EXPLORING
THE ECONOMIC ASPECTS OF
AGING
SOCIETIES

mea
MAX PLANCK INSTITUTE FOR
SOCIAL LAW AND SOCIAL POLICY
Munich Center For The Economics Of Aging

MEA'S MISSION

The Munich Center for the Economics of Aging (MEA) is one department of the Max Planck Institute for Social Law and Social Policy. The mission of MEA shall be to analyze, evaluate, anticipate and accompany the micro- and macroeconomic aspects of demographic change. MEA's core task shall be to develop empirical models based on German, European and global data, to a significant extent collected by MEA itself. In addition to predicting future developments, these models shall be used to analyze policy measures that affect economic and social developments precipitated by population aging. The projections resulting from MEA's models shall enable MEA to deliver sound scientific advice for economic and social policy.

DEMOGRAPHIC CHANGE

Demographic change is one of the grand challenges of the 21st century. The sheer size of the upcoming population aging – a doubling in the number of older individuals per young and middle-aged individuals within three decades – is historically without precedence. International migration is another demographic phenomenon that is growing in scope, impact and complexity. The implications for our social systems (public and private pensions, health care, long-term care, and, in a broader sense, also the system of labor market policies) have been discussed many times. Reforms, however, come only reluctantly and recently some major backlashes occurred. Prominent examples are the re-introduction of early retirement at age 63 without actuarial adjustments or the lack of a coherent immigration legislation in Germany. Macroeconomic growth and the international balance of trade and capital flows are affected as well when fewer domestic employees are at disposal to produce goods and services for an essentially stable number of consumers (at least over the next two decades) and when these older consumers will draw down their assets. Some speculate that the merging imbalances might create intergenerational frictions and endanger societal cohesion. These are the research themes at MEA, the Munich Center for the Economics of Aging. They encompass not only social policy in a narrow sense but also macroeconomic performance and societal change.

LABOR MARKET INTEGRATION AGAINST THE BACKGROUND OF EUROPE'S NEW MIGRATION WAVE

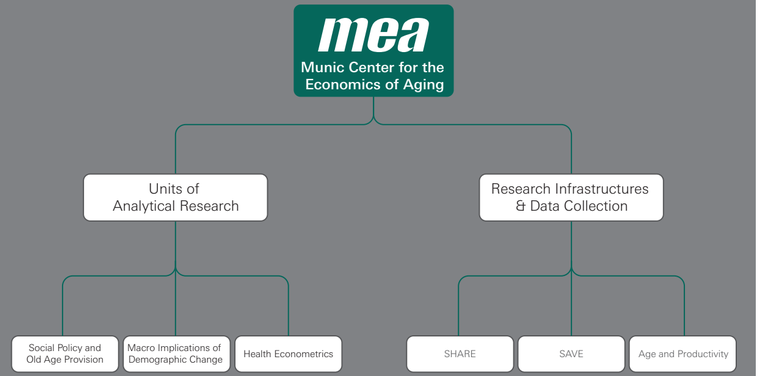
Another emerging discussion that keeps scientists and politicians in Europe busy is whether the increasing migration towards European countries (at least partially) compensates the challenges of demographic aging. While the inflow of refugees, economically motivated migration and family reunification are expected to increase, there is virtually no information on education, skills and ambitions especially of the latest inflow of refugees from Syria and North Africa to Europe. MEA is interested in investigating the selectivity of this new migration wave, the refugees' motives and intentions to stay in European countries and especially the process of their labor market integration. The objective is to estimate the short, medium and long-term implications of the current migration wave for the social systems and whether the inflow of predominantly young migrants attenuates or even intensifies the challenges of e.g. aging workforces.

MEA'S STRUCTURE

MEA is structured into main departments: analytical research and data infrastructures.

MEA's analytical research includes topics related to social policy, especially retirement behavior, public and private pensions. Important focuses of health econometrics are econometric methods that are able to isolate causal effects which generate the gradient of health with respect to social status. Research in the unit "Macro Implications of Demographic Change" encompasses themes around economic growth, productivity and migration. MEA's main data infrastructures are SHARE, SAVE and two "Big Data" sets on age and productivity.

The two-way interaction between analytical research and the construction of data infrastructures is essential to accomplish MEA's mission to perform sophisticated empirical research. Both departments profit from each other in a unique way and therefore allow our researchers to succeed in international first rate research.



STRUCTURAL, SOCIAL AND LABOR MARKET CHALLENGES

MEA's research focus on structural challenges has received particular importance through the recent monetary policy decisions in the aftermath of the financial, economic and debt crises. The structural problems of Europe which are reflected in the European system of social and labor market policies appear to make monetary policies less effective than, e.g. in the US. Without sufficient flexibility, much of the positive impact of quantitative easing appears to get lost in the failure to turn money into jobs, e.g. in the complex interactions between financial and labor markets which result in a low volume of credit to companies which in turn fail to create new jobs. At the same time, the low interest rates reduce the future payments from private pension plans and old-age saving, discouraging the younger generation to provide for old age – another channel through which the crisis, demographic change, monetary policy and social institutions interact negatively.

MEA develops and administers economic models which provide a scientific framework to analyze these interactions and policy measures that affect them. These models are based on German, European and global data, to a significant extent collected by MEA itself, e.g., the Survey of Health, Aging and Retirement in Europe (SHARE). Models at MEA include overlapping generation models on the macroeconomic level, simulation models of the dynamics of pay-as-you-go pension systems, and microeconometric models of economic, health and social behavior. The main objectives for these models are analyses of structural failures and their micro- and macroeconomic consequences.

While the work at MEA is primarily targeted at scientific publications, its mission also includes communicating its research results to the policy community and the public at large, encompassing substantial efforts of scientific consulting for governments in Europe and elsewhere, the European Commission, the Organisation for Economic Co-operation and Development (OECD) and the World Bank.

A central research strategy of MEA is to exploit the international variation in policies and historical experiences in order to better understand the effects of social and labor market policies geared at addressing demographic change. This is why MEA is leading SHARE and why MEA is a member of various international research networks. This strategy gives MEA great international visibility.

