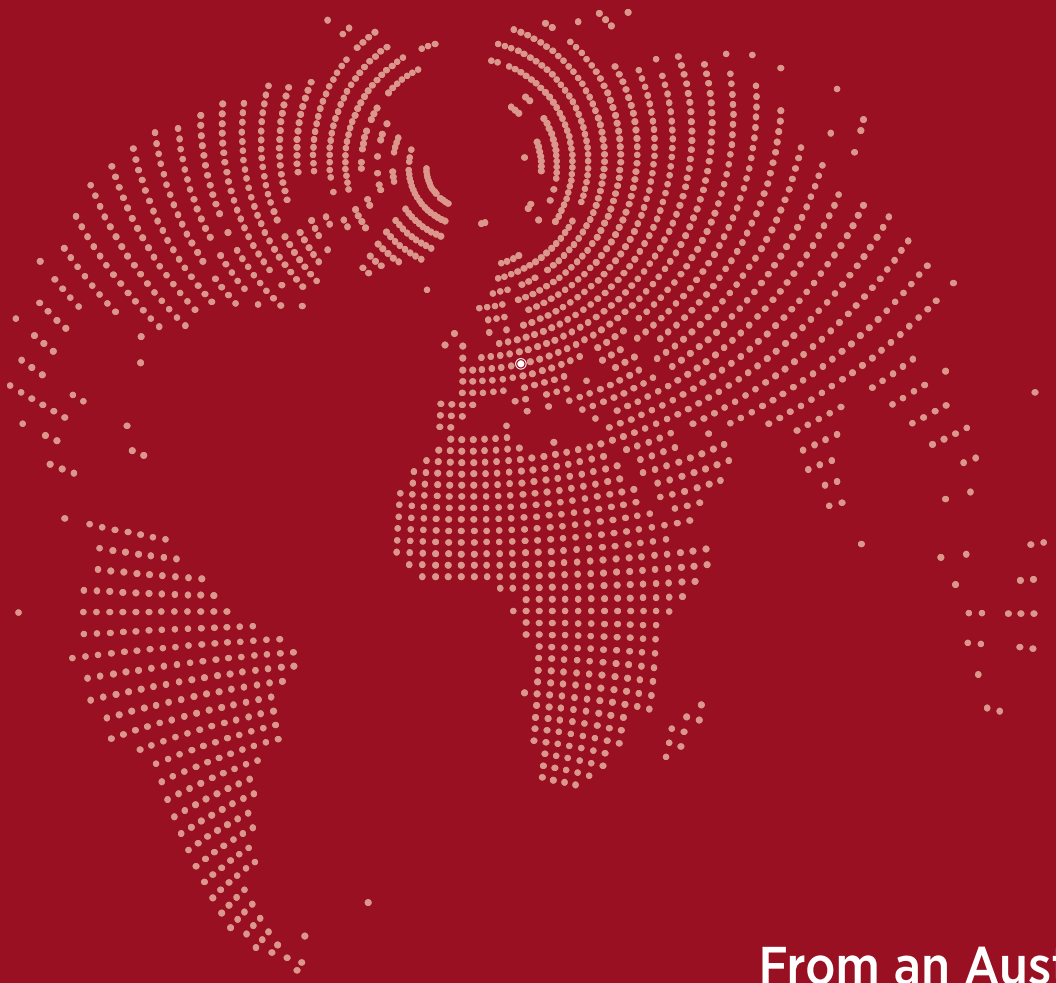
40 years of the Vienna Institute of Demography 1975–2015



From an Austrian
to a European
to a Global Player

Wittgenstein Centre
FOR DEMOGRAPHY AND GLOBAL HUMAN CAPITAL
A COLLABORATION OF IIASA, VID/ÖAW, WU

Vienna Institute of Demography

ÖAW AUSTRIAN ACADEMY OF SCIENCES

Mission statements

Vienna Institute of Demography

The Vienna Institute of Demography (VID) strives for the combination of scientific excellence in analysing and projecting demographic trends and in evaluating the social and economic consequences of population ageing. Thus the VID combines innovative methodological work with empirical analyses and communication of science-based insights. The VID has a particular focus on the demography of Austria and European comparative analyses. The Institute is embedded in the structure of the Austrian Academy of Sciences.

The VID mission statement was formulated in 2003.

Wittgenstein Centre

The Wittgenstein Centre aspires to be a world leader in the advancement of demographic methods and their application to the analysis of human capital and population dynamics. In assessing the effects of these forces on long-term human well-being, we combine scientific excellence in a multidisciplinary context with relevance to a global audience.

The Wittgenstein Centre for Demography and Global Human Capital was established in 2010 as a collaboration between the Vienna Institute of Demography, the World Population Program of the International Institute of Applied Systems Analysis (IIASA) and the Demography Unit of the WU, Vienna University of Economics and Business. The Centre was initially funded through the 2010 Wittgenstein Prize which has since been complemented by other sources of external funding including six ERC grants.

The Wittgenstein Centre mission statement was drafted in 2011 and complements the VID mission statement.

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Vienna Institute of Demography

ÖAW AUSTRIAN ACADEMY OF SCIENCES

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Demography matters

Anton Zeilinger
President of the
Austrian Academy of Sciences

Forty years ago the Austrian Academy of Sciences established the Vienna Institute of Demography (VID) on the basis of this – at the time new – observation: Demography matters. This booklet reflects on what the Institute has accomplished since then and what it does today in light of the challenges posed by global demographic change.

On the occasion of the 40th anniversary of the VID founding, we can look back at an institute that began with a single individual – Lothar Bosse – and subsequently developed into a vibrant and fruitful environment for excellent researchers from throughout Europe, strongly embedded in the global scientific community. On the following pages you will find selected statistics, interviews with external experts involved with the Institute and research highlights, illustrating the past and present relevance of demographic research.

