the reduction in segregation in terms of wellbeing, this paper uses several recent tools which penalize the concentration of black women in low-paid jobs and finds that the integration process slightly reversed after 2000. Regarding the role played by education, this study highlights that only from 1990 onwards black women with either some college or a university degree have a lower segregation (as compared to their peers) than those with a lower education. Nevertheless, in 2010 black women with a university degree still tend to concentrate in occupations that have wages below the average wage of

occupations that high-skilled workers fill.

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### Ordinal Gender Segregation by Occupation in Australia 1996-2013: Conceptual and Measurement Issues

Martin Watts Session 9.4

A major criticism of traditional indexes of occupational segregation is that they measure nominal differentiation, rather than recognizing that occupations differ with respect to skills and status. Recent work by Reardon (2009) and Silber and Yalonetzky (2011) has explored the conceptual foundations of the measurement of ordinal segregation and developed particular index specifications. This paper i) assesses the properties of these proposed indexes, taking account of the properties of indexes designed to measure nominal segregation; and ii) applies these measures of ordinal segregation to both an illustrative example and quarterly Australian occupational employment by gender, complemented with a recently constructed ordinal measure of occupational status, for the period August 1996 to February 2013. The results reveal both the possibility of anomalous results if Reardon's general specification is employed and also large and inconsistent rates of change of index magnitudes, when the index functional forms recommended by the above authors are utilized. A priori, in the absence of a strong intuitive view about how ordinal segregation should be measured, it is hard to judge whether the results are data driven or a consequence of an inappropriate, underlying index specification. The inconsistency of the results across the index functional forms adds to the difficulty of interpreting the results.

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# The Determinants of Activity Rates in Some Southern European Countries Raffaella Patimo, Thais Garcia Pereiro, Rosa Calamo Session 9.4

Activity rates in Southern Europe (Greece, Spain, Italy and Portugal) have systematically been quite low if compared to EU standards: Italy is the laggard with 42.4 percent in 1995, compared to 56.8 percent in EU-15. Nevertheless, in the last thirty five years the general trend in the region has been characterized by a considerable and continuous increase, especially in female participation in labor market activities. Cross-country comparisons highlight quite some heterogeneity degrees, and these are attributable to geographical and gender differences. These circumstances, by definition not under the control of individuals (Checchi & Peragine 2010), hamper the very decision making processes of participating in labor market, even before the action (effort) of looking for an employment position. It is argued that the hypothesis of "discouraged worker" may be enhanced by the existence of those circumstances rather than weakened or cancelled out by the individual's effort. The main purpose of this paper is to shed some light on factors that have determined different patterns of participation in the labor markets across countries and genders as well as on the reasons behind the observed trends over the past decades. The original part of it will be the attempt to embody some role for cultural variables (using European Values Survey based indicators) in the empirical analysis. The study is based mainly on data drawn from Eurostat. Female activity rates are analyzed focusing

on international comparisons, gender gaps and age components, and then each one of its selected determinants (educational level, fertility, union formation patterns, and public expenditure, culture) is studied in simple linear regressions to describe the one-to-one relationship established. The last step is the multivariate analyses (panel regressions) that will be carried out to measure (at the net of other variables) how these factors are associated altogether with activity rates.

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#### The Impact of Internal Migration on Local Labour Markets in Thailand

Eliane El Badaoui, Eric Strobl, Frank Walsh Session 9.5

We estimate the impact of internal migration on local labour markets in Thailand. Using an instrumental variable estimation to control for the endogeneity of migration we then investigate how migration affects various aspects of local labour markets. Our results show that there appears to be a positive effect on male earnings, although only if these are measured in weekly terms. Net inward migration, in contrast, has strong negative effects on the female labour market. More specifically, we find that not only does it unequivocally reduce women's earnings, but also reduces the number of hours they work.

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#### Inter-jurisdictional migration and the size of government

Michele G. Giuranno, Rongili Biswas Session 9.5

This paper develops a model of centralized public spending where decision-makers are the regional median voters instead of the national median voter of the received literature. Regional representatives decide on the level of public spending by bargaining in the central legislature. We study how exogenous changes in the composition of the regional electorate either deteriorate or mitigate inter-jurisdictional redistributive conflicts and how these, in turn, influence the size of the government. We find the conditions under which migration-induced inter-regional income convergence (divergence) leads either to a bigger or a smaller government. Finally, the relationship between migration and efficiency is explored within the present framework.