As MEA's name suggests, the Center's core analytical work is geared to economics. Interdisciplinary collaboration, however, with empirical sociology as well as epidemiology has grown extensively since MEA was first founded. Cooperation with the other department of the Max Planck Institute of Social Law and Social Policy, the social law department, adds to MEA's institutional modelling. In addition, MEA also undertakes methodological research to accompany its various data collection efforts, especially SHARE.

Foto: © Jan Roeder / MEA

Axel Börsch-Supan studied economics and mathematics in Munich and Bonn and received a doctorate in economics from MIT (Cambridge, USA) in 1984. After working as an assistant professor of public policy at Harvard University (1984-1987) and as professor of economic theory at the University of Dortmund (1987-1989) he was professor of macroeconomics and economic policy at the University of Mannheim (1989-2011).

In his role as director of the Max Planck Institute for Social Law and Social Policy in Munich, he is heading the Munich Center for the Economics of Aging (MEA) since 2011 and is also professor of the Chair for the Economics of Aging at the Technical University of Munich (TUM). Professor Börsch-Supan is a full member of the Berlin-Brandenburg Academy of Sciences and German National Academy of Sciences Leopoldina and a corresponding member of the Austrian Academy of Sciences. He scientifically coordinates the Survey of Health, Ageing and Retirement in Europe (SHARE) and is Managing Director of SHARE-ERIC. Furthermore, he is a member of the Council of Advisors to the German Economics Ministry (chair 2004-08), a member of the German federal governments' Expert Group on Demography and has served as a consultant to the European Commission, the World Bank, the OECD and several foreign governments

UNITS FOR ANALYTICAL RESEARCH

OLD-AGE PROVISION AND SOCIAL POLICY

Among MEA's three analytical research units, the "Old-Age Provision and Social Policy" unit is the closest to actual policy, especially public pension policy in Germany.

While it includes international comparisons, the main work is on the reform process towards a demographically more stable multi-pillar public pension system and its recent backlashes in Germany. A detailed simulation model is used as a tool to model the German public pension system (MEA-PENSIM) and the effects of, e.g. the re-introduction of early retirement at age 63 in Germany. The unit also exploits the SAVE panel to study the development of the occupational pensions' and individual accounts' pillars, especially the "Riester pensions" (the heavily subsidized individual accounts), with a focus on tax incentives, nudging mechanisms and the provision of financial information.

In its international work, researchers exploit the SHARE data to study retirement behavior, especially the interaction between work and health, partially in collaboration with several projects under the auspices of the National Bureau of Economic Research (NBER). In its econometric work, researchers study the advantages and shortcomings of the option value model which has received so much prominence in analyzing retirement decisions. This work is based on SHARE data as well as a large administrative data set provided by the German public pension provider ("Deutsche Rentenversicherung").

MAIN ACHIEVEMENTS

MEA-PENSIM – A UNIQUE SIMULATION MODEL

Researchers developed the pension policy evaluation tool, the MEA-PENSIM model (Gasche et al. 2012). It is one of the rare non-government pension simulation models that allows the simulation of the future development of the German public pension system. The main feature is a flexible modeling of the current and alternative institutional environments, e.g. early retirement rules and indexation formulae with respect to wages, employment and demography.

MEA-PENSIM takes into account the current population structure and allows for different future demographic and labor market scenarios. Despite the complexity of the model it is easy to handle so that reform options can be implemented and their consequences can be analyzed at short notice. Recent working papers are related to the 2013/2014 pension reform package that re-introduced early retirement at age 63 (Börsch-Supan et al. 2012a and Börsch-Supan et al. 2014) and more generous pension benefits for mothers (Bach et al. 2014).

Even though the main task of MEA-PENSIM is the pension simulation, additional modules exist for the estimation of the future development of the public health and care insurances since 2014 (Rausch and Gasche 2014).

PUBLIC POLICY CONSULTING

MEA's Social Policy unit has been an important consultant for pension reforms independent of the governing coalition (2012 – 2014 consultants for the former CDU/CSU/FDP led government as well as for the current CDU/CSU/SPD led government). The Social Policy unit has completed three large consultancy projects for two ministries of the German Federal government: on current and future old-age poverty, on actuarial adjustments in the public pension system and on flexible pathways to retirement. All three expert reports produced a large media echo, especially the study on old-age poverty (Börsch-Supan 2013 and Börsch-Supan et al. 2013). Another prominent study evaluated the costs of Riester pensions (Gasche et al. 2013 and Börsch-Supan et al. 2012b and Gasche 2012). The study revealed a very large heterogeneity of costs among Riester contracts. Measured as per-cent of contributions, administrative and marketing costs ranged between 2 and 20%, with an average of 12%.

THE INTERNATIONAL SOCIAL SECURITY PROJECT (ISSP)

The unit for Old-Age Provision and Social Policy is also the German participant in the International Social Security Project (ISSP) led by David Wise (and formerly Jon Gruber). Main focus was an econometric estimation of the probability to exploit disability insurance as a pathway to early retirement (Börsch-Supan and Jürges 2012 and Jürges et al. 2014). These studies have precipitated some methodological research on the suitability of the option value as a tool to analyze retirement decisions (Börsch-Supan 2014). Next, the focus of the project will be on exploring and trying to explain the increases in older men's labor force participation and employment over the past 20 years.

RESEARCH OUTLOOK

WELL EQUIPPED FOR THE BABY BOOMERS

The Social Policy unit will keep maintaining its routine portfolio of continuously monitoring German pension policies and commenting on the ups and downs of the pension reform process based on the MEA-PENSIM policy evaluation tool. This will become especially interesting in the next decade during which the baby boomers will retire. The baby boom is particularly sharp and pronounced in Germany due to the postponement of births during the hunger years after World War II. The coming decade will thus be a historically unique chance to observe and analyze the demographic transition in Germany with its huge impact on pensions, health care and economic growth. MEA is well equipped to benefit scientifically from this unique chance.

INTERNATIONAL COMPARISON

Notwithstanding MEA's specific role in Germany, the Research unit intends to put more emphasis on international comparisons and econometric analyses, in particular based on the SHARE data and data from associated aging surveys such as HRS, ELSA, JSTAR and CHARLS. The unit will focus on comparative analyses of retirement and saving behavior in Europe, the US, Japan and China, exploiting the network of international researchers that has been formed through these surveys. Researchers are especially interested in better understanding contractual saving (most prominently old-age provision) which varies a great deal across these countries and appears to generate a non-smoothing consumption behavior. International comparisons will also shed more light on the successful implementation of pension policy reforms. The research unit is especially interested in investigating the extent to which flexible retirement policies, which allow older workers to retire gradually, are successful in extending their working lives.