We also invite you to take a look ahead: This summer the VID has moved to new premises on the campus of the Vienna University of Economics and Business (WU). Here, our Academy will collaborate with partner institutes of the WU and with the International Institute for Applied Systems Analysis (IIASA). Researchers from these institutions now work together under one umbrella, forming the Wittgenstein Centre for Demography and Global Human Capital.

The Academy is deeply committed to fostering a trend of recruiting young career researchers and intensifying international collaboration and outreach activities. It is from synergies such as these, combined with innovative methodology and creativity, that opportunities to address major challenges facing the human population are created and Vienna is strengthened as an international centre for demographic research.

The Austrian Academy of Sciences warmly congratulates the Vienna Institute of Demography, its scientists, and its staff, on the occasion of this 40th anniversary.

A message from the directorate

Wolfgang Lutz
Director of the VID

Alexia Fürnkranz-Prskawetz
Deputy Director of the VID

Richard Gisser
Deputy Director of the VID

Some 40–50 years ago demographic trends began to attract increased attention from scientists, politicians and the public at large. The main reason was the very rapid growth of populations in developing countries, frequently called the "population explosion". This triggered significant new funding for demography and the establishment of many new population studies centres, mostly in the USA. During this period, the post-war baby boom ended and European fertility rates – much to the surprise of most demographers – began to fall well below the replacement level of two surviving children per woman. Demographers soon realised that this fertility decline was not just a short-term fluctuation but a lasting change in reproductive behaviour which together with further increases in life expectancy implied a fundamental demographic regime change in population ageing. This realisation led to the establishment of new research centres in Europe, one of which was a tiny new institute of demography at the Austrian Academy of Sciences in 1975, working in close collaboration with the National Statistics Office.

The Institute started with one researcher, only doubling to two researchers after four years (excluding directors). Today the Vienna Institute of Demography is home to 38 researchers and is growing rapidly at a rate of 9.5 percent per year. This significant staff expansion, which was in part driven by external funding, was accompanied by a considerable broadening of the substantive as well as the geographic scope of the Institute's research. As the subtitle of this booklet appropriately states, the focus gradually moved from Austrian to European to global. This expansion was carefully accomplished without giving up our core competences in Austrian and later European demography. In this booklet we describe this transformation in qualitative and quantitative ways as well as illustrate it with some research highlights.

In 2010 the VID joined forces with IIASA's World Population Program and the demography group at the WU to form the Wittgenstein Centre for Demography and Global Human Capital. This provided demographic research in the Vienna area with the critical mass to have a globally visible impact. The current relocation of the VID to an attractive new office space at the WU campus is likely to help make our joint work even stronger over the coming years.

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Milestones of VID's history

Pre-history until the establishment decision in 1975

The 1959 Vienna World Congress of the International Union for the Scientific Study of Population (IUSSP), co-organised by the then doyen of Austrian statistics and demography, **Wilhelm Winkler,** had little long-term effect on the institutionalisation of population research in Austria. In an introduction to an anthology, edited by the Austrian Central Statistical Office (ACSO) on the occasion of the 39th session of the International Statistical Institute (ISI, in Vienna 1973), Winkler stated that "demography in the German-speaking area as a result of ... Hitler's population policy fell as a suspicious matter into disrepute. Efforts have been made since then by private associations to find a way out of this unpleasant situation; but the extremely contemporary subject demography has not found a place among the chairs and institutes in the universities of Germany or Austria ... nor in the curricula. In this regard, however, there is hope that the forthcoming foundation of a national German institute of demography might bring some relief – at first in Germany and consequently in Austria as well." [1]

The aforementioned Federal Institute for Population Research (BIB) was established in February 1973 as an agency of the German Federal Ministry of the Interior in an administrative community with the Federal Statistical Office in Wiesbaden. As expected, this was a signal for Austria. In May 1973, **Gustav Feichtinger,** Professor of Operations Research, pleaded in a public lecture before the Austrian Statistical Society for a population studies institute and for demography chairs in Austria. The World Population Year 1974 of the United Nations would be a favourable opportunity to stimulate research in this important area. Sustained support came from Wilhelm Winkler.[2]

From June 1973 onwards the Austrian Ministry of Science and Research and the ACSO worked together to create a demographic institute. Minister **Hertha Firnberg,** herself a social scientist, had the political will and found a congenial partner in the President of the ACSO, **Lothar Bosse,** a former university assistant of Winkler.

Concepts regarding the function, organisation, staffing and funding of such an institute were drafted and discussed throughout 1973. Among the contributors were Heimold Helczmanovszki, director of population statistics at the ACSO, and Gustav Feichtinger. While the Institute's functions (to form a hub of demography in Austria and to carry out both basic and policy-relevant population research) soon became clear, there were uncertainties about organisational options and funding. Nonetheless the Ministry of Science made its involvement public by organising a **symposium on "Demographic research in Austria"**[3] on 20 March 1974 at which two speeches were given:

- A statement by Minister Hertha Firnberg, declaring her readiness to support the efforts aiming at intensifying and institutionalisation of population research in Austria.
- A lecture by **Hermann Schubnell,** founding director of the BIB: "Why are population research necessary and its institutionalisation useful?"

This event, also referred to as "Gründungsenquete" (founding symposium), was followed by a series of meetings of project stakeholders from ministries, research organisations and universities to discuss the tasks, structure and funding of a demographic institute. The Bucharest World Population Conference in August 1974 showed again the importance

1 Wilhelm Winkler: Statistik in der Welt – Statistik in Österreich, in: Heimold Helczmanovszki (Hrsg.) Beiträge zur Bevölkerungs- und Sozialgeschichte Österreichs, Verlag für Geschichte und Politik, Wien 1973, p. 16.