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The taxation of commodities when taxes on earnings are not optimal Kevin Spiritus

Session 9.6

The Atkinson-Stiglitz theorem (1976), a commonly cited result favouring a move towards uniform VAT rates, does not apply when earnings taxes are not optimal. Boadway and Pestieau (2011) studied a case where linear income taxes are non-optimal and cannot be changed, showing that with quasilinear preferences over two goods, the luxury good should bear the highest tax rate. I extend this result in two directions. First, I show that this result remains valid for quasi-homothetic preferences, and argue that it is not valid for broader preferences. I further extend this result to more than two goods. Second, I show in a two-period framework of intertemporal choice how saving can be characterized as a luxury or a necessity, and I show that most commonly used instantaneous utility functions - those that exhibit hyperbolic absolute risk aversion - yield quasi-homothetic intertemporal preferences. This enables me to apply the results from the static model to the optimal taxation of capital returns, showing how it can be optimal to tax or subsidize returns to savings depending on the interest and utility discounting rate.

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### Testing Tax-Progressivity and Income-Redistribution: The Suits Approach Jordi Arcarons, Samuel Calonge

Session 9.6

The Suits index is often used in tax policy analysis to measure progressivity and to detect changes in progressivity over time and between different fiscal policies. It is surprising however that little attention has been given to inference issues. In this paper, the limiting distribution of the Suits index estimator is deduced and easily computed plug-in formulae for the index estimator and its sampling variance are provided. By means of a simulation analysis, we prove that inference based on first-order asymptotics performs well for moderately large samples. Bootstrapt-which uses the plug-in variance estimator- appears to be favourable. The accuracy of the proposed inference tests is also illustrated using real data from the Spanish Income Tax.

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# The Redistributive Impact of Taxation when Families are Accounted for: Evidence from Italy

Mario Mezzanzanica, Alessandro Santoro, Stefano Verzillo  $Session\ 9.6$ 

The analysis of the redistributive effect of taxation is usually limited by available data, which it makes virtually impossibile to reconstruct tax families, i.e. families for tax purposes. The dataset we use in this paper is quite exceptional for two reasons. First, it includes the entire set of tax declarations issued by taxpayers living in a Region of North of Italy in a given year (2010). Thus, sampling errors are excluded and measurement errors are kept to a minimum. Second, it allows to reconstruct almost exactly the tax families. Thus we are able to compare at the individual level, on the one hand, the redistributive effect of taxation when actual (or nominal) incomes are considered with, on the other hand, the redistributive effect of taxaton when equivalent incomes, i.e incomes

calculated by taking into account family burdens, are considered.

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# Can the Limitations of Panel Datasets be Overcome by Using Pseudo-Panels to Estimate Income Mobility?

Gary Fields, Mariana Viollaz Session 9.7

This paper analyzes whether pseudo-panels are suitable substitutes for true panels for estimating income mobility. We obtain evidence using Chilean panel data for the period 1996-2006 and constructing pseudo-panels treating each round of the panel as if it were an independent cross-section survey. We consider three different pseudo-panel methods: the mean-based approach that identifies cohorts and follows cohort means over time, the method developed by Bourguignon, Goh and Kim (2004) that was designed to estimate vulnerability-to-poverty measures, and the method of Dang, Lanjouw, Luoto and McKenzie (2011) that predicts a lower and upper bound for the joint probabilities of poverty status in t=1 and t=2. The empirical evidence leads us to conclude that pseudo-panel methodologies do not perform well in this task. Our results indicate that pseudo panels fail in two respects when trying to predict the income mobility pattern observed in Chile. First, they do not give good results for the mobility concept each pseudo-panel method seeks to measure. Second, they also perform poor in predicting a broader set of income mobility measures. We complete the analysis making a final point about the calculation of poverty transition rates using pseudo-panels.

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### Lifetime Earnings Inequality in Germany

Timm Bönke, Giacome Corneo, Holger Lüthen Session 9.7

German social security records show that intra-generational lifetime earnings inequality is about two-thirds of the corresponding inequality of annual earnings. Within cohorts, mobility in the distribution of yearly earnings is substantial at the beginning of the life cycle, decreases afterwards and virtually vanishes after age forty. We detect a striking secular rise of intra-generational inequality in lifetime earnings: West-German men born in the early 1960s are likely to experience about 85% more lifetime inequality than their fathers. In contrast, both short-term and long-term intra-generational mobility are stable. Longer unemployment spells of workers at the bottom of the distribution of younger cohorts contribute to explain 20 to 40% of the overall increase in lifetime earnings inequality.

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