LINKING SURVEY DATA AND ADMINISTRATIVE DATA

A third aim for this Research unit is to exploit combinations of survey data with large administrative data sets that have become available in Germany and increasingly also in other European countries. For instance, the SHARE data have been linked by MEA with the employment and earnings histories of the public pension files (Korbmacher 2014). In a recent project these data are used to identify those workers who benefit from the new early retirement pathway "retirement with 63" while describing their socio-economic and health status using SHARE (Börsch-Supan et al. 2015). Analyzing these data requires enhanced econometric methods due to the different selection and data generation processes. We are especially interested in using these data for retirement analyses with more sophisticated models than the option value model which appears to create systematic biases. Moreover, SHARE-RV allows us to combine very detailed information on the occupational and the private pillars from SHARE with information on entitlements from public pensions from administrative data. In this way we can investigate whether German households save enough to fill the emerging pension gap that is being generated by the gradually declining generosity of the public pay-as-you-go pensions in response to population aging.

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MACRO IMPLICATIONS OF DEMOGRAPHIC CHANGE

The research unit "Macro Implications of Demographic Change" focuses on projecting the economic implications of demographic change and on the research on the relevant micro relations, e.g. how does the productivity of the growing number of older workers develop. A recently added field of research is on the selectivity of the current migration to Western Europe with respect to labor market relevant skills. In the first field, the unit constructs dynamic macroeconomic models that project the overall economic implications of demographic change for labor, capital and goods markets and compiles the microeconomic foundations for "feeding" these macro-economic models, namely saving, employment and productivity which rest on data collection efforts and analytical research. The work centers on the consequences of demographic change for growth, capital accumulation and returns on investment, international capital movements, consumer demand and productivity as a function of social policies. This term is taken in a very broad sense, starting with education and health at childhood, and continuing with positive and negative feedback cycles during adult life strongly influenced by economic, health and social policies. The main work horses are variants of overlapping generation models which are calibrated to historical data of the three major European economies: France, Germany and Italy with their strong variation in demography and social policy. In the second field, to research the relationship of age and productivity, large high-frequency process generated "Big Data" on team composition and output are used to unambiguously identify the factors that affect the slope of the age-productivity profile. The main aim of a recently added third field is to collect more information on the second major demographic phenomenon in several western countries: the increasing inflow of migrants and refugees.

MAIN ACHIEVEMENTS

MEA'S COMPUTATIONAL GENERAL EQUILIBRIUM (CGE) MODEL OF AGING ECONOMIES

MEA's CGE model of aging economies combines a set of features which is globally unique and therefore continues to produce interesting results. It provides a detailed model of retirement and pensions and their implications for saving and growth in an international setting of free trade and capital flows which is so important for European countries. Recent refinements of the model based on overlapping generations (OLG) include a labor supply function that is partially exogenous (e.g. via a stiffening of early retirement rules) and partially endogenous (e.g. allowing workers to partially circumvent such stiffened rules). This feature permits an estimate of the expected behavioral backlash to pension reform (Börsch-Supan and Ludwig 2013; Börsch-Supan et al. 2014).

AGE AND PRODUCTIVITY IN MANUFACTURING

We studied the relation between workers' age and their productivity in work teams, based on a unique high-frequency process generated data set that combines "Big Data" on errors occurring in the production process of a large car manufacturer with detailed information on the personal characteristics of workers related to the errors (see also chapter Research Infrastructures, Age and Productivity). Even with correction for non-random sample selection and the potential endogeneity of the age-composition in work teams the results suggest that productivity in manufacturing does not decline at least up to age 60 (Börsch-Supan and Weiss 2013).

RESEARCH OUTLOOK

UNDERSTANDING LONG-RUN GROWTH OF AGING ECONOMIES

One research area is the further development of the overlapping generations model (OLG model). A special focus will be on (a) an even more refined labor supply model in order to endogenize the retirement decision in a complex institutional environment, and (b) to include health and education choices into the OLG model in a way that can be linked with the life history data that is obtained in SHARE Wave 7. The key idea is to feed life-course data from SHARE in order to calibrate such a multi-state OLG model and to better understand the long-run growth of aging economies as a function of the trade-off between investments into the younger generation and benefits for the older generation.

EXPLORING PRODUCTIVITY EFFECTS IN DEPTH IN THE SERVICES

In the research area, age and productivity, a new high-frequency "Big Data"-base for a large scale financial service firm provides a strategic research site that offers many so far unexploited possibilities with respect to non-manual labor settings (see chapter Research Infrastructures, Age and Productivity). First of all, we will study which factors affect the slope of the age-productivity profile in the services. We have a wide range of variables to be considered here: Individual characteristics like sex, education, job tenure; team characteristics like team size, female share, average education, average job tenure, fluctuation within the team, work load; more global factors like weather variables, seasonal variables, days of the week and time trends. They all might affect how productivity evolves with age and understanding these relations is important to keep older workers productive. The fact that we have daily information on productivity (and also on sick leave) allows us to study questions where daily timing is important: Is vacation productivity enhancing? If so, how long does it last? How many days of leave are maximizing productivity? How long a period without any vacation is harmful to productivity? Are there differences between young and old workers? Similar questions can be studied looking at sick leave rather than productivity. We will also exploit our high-frequency data to study whether productivity among older workers is more stable and thus more reliable. We will thus look not only at the expected productivity conditional on age but also on its second conditional moment. Finally, we will study the effects of team composition with regard to age, sex, education, turnover, etc. on productivity and sick leave. The main research question is to better understand under which circumstances diversity is productivity enhancing, and when it will impede communication and team cohesion and thereby harm productivity or increase sick days.