2 Press release by the ACSO, dated 12 May 1973. Soon after, Gustav Feichtinger published a comprehensive overview of demography and its problems in an academic gazette („Was will die Demographie?", Österreichische Hochschulzeitung, 1 March 1974).

3 Documented as: Demographische Forschung in Österreich, Veröffentlichung des Bundesministeriums für Wissenschaft und Forschung, mit Beiträgen von Bundesminister Dr. Hertha Firnberg, Direktor Dr. Hermann Schubnell, Springer-Verlag, Wien-New York 1974.

of having a population studies institute in Austria. Over time it became apparent that the best solution would be a research institute of the Austrian Academy of Sciences (ÖAW) in close cooperation with the ACSO. It was understood that funding would come from interested ministries and other sources rather than from the ÖAW, and that the ACSO would make contributions in kind, such as the premises, computers, data and library use, in addition to personnel ties between the new institute and the ACSO. Under these conditions the foundation of the "Institut für Demographie (IfD)" was **approved by the ÖAW** on 22 October 1975 (Planning Commission, and Division of Humanities and Social Sciences) and finally **on 7 November 1975** (General Assembly).

1976–1984: Parsimonious but effective build-up

On 23 January 1976, the IfD's Board (Kuratorium) consisting of eleven ÖAW members held its constitutive meeting.[4] Delegates nominated by six ministries, the universities' association, and the main association of social security joined the Board later. Upon its proposal, **Lothar Bosse was appointed director of the IfD** for a three-year term.[5] In 1976 the Institute had only a symbolic budget. The main activities were the elaboration of a research agenda and the internal structure, proposals for external funding, and the necessary cooperation agreement with the ACSO. The Institute's annual report for 1976 ended with the cautious statement: "Unfolding of a major research activity has been impossible, neither reliable sources of funding could be acquired, nor was there a permanent office. Therefore, at the end of 1976 the realisation of the foreseen research programme for 1977 is at the stage of preliminary negotiations with donors and with suitable academic staff."[6]

In 1977 the contract with the ACSO came into force, and the first IfD scientist employed by the ÖAW started working in the new building of the ACSO.[7] Further, the dual structure of the Institute was established: It should conduct both mathematical, model-based research (formal demography) and empirical, problem-oriented population studies of societal relevance, including policy advice (social demography). To that end two sections for (1) **theory and basic research,** and (2) **applied demography** were established with external honorary functionaries as leaders.[8] In 1977 the Institute launched a publication series "Schriftenreihe" with an English version of a report by the ACSO on the occasion of the World Population Year 1974.[9]

The ÖAW core budget for the starting years 1977-1979 made provisions for one scientist only. However, operation expenses allowed among other things the hiring of external, mainly part-time, researchers by means of fee contracts. In the following years 1980-1984, which might be considered a consolidation phase after the founding, a second scientist[10] was funded but the share of operation costs was halved to one sixth of the core budget.

4 The first chairman of the Kuratorium was Wilhelm Weber, an economist. Co-chair was the statistician Gerhart Bruckmann who served as chairman from 1986 until the Kuratorium's expiry in 2007.

5 Lothar Bosse was President of the ACSO from 1970 to 1981. His function as founding director of the IfD extended from 1976 to March 1987. In 1980 he was elected honorary member of the ÖAW's Division of Humanities and Social Sciences. See also the obituary by Gerhart Bruckmann in: ÖAW (1998) Almanach 1996/97, 147. Jahrgang, Verlag der ÖAW, Wien 1998, pp. 615–619.

6 ÖAW (1977) Almanach für das Jahr 1976, 126. Jahrgang, Verlag der ÖAW, Wien 1977, p. 415.