POTENTIALS OF THE NEW MIGRATION WAVE

The recent steep increase in inflows of migrants into several Western European countries and the expected considerable demographic change of the predominantly young migrants form the starting point of the newly added third research field. To understand the implications for the social systems, and to incorporate the effects into macro models, we need more information on the potentials of this new migration wave, i.e. is it a selective inflow of the highly skilled or rather the opposite? To that end we plan a survey to collect information on the skills, health and life history of migrants and refugees. This allows us to make inferences what exact conditions triggered their migration. In addition, we expect insights on specific new integration problems, e.g. caused by traumatic experiences of refugees, and what share will permanently stay in the current destination countries.

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HEALTH ECONOMETRICS

The Research unit "Health Econometrics" adds health and life expectancy to the abstract figures of modern economics. Key economic decisions taken by individuals, such as labor force participation and saving behavior, depend on their health status – just as, vice-versa, people's economic and social status will influence their health and longevity. This correlation is based on numerous – partly self-reinforcing, partly countervailing – mechanisms such as the effect of education on health behavior; the potentially rationing effect of the health care system and its financing in particular the design of insurance systems; the effect of serious illness on performance ability, often already experienced by school children; and the effect of the general macroeconomic environment on long-term health outcomes.

Measuring and identifying the importance of these mechanisms in each individual case with its life circumstances constitutes a difficult empirical task which is supported by SHARE, especially its life histories, and other data sources. Specific projects on which the Health Econometrics unit is currently working on include the effects of retirement on health and cognitive abilities, the long-term effects of fertility and labor market choices on parental health and selection problems in insurance markets. The focus thereby is on advancing econometric methods and developing strategies to estimate causal effects.

MAIN ACHIEVEMENTS

The focus of this Research unit is on applying state-of-the-art statistical and econometric methods to applied questions with focus on health economics and insurance. In most of the work, the researchers combine empirical questions with theoretical contributions in terms of novel identification strategies or advances in econometric modelling.

ANALYZING GERMANYS HEALTH CARE REFORM

Using a unique identification strategy, we analyzed the 2004 health care reform in Germany (Farbmacher and Winter 2013). When health insurance reforms involve non-linear price schedules tied to payment periods (for example, fees levied by quarter or year), the empirical analysis of its effects has to take the within-period time structure of incentives into account. The analysis is even more complicated when demand data are obtained from a survey in which the reporting period does not coincide with the payment period. We illustrate these issues using a health care reform in Germany as an example which imposed a per-quarter fee of 10 € for doctor visits and additionally set an out-of-pocket maximum. As opposed to less sophisticated evaluation studies, we find a substantial reform effect – especially so for young adults. Moreover, nonlinear price schedules generally have heterogeneous effects on health care demand (Farbmacher et al. 2013).

TESTING ASYMMETRIC INFORMATION IN INSURANCE MARKETS

A second central theme was the extent of asymmetric information in insurance markets. We developed a new nonparametric test for asymmetric information (Su and Spindler 2013) and analyzed selected insurance markets (Spindler 2014; Spindler et al. 2014). Motivated by the literature on testing conditional independence, we propose a new nonparametric test for asymmetric information which is applicable in a variety of situations (Su and Spindler 2013). While Finkelstein and McGarry in 2006 find no positive correlation between risk and coverage in the long-term care insurance market, our test detects asymmetric information using only the information that is available to the insurance company. With regard to insurance that pays cash benefits for each day spent in hospital we detect asymmetric information for low insurance sums but not for high sums.

EDUCATION, WORK AND COGNITIVE ABILITIES

A third important topic of the Health Econometrics unit was the analysis of cognitive abilities at older ages. Using a minimum school-leaving age reform in England, researchers find a large effect of education on males' memory and executive functioning. This result is particularly remarkable as the reform had a powerful and immediate effect on about half the population of 14 year olds (Banks and Mazzonna 2012). Furthermore, they investigate the relationship be-tween retirement and cognitive abilities using SHARE (Mazzonna and Peracchi 2012; Mazzona 2014; Börsch-Supan and Schuth 2014; Mazzonna and Peracchi 2014). The human capital framework suggests that retirement may cause an increase in cognitive decline, since, after retirement, individuals lose the market incentive to invest in cognitive repair activities. The empirical results, based on an instrumental variable strategy to deal with the potential endogeneity of retirement, confirm this key prediction. They also indicate that education plays a fundamental role in explaining heterogeneity in the level of cognitive abilities.

RESEARCH OUTLOOK

FERTILITY, JOBS AND FAMILY

The Research unit will set one future focus on the relation between fertility and maternal education, working status, income and health. A central problem is the endogeneity of the fertility decision. In the context of health, maternal health might directly be related to family size or unobservables such as parents' preferences which may drive both, fertility decisions and risky health behaviors or health care decisions. Using Swedish administrative data, we will be able to link mothers with complete fertility histories to all their children and, at the same time, observe their long-run health outcomes. We are particularly interested in stress-related diseases and causes of mortality as they may shed light on the double burden from job and family.

ECONOMETRIC TECHNIQUES

The group will also deepen their focus on high-dimensional methods ("Big Data") and continue their efforts in the field of generalized method of moments (GMM). High-dimensional statistical methods are relevant for the SHARE project, e.g. in the analysis of biomarkers or genetic information. Potential applications include how biomarkers can be used to predict the subjective well-being grounded on objective measures. The task is to find a parsimonious model with high predictive power. In the case of the collection of genetic information, high-dimensional methods are needed for feature selection, a field which is well-established in biostatistics.

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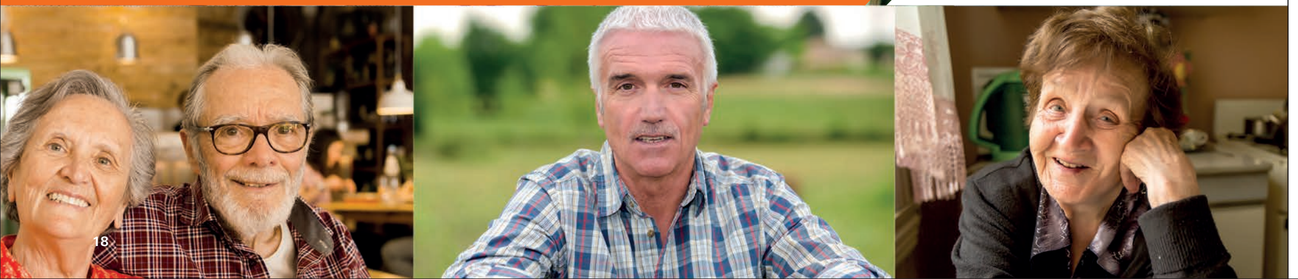
RESEARCH INFRASTRUCTURES

How we age in Europe.

SHARE ERIC
SURVEY OF HEALTH, AGEING AND RETIREMENT IN EUROPE



SURVEY OF HEALTH, AGEING AND RETIREMENT IN EUROPE

SHARE

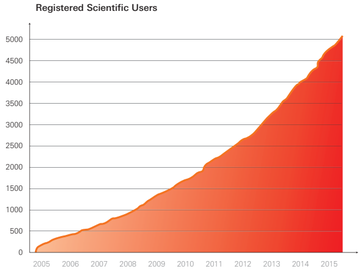
SHARE is a major investment into a research infrastructure by MEA. It makes MEA very different from other Max Planck Institutes in the Humanities and Social Sciences Section. The central management of this multidisciplinary and cross-national panel database of micro data on health, socio-economic status and social and family networks is located at MEA in Munich. Four units are responsible for the Database Management, the Survey Methodology, the Operations and the Research Projects of SHARE. They are supplemented by the Financial Affairs unit and the European Relations unit, the tasks of which are the administration and communication of the survey. For more than 10 years, SHARE is a pillar of the European Research Area. In March 2011, it was given a new legal status by the European Commission as the first European Research Infrastructure Consortium (ERIC) ever.

SHARE is harmonized with the US Health and Retirement Study (HRS) and the English Longitudinal Study of Ageing (ELSA) and has become a role model for several aging surveys worldwide. Similar to the USA's HRS, SHARE's objective is to document and better understand the repercussions of demographic aging for individuals and society as a whole, and to form a sound scientific basis for countermeasures adopted by health and social policy.

SHARE uses strictly harmonized methods to collect data on health, economic status and social integration of persons aged 50 and older in more than 20 European countries and Israel with a large sample of some 123,000 individuals including Wave 1 to 6. The focus is on the interdependence of these characteristics. SHARE is based on (a) an extensive thematic and multidisciplinary scope with measurements that are as objective as possible, (b) longitudinality and (c) strict cross-national comparability with ex-ante harmonized survey tools and methods. This set-up enables users in the world-wide research community to perform comparative analyses of the causes for, and the effects of, social, economic and health-related developments in the course of demographic change on an international scale.

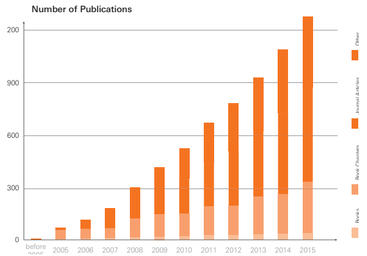
MAIN ACHIEVEMENTS

Measured by user uptake, published scientific articles and policy reports, SHARE has been a huge success (see Börsch-Supan et al. 2013a). SHARE has succeeded surprisingly fast to create a large user community. Our expectations of the number of users, based on related surveys in the US and UK, have been surpassed by far. SHARE has more than 5,000 registered users (December 2015) from all over the world and from a broad range of organizations and disciplines. The SHARE data are currently used in 63 countries (31 European, 4 North and Central American, 5 South American, 5 African, 16 Asian and 2 Oceanian). The largest user group is located in Germany, followed by the United States as second largest user group. It is remarkable that two non-SHARE countries (US and UK) are among the heaviest user nations of the SHARE data. 80.6% of users are affiliated to a university, 7.3% to non-university research institutes and 12% to other institutions, among them the European Commission as single-largest user and several central banks.



SHARE has led to a large number of fundamental and application-oriented research results and generated more than 1,200 publications (December 2015). It has furthermore revealed some surprising findings, which have received widespread attention. The following examples may show the breadth and quality of

successful SHARE-based research – and where they have led to new questions and data requirements.



A EUROPEAN NORTH-SOUTH GRADIENT

Already the first wave of data revealed and later waves confirmed a European North-South gradient in many more dimensions than previously documented (Börsch-Supan et al. 2005; Börsch-Supan 2012; Olshansky et al. 2012 and Börsch-Supan 2013). While the income gradient was known thanks to earlier Eurostat data, the health and subjective well-being differences between the North and the South of Europe was surprising because they contradict mortality data and folklore about a healthy Mediterranean lifestyle. Individuals with low education are 70% more likely to be physically inactive and 50% more likely to be obese than individuals with higher education (Börsch-Supan et al. 2013b). More specifically, cross-country differences between cognitive impairment rates are in line with cross-country differences in education level (Mazzonna 2014), and, maybe surprisingly, there is a clear negative association between depression and income or wealth in the Northern countries, but such an association is completely absent in the South of Europe (Schaan 2013; Schaan 2014 and Kruk and Reinhold 2014).

MORTALITY AND MORBIDITY

These previous observations have inspired the Research unit on Health Econometrics for much of their work. They also pose new fundamental questions, e.g. about the economic, social and medical causes for a divergence between mortality and morbidity, which require more data collection efforts. Since the decrease in mortality and the compression of morbidity are slow processes affecting cohorts differently, the international organization underlying SHARE (i.e. SHARE-ERIC which is managed by MEA) is currently set for further waves until 2024. Moreover, since the typical self-reported health measures are not only reflecting genuine health differences but also cross-national differences in response styles, an important desideratum for future research are objective health measures. SHARE has therefore pioneered, as a large international social survey, the collection of dried blood spot samples (DBSS).

The blood samples will be analyzed for blood parameters related to diseases that occur typically from onwards the mid of life (such as cardiovascular diseases) and conditions which are influenced by lifestyle and environmental factors (such as diabetes). These blood parameters constitute objective health measurements which can help to shed some light on the mechanisms that relate socio-economic factors to morbidity and mortality.