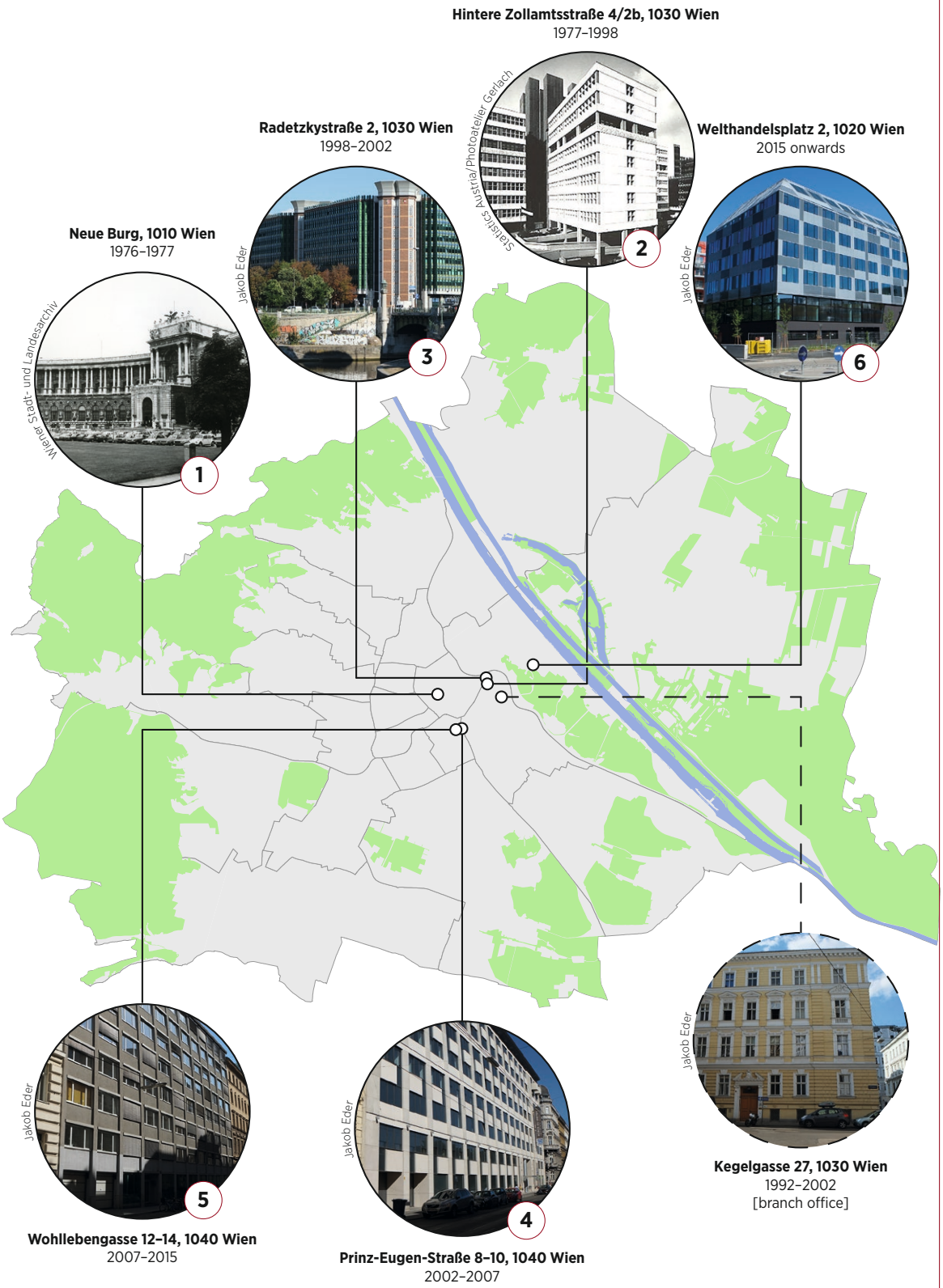
7 Alois Haslinger, who previously had a fee contract with the IfD in the last quarter of 1975, held this position until the end of 1982 when he quit for the ACSO.

8 Section 1: Gustav Feichtinger, Professor at Vienna University of Technology, served also as IfD deputy director; section 2: Richard Gisser, then head of vital and migration statistics in the ACSO.

9 Peter Findl and Heimold Helczmanovszki: The Population of Austria. Schriftenreihe des Instituts für Demographie der ÖAW, Heft 1, Wien 1977, 245 pp.

10 This position was occupied by Rainer Münz who had been previously employed on external funds since 1979. Rainer Münz was director of the IfD in 1990–1992 before he left for a professorship in population studies at Humboldt University in Berlin. He remained in the IfD as leader of the applied demography section until 2001.

The Institute's locations



Geometry: Open Data Vienna
Cartography: Jakob Eder, 2015

Additional contracts with freelance researchers were made possible on top of the core budget with funds from third-parties. According to its "founding mandate", the Institute has from the very beginning been active – and successful – in **acquiring extra funds** for carrying out research projects. This can be seen from the structure of funding for the period 1977–1984 in which the share of external inflows made up 53% of total funds, respectively 34% if earmarked payments to institutional contractors are excluded. The number of researchers working for the IfD with fee contracts varied between 6 and 14. This symbiosis of the Institute and a network of freelancers had obviously been very effective and productive during this period.

At the 1978 Festive Assembly of the ÖAW, President Herbert Hunger gave a very positive account appraisal of the IfD: "The Institute of Demography, founded only in 1976, **takes a particularly welcome upturn;** it strengthens in a meaningful way the social science sector of the Academy's research."[11] From the new research programme he mentioned the following items: a longitudinal study of the generative behaviour of the population, especially providing information about motivations; an analysis of the demographic structure of households for making precise household projections; an analysis of the impact of quantifiable demographic processes on the family life cycle and a problem-oriented analysis of demographic indicators of educational participation in Austria. In 1979, "The Institute of Demography, Vienna, Austria" was presented to an international audience of peers in the EDIB, the forerunner of the European Journal of Population.[12] Information was included about the Institute's structure, its managers, research fields and projects and the (at the time five) volumes in the "Schriftenreihe".

As the only national demographic institute in Austria the IfD saw the importance of **informing the public** about population issues and research results, thus contributing to a matter-of-fact debate. Hence from 1981 onwards the semi-annual magazine "Demographische Informationen (D.I.)" was produced and distributed free of charge, covering recent trends in population studies, population-related policies, Austria's demographic situation, a bibliography, book reviews, reports about past and future meetings and a press review. In 1982 English abstracts were added. Yet the frequency turned out to be too ambitious for a small institute and was soon changed to annual and – due to the work cycles of contract research – even biennial or triennial publications. Over time the contents were also streamlined. The D.I. became a journal primarily featuring articles and reports from the Institute's own research portfolio, with a few guest contributions, but without external peer-review. In 1985 the "Forschungsberichte" (Research Reports) publication series was started.[13]

1985–2001: Sustained development with potential to grow

The year 1985 can be regarded as the beginning of a **new phase of growth,** as provisions for a third researcher position were made.[14] Both the core budget (91 T€) and the number of scientists (2.1 full time equivalents, FTE) were still very low in 1985 but doubled by 1990. Thereafter the ÖAW budget allocation increased significantly in 1991 and 1994 when the IfD was given special multiannual funds to "stimulate and internationalise" research. When this effect subsided, a further increase in the core budget from 298 T€ in 1997 to a local peak at 419 T€ in 2000 took place. Exter-

11 ÖAW (1979) Almanach für das Jahr 1978, 128. Jahrgang, Verlag der ÖAW, Wien 1979, p. 154.

12 European Demographic Information Bulletin, Volume X, 1979, No. 4, pp. 163–164.

13 Lutz, Wolfgang. 1985. Parity-Specific Fertility Analyses. A Comparative Study on 41 Countries participating in the World Fertility Survey. Forschungsbericht 1. Wien: Institut für Demographie, ÖAW. – Wolfgang Lutz worked in the IfD from 1983 to 1985; in 1986 he joined the World Population Program of IIASA (International Institute of Applied Systems Analysis) in Laxenburg, where he followed Nathan Keyfitz as program leader in 1994.

14 This job could be occupied only in December 1985 by Josef Kytir who later (1993–2001) also served as IfD's deputy director.

nal funding was increasingly less important than it was during the build-up phase, although growing in absolute terms – the share was 21% of total funds in 1985/94 and 19% in 1999/2001, reaching a very high level of 37% in 1995/98.[15] With growing external funds the scientific staffing no longer depended exclusively on available positions. In 2001 the IfD had seven such posts (six funded by the ÖAW and one by the ministry) but altogether 8.2 full-time equivalent (FTE) researchers. The growth in FTE was not constant however first there was a steady rise to 7.2 in 1994 followed by stagnation at an average of 6.3 in 1995/2000. This can be attributed to competition by the newly founded Max Planck Institute for Demographic Research (MPIDR) in Rostock, Germany.[16]

In addition to annual reporting to the Board and the biennial ÖAW Activity Reports, the IfD provided an account of its research agenda and results on the occasion of its 10th, 20th and 25th anniversaries.[17] Given the Institute's "suboptimal" size it was deliberately decided to **concentrate on Austria** and its embedding in the process of European integration rather than limiting the thematic spectrum of research. The section of formal demography widened its scope from studying stable and shrinking populations in the build-up phase to overlapping-generations models and interrelationships between population, economy and environment as well as migration and human capital. In the section of applied demography, emphasis was on integration of demographic and society/policy analysis by considering effects of welfare state structures and legal measures. Issues of demography-based evaluation and acceptance research included family policy, non-marital childbearing, female employment, infant mortality, social inequality in mortality, ageing and long-term care. Migration, ethnicity and xenophobia were priority topics after the fall of the Iron Curtain. The IfD was also active in contributing to national official reports on the situation of special segments of the population (families, women, seniors, youth, higher education), in preparing national documents for international population conferences, and in clarifying the discipline's past in Austria between 1918 and 1955. A major achievement was the maintenance of the only specialised library in demography in Austria with about 7000 volumes.

Relative to its resources the Institute was highly productive and had a sound reputation, as evidenced both by increasing international cooperation[18] and by evaluation through peers. In 1991 the dual structure of the IfD received positive opinions by peers upon request of the Board. In spring 1997 the ÖAW started a lasting evaluation process for its institutes through independent international academic experts. The team reviewing the social science cluster concluded with respect to the IfD that "continuation and expansion of the Institute are strongly recommended."[19] This **very positive evaluation** was followed by a public programming discussion at an international symposium "Perspectives of demographic research in Austria" in November 1998 at the ÖAW. To implement recommendations the IfD developed a moderate step plan with a target of twelve researchers, i.e. two for each of six defined topical areas. This plan however had to be adjusted every year due to financial constraints. In 2001 the ÖAW decided – on the basis of special funds from the National Foundation – to substantially expand and at the same time internationalise the Institute. The designated new director, **Wolfgang Lutz,** presented his ideas before the members of the IfD in September 2001.

15 One reason was that the IfD had been selected to host scholarship holders of the European programme Training and Mobility of Researchers.

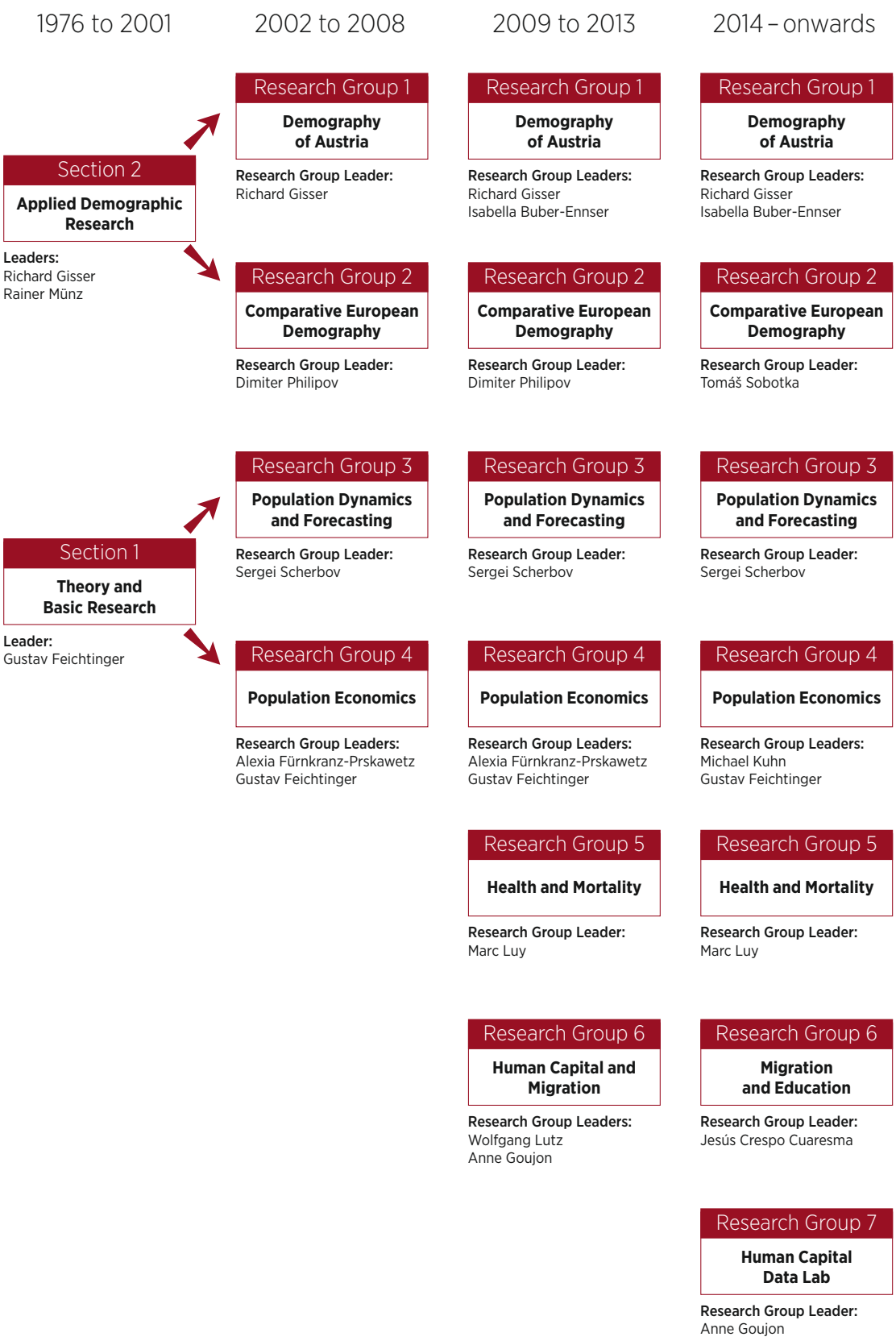
16 In 1998 the FTE score fell even to 5.6. This was the first full year in the leave of Alexia Fürnkranz-Prskawetz to lead a Junior Research Group at the MPIDR.