EFFECTS OF EARLY RETIREMENT

Another surprising finding from SHARE has sparked an entire new area of research and a lot of controversy: SHARE data revealed a strong correlation between early retirement and the loss of cognitive abilities both within and between European countries (Rohwedder and Willis 2010; Mazzonna and Peracchi 2012 and Mazzona 2014). A fruitful cooperation be-tween cognitive psychologists, gerontologists, economists, and sociologists has begun to identify the causes for this finding which range from the cognition-stimulating effect of work – even if it is experienced as unpleasant – to the social isolation experienced by many retirees. It sheds new light on the EU's strive for active aging. The causal identification is achieved using variation in national pension policies. This finding would not have been possible without cross-national and at the same time multidisciplinary data such as SHARE. SHARE also allowed digging deeper into the mechanisms behind this finding hinting at retirement related changes in social networks and the type of occupation as possible mechanisms (Börsch-Supan and Schuth 2014 and Mazzonna and Peracchi 2014).

HOW LIFE-TIME EVENTS AFFECT LATER LIFE

The SHARE data have provided evidence on the long-term scarring effects of recessions and financial hardship episodes, especially if experienced at school-leaving age, both on economic outcomes, such as employment, and health outcomes late in life measured in several dimensions (Brandt et al. 2012; Schröder 2013; Antonova et al. 2014 and Brandt and Hank 2014). The SHARE data also identified substantial negative short-term effects of the current crisis on the health of older Europeans (Bucher-Koenen and Mazzonna 2013). In order to more precisely distinguish which aspects of the welfare state have caused better or worse outcomes, SHARE has started with designing another round of collecting detailed life histories to be fielded starting in 2017 for a detailed concept (Wave 7). This will support a broad research area on life-time events, e.g. the different long-term consequences of divorce as a function of the applicable divorce laws (Reinhold et al. 2013 and Kneip et al. 2014) as well as research on social, health and economic consequences of childhood migration on later life.

CARE AND FAMILIAL SUPPORT

The SHARE data have provided insights on the interplay between family help and support by the welfare state: Differences in arrangements of intergenerational support are shaped by welfare regimes. A well-developed welfare state does not "crowd out" familial support (e.g. caring for older parents or grandchildren) but rather fosters specialization (Brandt 2013; Brandt and Deindl 2013). The complex patterns of substitution and complementarity may well change over time as new cohorts change behavior which we will be able to observe in the ongoing SHARE data collection.

DIFFERENCES IN THE UPTAKE OF DISABILITY BENEFITS

Surprising is also the finding that the large international differences in the uptake of disability benefits are not at all correlated with health or demographic differences in Europe, such as those mentioned above between the North and the South. For example, the prevalence of disability insurance in the early retirement window varies from about 16% in Denmark to about 3% in Greece. Rather, they are almost completely explained by the different rules and regulations of the various disability insurance schemes in the member states and document how powerful economic incentives are for retirement behavior (Börsch-Supan and Jürges 2012, Jürges et al. 2014).

SHED LIGHT ON SOCIAL AND ECONOMIC INCLUSION

SHARE data can also provide evidence on the degree of social and economic inclusion among the aging European populations. Poverty is one face of social exclusion, which has increased in the aftermath of the economic crisis, especially in Southern and Eastern Europe. Another is age discrimination, which, while proscribed by European law, is still embedded in many national regulations and in everyday life. Furthermore, bad health leads to reduced social activities and, thereby, to cognitive decline and depression – a vicious cycle that can only be broken by early intervention.

But also large migratory flows are directly related to the social inclusion debate: They are seen as a potential threat to the social fabric – both in the short and in the long run – due to lack of economic and social integration. SHARE provides good data including a broad and comprehensive set of measures of social inclusion to enhance further research in this area. SHARE researchers from all over Europe and Israel have started their research on these topics and published their first results (Börsch-Supan et al. 2015).

SURVEY METHODOLOGY PIONEER

SHARE has also enhanced the state-of-the-art in survey methodology. Recording the most salient indicators on health, family, social conditions, work, accommodation and economic factors in a reasonable amount of time and in a harmonized fashion across more than 20 participating countries with more than 30 languages (including Arabic, Hebrew and Russian) is a highly ambitious enterprise. SHARE's main achievement is the development of a set of electronic tools which harness the potentially centrifugal forces of cross-cultural cooperation in the survey process, starting with designing the instrument, translating and updating it, controlling the integrity of the sample, aiding the personal interviews, to managing the data base. In addition, we have conducted several experiments to better understand response behavior and integrated their results in the electronic sample management system. We have validated the survey data with record-linked administrative data, and we have introduced biomarkers (physical performance tests and capillary blood samples) in this large-scale international social survey. This has produced a host of methodological publications (Schröder 2011; Hunkler et al. 2011; Blom et al. 2012; Schaan and Korbmacher 2012; Blom and Korbmacher 2013; Korbmacher and Schröder 2013; Börsch-Supan and Krieger 2013; Malter and Börsch-Supan 2013; Bristle et al. 2014; Korbmacher 2014 and Malter 2014).

More information about SHARE:
www.share-eric.eu

RESEARCH OUTLOOK

MEA and the SHARE network have developed a 10-wave plan for data collection and research which addresses the most urgent issues as demographic change proceeds:

Wave 6 fieldwork started in February 2015 and has been finished at the end of 2015. Its main innovation was to integrate the collection of dried blood spot samples (DBSS) in the setting of a socio-economic survey adding a new dimension of objective health data to the existing physical performance measures. The blood parameter values derived from DBSS can be exploited in several ways. They can help to detect prevalent illnesses, such as diabetes, that are undiagnosed so far and would therefore pass unobserved. Thus having objective information about the health status of the respondents, we are able to address more precisely its potential health and social determinants. Moreover, objective health measures can largely eliminate cultural biases in cross-national comparisons of health. Additionally, the direct measurement of blood parameters will put light on biomedical pathways that link social and economic circumstances to health, for example the way work-related stress affects mental and physical health.

Wave 7 (SHARELIFE) will administer structured life histories to all respondents who have been added to the SHARE panel since the third wave in 2008 where the life histories were collected for the first time. In addition, 8 new countries from the EU will join SHARE. The theoretical framework for this endeavor is the insight that health, economic and social status in later life emerge from complex interactions over the entire life course. Departing from a person's biological make-up, parental conditions and early education, the trajectories of health, economic status and social embeddedness are not determined in isolation but in mutual interaction over the entire life course (as indicated by the many two-sided arrows between the three trajectories). Many of these interactions are modifiable by policies, such as education, work place regulations, poverty prevention or health care. Some welfare state interventions affect health and employment directly. Early retirement, for example, is directly and often immediately influenced by the rules of the pension, disability and unemployment systems. Health is directly affected by the health care systems. The SHARE life histories with their international variation will provide excellent data to understand which welfare state policies are most efficient to improve health, economic and social well-being and at which point of the life-course interventions should take place.