17 See Demographische Informationen 1986, D.I. 1995/96, and: Gustav Feichtinger, Richard Gisser, Josef Kytir (eds.) Demographie im interdisziplinären Kontext. Festschrift 25 Jahre Institut für Demographie der ÖAW, Schriftenreihe Vol. 16, Wien 2002.

18 In the early 1990s the IfD participated in the "Population Policy Acceptance Survey" (later known as PPA 1) that was coordinated by the Netherlands and Italy. Starting in April 2000 within the 5th Framework Programme for Research of the European Commission, the IfD resp. the ÖAW as the legal entity was a partner in the Network of Integrated European Population Studies (NIEPS).

19 ÖAW: Mittelfristiges Forschungsprogramm 1996–2000. Evaluationsergebnisse I, Wien 1998, p. 35.

Evolution of research groups



2002–2010: Expansion to a European player in demography

According to these plans, with an emphasis on **"excellence"** and **"relevance",** the Institute would seek to grow in size and importance, developing to an international hub of demography with cutting-edge methodology and peer-reviewed output, and strengthening its policy-oriented profile by proactively analysing and projecting demographic trends and their consequences, including issues from beyond the national boundaries. The pursuit of excellence and internationalisation would be complementary as both **publishing in high quality journals** and more widespread dissemination of own publications would require a transition to **English** as the working language of the Institute.

When this decision was made, the brand name **"Vienna Institute of Demography (VID)"** was coined to signal the reorientation. Further elements of the internationalisation were proactive recruiting from abroad, the launch of several English language publication series,[20] creation of a research group on Comparative European Demography to undertake genuine European research instead of national/international comparisons, greater presence of researchers and representation by the Institute at major international conferences, organisation of annual specialised international conferences in Vienna, extension of consultancy in population matters to foreign countries and international institutions (particularly the European Commission and the United Nations Population Fund) and last but not least close cooperation with IIASA's World Population Program on the basis of a memorandum of understanding.

The structure of the VID was changed from two sections to four research groups of a more informal character with permeability to give researchers more choice in applying their knowledge and abilities. Whereas the research groups on Demography of Austria and on Population Economics continued and widened the agenda of the former sections, **the new research groups** on Comparative European Demography and Population Dynamics and Forecasting added substantially to the VID's research portfolio. Among the new or enhanced research topics were: fertility intentions, fertility levels and tempo effects in the Comparative European Demography group; methodologies of demographic analysis and projection as well as new concepts of age in the Population Dynamics and Forecasting group; and ageing and productivity as well as agent-based modelling in the Population Economics group. With Statistics Austria remaining as one of VID's key partners, the Demography of Austria group centred more on national surveys of international longitudinal study programme.[21] In this period of restructuring the multifaceted "Spirit of VID" [22] also underwent considerable changes. One highlight in publication achievements was without a doubt an article in *Nature.*[23]

The so-called "quantum leap" of 2002 materialised first in a doubling of the core budget (from 403 T€ in 2001 to 799 T€ in 2002) and in the move to new premises, thus ending the ten year split of the Institute into two locations but also introducing location costs as a new category of expenses, the magnitude of which amounted to almost half of the budget increment in 2002.[24] The growth without location costs was hence less spectacular, but nonetheless the number of FTE researchers surpassed 10 for the first time. From 2002 both the core budget and the count of FTE researchers soared until 2006 by about 75% (to 1394 T€ and 17.8 FTE). External funding decreased in relative

20 Vienna Yearbook of Population Research (successor of D.I. as a strictly peer-reviewed international journal), European Demographic Research Papers, VID Working Papers, European Demographic Data Sheet. Edited jointly with the MPIDR, BIB and Rostocker Zentrum, the German language infoletter "Demografische Forschung aus erster Hand" is an international cooperation.

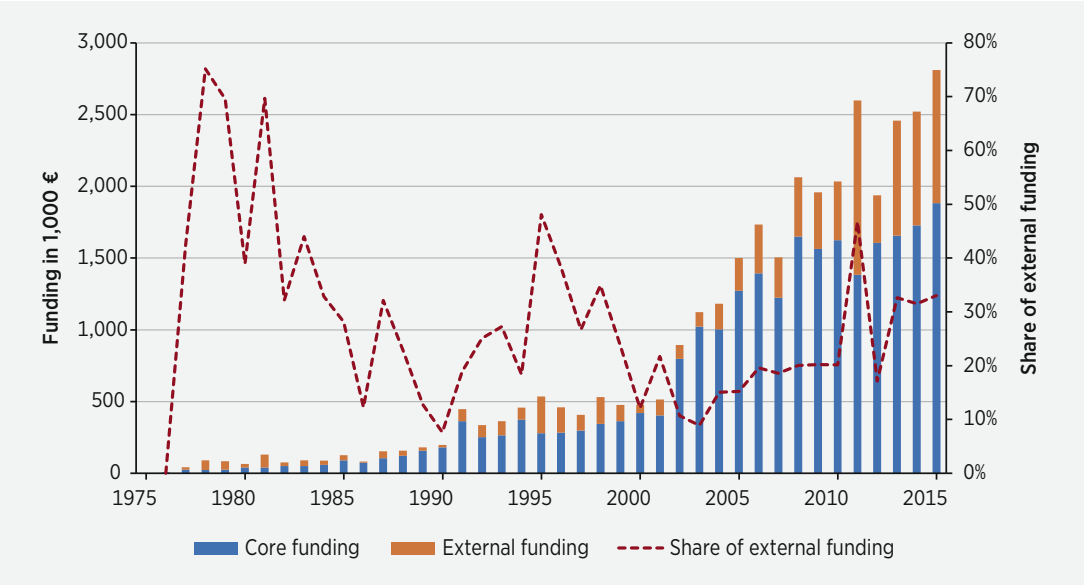
21 Generations and Gender Programme (GGP) and Survey (GGS), and SHARE (Survey of Health, Ageing and Retirement in Europe).

22 Chris Wilson: The Vienna Institute of Demography 2002–2006: A Five Year Portrait. VID, Vienna 2007, 49 pp.

23 Sanderson, W.C. and S. Scherbov (2005). "Average remaining lifetimes can increase as human populations age." Nature 435: 811–813. (June 9, 2005).

24 The contract with the ACSO had expired in 2000 when the ACSO was transformed into an independent non-profit federal institution under public law called "Statistics Austria".

Funding



Since the beginning the VID was very successful in raising external funds. The high share around 1980 can be attributed to the first large interview survey of the Institute, which was part of one of the first research projects. In the mid-1990s, external funding helped to finance research on female labour participation and international migration after the fall of the Iron Curtain. The most recent peak in 2011 is linked to the first instalment of two ERC Starting Grants (HEMOX and EURREP). Overall, the VID has raised more than 8 million Euros in external funding over the last 40 years.

terms due to the leap in the core budget in 2002 and 2003. However, both absolute and relative increases in external funding were resumed in 2004, thereby not only balancing financial constraints in the ÖAW allocations, but enabling further expansion. In fact, only the year 2008 brought an interruption in the continuous growth of the scientific staff, followed by an even bigger increase in 2009 and a size of 21 FTE in 2010. In the period 2006-2010 the share of external funding amounted to 20% of total funds. In regard to international third-party-funded research, the VID carried out individual projects with the European Commission and participated in projects of the 6th and 7th framework programmes, but acted also as a coordinator of major FP7 projects,[25] and members applied for European Research Council (ERC) Grants.

In a substantial step ahead, two new research groups were founded in 2009, namely Health and Mortality, and Human Capital and Migration. While the former focused on determinants of longevity and ageing in good health, the latter was a competence centre for fostering education as a key variable in demography, and an "incubator" for developing demographic research on migration and environmental issues.[26]

The year 2010 was even more important: After an evaluation in 2003, which yielded very valua-

25 "Reproductive Decision-Making in a Macro-Micro Perspective (REPRO)" in 2008–2011, and more recently, "Ageing Europe – An application of National Transfer Accounts (NTA) for explaining and projecting trends in public finances (AgeNTA)", started in 2014.

26 In 2014 it was split into the research group Migration and Education and the Human Capital Data Lab.

ble insights for the restructuring process, the VID was again peer-reviewed on behalf of the ÖAW by an independent international team. The overall assessment of the 2010 evaluation according to the unpublished report was: "All in all the evaluation team considers the VID a **world class success** story with the potential to grow even further in the coming period." The conclusion reads as follows: "The evaluation team is unrestrictedly positive about VID. It is an admirable institution." In the same year the first **ERC Starting Grant** was awarded to a VID research group leader.[27] Also in 2010 Wolfgang Lutz won the **Wittgenstein Prize,** Austria's highest science award both in reputation and finance equipment. It provided the basis for implementing the concept to coordinate and mutually strengthen the demographic research units in the Vienna area by forming the Wittgenstein Centre for Demography and Global Human Capital as an umbrella organisation.