Wave 8 (2019-20) will add in tight coordination with the US Health and Retirement Study an in-depth measurement of cognition and mild, moderate and severe cognitive impairment. The module will be devoted to two distinctive aspects:

• the decline of cognition at relatively early ages (age 50-70) and its relation to concurrent activities (e.g. work for pay, volunteer work, help for family and friends, physical activity), and

• the onset of dementia at later ages and its relation to early life characteristics, especially education and parental socio-economic status. This feature is important in the light of the large expected increase in the prevalence of Morbus Alzheimer and similar severe cognitive impairments.

Waves 9 and 10 (2021-24) will be devoted to the retirement of the baby boomers since during those years the peak baby-boomer generation cohorts of the participating SHARE countries will have entered the retirement window. Topics will include how health and well-being will change in the years immediately before and after retirement, how consumption and time use will adapt to the respondents' new financial and social situation after retirement, and which level and distribution of living standards will emerge from the combination of private and public pension resources.

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SAVE

Another data collection effort by MEA concerned how and why households save, the so called SAVE study ("Sparen und AltersVorsorgE in Deutschland" i.e. "Saving and retirement plans in Germany"). SAVE is a 10-wave longitudinal household database which has built up information on saving decisions and their economic, psycho-social and health context between 2001 and 2013. Since saving behavior in Germany appears to deviate substantially from the consumption-smoothing paradigm, an own data collection was instrumental for an in-depth study of the different aspects of long-term planning and saving behavior in an institutional environment which encourages households to build up assets in long-term saving contracts rather than discretionary saving decisions.

MAIN ACHIEVEMENTS

OLD AGE PROVISIONS – UNDERSTANDING THE "RIESTER SCHEME" AND SAVING BEHAVIOR

SAVE has provided a fascinating account of the transition process from a rather monolithic public pension system as it dominated in Germany until 2001 to a multi-pillar system with a supplementary mix of subsidized and unsubsidized individual accounts and several types of occupational pensions. The main value of the SAVE data is their richness of observable behaviors and possible economic, social and psychological explanations.

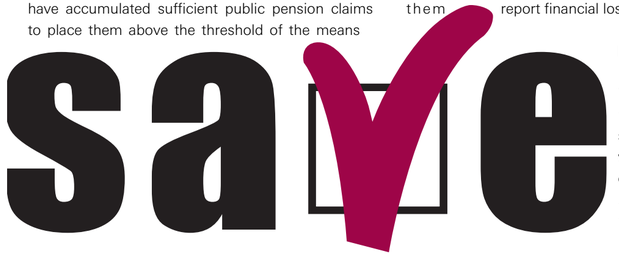
The SAVE data reveal a shocking lack of information. This holds for both individual accounts (mainly the Riester scheme) and occupational pensions. Coppola and Gasche (2011) and Coppola (2014) show that a large share of the population does not understand the incentives provided by the Riester scheme. Especially low-income households are ignorant of their eligibility for subsidies under the Riester scheme. In a similar context, Ziegelmeyer and Nick (2013) analyze the reasons behind the termination of Riester contracts. The SAVE data show that in about one third of the cases miscounseling or mis-sold products were the only causes for terminating or not serving Riester contracts. Lamla and Coppola (2013) link wave 2011 SAVE data with administrative data from the German Federal Employment Agency to create an employer-employee data set. They find that only about half of the workers are aware that their employer has to provide an occupational pension to them.

The interaction between lack of knowledge and therefore misleading incentives is particular strong in the lower income classes. Lamla and Gasche (2013) show that 38% of the households expect to rely on means-tested social assistance in old age which would claw back savings accumulated in Riester accounts. The actual share, however, is less than 3%, and more than half of those households already have accumulated sufficient public pension claims to place them above the threshold of the means test. Bucher-Koenen and Kluth (2012) use the SAVE information on subjective life expectancy to find that women and men underestimate their life expectancy by about 7 and 6.5 years, respectively, again leading to lower saving rates.

More generally, Germany is no exception among the many countries with low financial literacy (Bucher-Koenen and Lusardi 2011; Bucher-Koenen 2011; Bucher-Koenen and Lamla 2014). In particular, women, East Germans, those with low levels of education, the unemployed and persons with low income display low levels of financial literacy. The SAVE data show that less than a quarter of Germans below age 65 attempted to find out how much they needed to save to close the pension gap created by the recent pension reforms.

FINANCIAL CRISIS SHOCK TO PRIVATE HOUSEHOLDS

The SAVE panel also offers an observatory of the recent financial crisis and its shocks to private wealth (Börsch-Supan et al. 2010; Bucher-Koenen and Ziegelmeyer 2013). Since households with low financial literacy are less likely to own risky assets, fewer of them report financial losses.



More importantly, however, financially illiterate households more often sold assets immediately when their value declined and thereby did not participate in the quick recovery in Germany. Hence, households with lower financial literacy suffered more from the crisis in the longer run.

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AGE AND PRODUCTIVITY

The third data collection effort by MEA specifically addresses the prejudice that productivity peaks at a relatively young age and then declines, implying yet another blow to economic growth of aging societies. Two large enterprises in the automotive and the financial service industry had been involved and a very large amount of company-internal process data could be assembled in order to shed light on the relation between age and productivity.

MAIN ACHIEVEMENTS

PRODUCTIVITY IN THE SERVICE SECTOR

Aging not only affects the population as a whole but specifically also the workforce. If older workers were less productive than younger ones, aging would imply lower aggregate productivity. After the successful project on age and productivity in a large manufacturing company which showed that the prejudice of a negative age-productivity link has no empirical support in that company, MEA researchers extended their study to the service sector. They approached a large insurance company and measured productivity by performance indicators for office workers such as the number of new policies entered into the system, the number of claims processed, or the number of phone calls made. These indicators are then linked up with personnel data. These huge data (almost 5 million data points) permit to overcome a number of methodological problems in unprecedented ways. First, researchers merged the daily performance data of 1,623 work teams on 908 days (unbalanced) with longitudinal personnel data of 11,143 workers. This permits them to hold a broad range of workers' characteristics constant. In addition, and most importantly, this longitudinality allows them to difference out combined worker and workplace fixed effects, so they are able to correct for the selection effects marring so many earlier studies due to the endogeneity of early retirement and team composition.

JOINT PRODUCTIVITY OF WORKERS

Second, MEA researchers measure the joint productivity of workers in a work team. This takes into account the individual workers' contribution to their co-workers' productivity. Particularly the contribution of older workers may be underestimated if productivity is measured at an individual level. Examples for such potential contributions to a team's productivity are the instruction of younger workers, being relaxed in tense or hectic situations, and contributing positively to the work climate. This approach solves the serious aggregation problems in so many studies in this literature. The results show that on average over the entire insurance company the age-productivity profile is flat. If we look at the profiles for different tasks separately, however, we find considerable differences: At workplaces with rather simple tasks (e.g. correspondence) productivity significantly declines with age while at workplaces with more complex tasks (especially longer phone calls) productivity increases with age.

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PUBLIC POLICY CONSULTING

Since it was launched 15 years ago in Mannheim, MEA has become well-established as a nationally and internationally renowned competence center for issues relating to population aging from the perspectives of economics and economic policy. This has given rise to numerous inquiries for scientific advice on policy matters in Germany (member and chair of the Scientific Advisory Board at the Federal Ministry of Economic Affairs; advisory support to the Federal President as well as the Federal Ministers of Finance, of Health and Social Affairs, and of the Interior), advisory support to the Minister of Economics and Finance of the Republic of Italy, the Minister of Finance of the Republic of France, the Ministry of Finance of Finland, the Greek Central Bank, the United States Secretary for Health and Human Resources, the U.S. Special Senate Committee on Aging, the European Commission, the OECD and the World Bank, among others.

SUPPORTING EVIDENCE BASED POLICY MAKING

All MEA Research units provided input to Axel Börsch-Supan in his function as one of the nine members of the Expert Council on Demography ("Expertengruppe Demographie"), instituted by the German Federal Government. This body meets regularly at the Federal Ministry of the Interior in order to analyze the ramifications of demographic change. The computational general equilibrium models of the global aging process developed by MEA provided the groundwork for Axel Börsch-Supan as a member of the commission on "Long-Term Implications of Aging for the U.S. Economy", installed by the U.S. Senate and based at the U.S. National Academies of Science. Axel Börsch-Supan was a member of the Global Council on Aging and then the Global Council on Social Security advising the World Economic Forum. He is member of the MacArthur Network on Aging Societies which aims "to help the [US American] nation prepare for the challenges and opportunities posed by an aging society."

POLICY IMPLICATIONS OF SHARE RESEARCH

Many of the SHARE findings have strong policy implications, some of them controversial, such as tighter targeting rules for disability insurance or a stricter handling of early retirement pathways. SHARE has been successful in providing help for evidence-based policy making, both at the European Union and the member-state level. SHARE is also intensely used by the OECD and the World Health Organization (WHO).

Three examples on the EU level may illustrate this: The European Commission's Directorate-General for Economic and Financial Affairs (DG ECFIN) has used SHARE data to add detail for its long-term projections of pension and health care expenditures. Such detailed data included health services utilization, morbidity by age and years before death and retirement propensities by age and health.

The European Commission's Directorate-General for Health and Food Safety (DG SANTE) uses SHARE for their set of indicators, including the demographic and socio-economic situation (e.g. income inequality); health status (e.g. cancer incidence); health determinants (e.g. consumption of fruit) and health services (e.g. insurance coverage). SHARE was also used to compute health-adjusted life expectancies in Europe.

The policy of the European Commission's Directorate-General for Employment, Social Affairs and Inclusion (DG EMPL) on active aging, highlighted during the European Year of Active Ageing and Solidarity between Generations, is based on many findings from SHARE. Its report on Employment and Social Developments in Europe, for instance, stresses the importance of health prevention and work place quality to foster labor force participation at older ages. Evidence on these cross-cutting themes has only become possible through the multidisciplinarity of SHARE data.

The public policy consulting activities have resulted in MEA Discussion Papers that can be downloaded from the MEA website: mea.mpisoc.mpg.de

PROMOTION OF YOUNG RESEARCHERS

MEA takes great efforts to promote young researchers. We have developed a sophisticated strategy which encompasses several stages. An important part of the strategy is that we have given all researchers, pre or post docs, contracts rather than stipends as a matter of principle and involve them immediately in the projects of the institute. Exceptions are very rare and short-term only. During the very first weeks at MEA, each junior researcher is assigned to a more senior researcher who acts as a mentor during the entire doctorate. Dissertations are usually tightly linked with a project at MEA. From the very beginning, all researchers present their work periodically in our weekly MEA Seminar. Once a year, we all retreat for a couple of days to a quiet location to discuss and reflect on our research and to foster interaction between research units. In order to improve their research skills, we encourage our researchers to make use of the many courses offered at Munich's two Universities (Departments of Economics, Social Sciences, and Statistics). In addition to these course programs, we have set up a MEA Course Program "Empirical Methods" which is tailored to the needs of the MEA researchers. We also co-organize the weekly Research Workshop "Empirical Economics" together with the faculty from the Economics Department of the Ludwig-Maximilians-Universität München (LMU), a further possibility for our researchers to meet other researchers, learn about related research and how to discuss academic issues.

Beyond Munich, we encourage our researchers to take part in courses that are offered elsewhere, prompt them to present their work at international conferences and workshops and encourage them to visit other researchers abroad. In turn, we have a guest program in which guests are explicitly prompted to interact with the young researchers and comment on their research. We also host internees from other universities and research institutes who perform as part of their dissertation work autonomous research projects at MEA and interact with MEA researchers.

The success of our strategy is documented, e.g. in best dissertation prices, best paper prices and the excellent placements of researchers who leave MEA. We are also proud that MEA has an even gender balance and a family-friendly environment for young mothers and fathers.

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