2011: Strongest pillar of the Wittgenstein Centre for Demography and Global Human Capital

The Wittgenstein Centre was formally founded in 2011 on the basis of a memorandum of understanding between **IIASA** (for the World Population Program), **ÖAW** (for the VID), and **WU** (Vienna University of Economics and Business, for the Research Institute Human Capital and Development and the Demography Group of WU).[28] It is a cooperative cluster with personnel ties between the three pillar institutions and a joint research agenda. The aim is to use **multidimensional demographic methods** of population dynamics to analyse and forecast broader socioeconomic changes. Inevitably such changes occur through the perpetual entry of new and exit of old generations and their main characteristics,[29] the crucial factor being **educational attainment.** As a result of intensive collaboration within the Wittgenstein Centre and with over 550 international population experts a comprehensive summary of trends in fertility, mortality, migration and levels of education for almost all countries in the world up to 2060 was published in 2014.[30]

In conjunction with its partners, in particular the World Population Program of IIASA, the Wittgenstein Centre has been assessed as THE world leader in demography and sustainability by a major international evaluation exercise commissioned by IIASA in 2014.

The three pillar institutions remain legally independent within the Wittgenstein Centre. The VID is the strongest of the three, accounting for an estimated 60+% of the Wittgenstein Centre capacity. After the low point in VID core funding in 2011 – at the same level as 2006 – the core budget has been slightly rising again ever since. The year 2015 required extra investments as the VID moved to brand new premises at the WU Campus, thus not only improving its own office situation but also reducing the number of Wittgenstein Centre locations to two **(WU Campus D5,** and IIASA in Laxenburg Castle). External funding at the VID has grown to unprecedented amounts, with annual average inflows of about 800 T€ in 2011/15 thanks to ERC Grants but also other competitive acquisition of third-party funds; the share of ex-

27 Marc Luy received it for his proposal "The male-female health-mortality paradox (HEMOX)". In 2011 Tomáš Sobotka followed with an ERC Starting Grant for "Fertility, reproduction and population change in 21st century Europe (EURREP)".

28 The booklet by Jim Dawson: "Wittgenstein Centre for Demography and Global Human Capital. Integrating research of three pillar institutions 2008-2012", Vienna 2013, does not only refer to the Wittgenstein Prize but also to the total of six ERC Grants awarded to members of the Wittgenstein Centre in this period.

29 Wolfgang Lutz (2013). Demographic metabolism: A predictive theory of socioeconomic change. Population and Development Review, vol. 38, Supplement Population and Public Policy, Essays in Honor of Paul Demeny, pp. 283-301.

30 World Population and Human Capital in the Twenty-First Century, ed. by Wolfgang Lutz, William P. Butz, and Samir KC, Oxford University Press 2014, 1072 pp.; and online Wittgenstein Data Explorer Version 1.2.

ternal funding is expected to reach 33% of the total budget in this five-year period. The number of FTE researchers has grown from 23 in 2011 to some 28 in 2015, with that of administrative staff oscillating between three and four. In the 2012–2014 period, VID scientists published a total of 145 peer-reviewed articles, of which 100 appeared in indexed and/or selected journals including **four articles in *Science.***

The statistics and figures on p. 40–44 further illustrate the recent trends of work by the VID.

This VID history was written by Richard Gisser

Directors

Lothar Bosse 1976–1987 († 1996)

Richard Gisser 1987–1989

Rainer Münz 1990–1992

Richard Gisser 1993–2001

Wolfgang Lutz since 2002

Deputy Directors

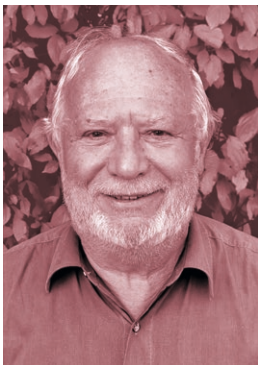
Gustav Feichtinger 1976–1992

Josef Kytir 1993–2001

Alexia Fürnkranz-Prskawetz since 2002

Richard Gisser since 2002

Lothar Bosse



Gustav Feichtinger

Richard Gisser

Rainer Münz

Josef Kytir

Wolfgang Lutz

Alexia Fürnkranz-Prskawetz

Gerhart Bruckmann

Prof. Gerhart Bruckmann is Professor Emeritus in Statistics at the University of Vienna and long term chair of the VID Kuratorium (governing board).

When you think back to 1974/75, what were the reasons for the Austrian Academy of Sciences to establish a small demographic research institute?

Internationally, these were very interesting times. In Europe the birth rate declined rapidly after the baby boom years to levels well below replacement fertility. This came as a surprise to most experts. At the same time in the developing countries population growth accelerated due to declining death rates and very high birth rates. There was fear of a "population explosion" which especially in the US led to substantial financing of population studies and new programs. Since there was no demographic institute in the Austrian university system, it was only logical for the Austrian Academy to take the initiative of establishing a new institute under its umbrella. But it was indeed a small beginning with initially just one scientific position.

The Institute was initially hosted by the Austrian national statistics office.

The Institute was in many respects very fortunate to have Lothar Bosse as it founding director. Bosse was president of the National Statistics Office and personally had a keen interest in demographic matters. This also followed the example of the German Federal Institute for Population Research (BIB) which was affiliated with the National Statistical Office in Wiesbaden. Such close relationships made sense because it assured good access to all kinds of data. Over the years the Institute then grew in size and published important studies in the Austrian context.

As a prominent Austrian statistician and member of the Academy, you chaired the Institute Board for around three decades. What were your priorities in this position?

Since there was no question about the high scientific productivity of the Institute, my main task was to see that the results were disseminated and actually used in societal and political discussions while at the same time I tried to protect the Institute from possible outside interference into the work.

But then around the 25th anniversary of the Institute in 2001 another major transition took place.

By that time the Institute was well established in Austria as a centre of expertise on issues of fertility, migration and population ageing. It served as the Austrian partner for several international projects. But then the Austrian Academy received significant additional funds from the government to build a few high profile internationally oriented institutes. Most of the money went to establish major new centres of excellence in the life sciences. In the philosophical-historical class of the Academy, the Demographic Institute was the only one chosen to be transformed into such an

internationally oriented centre. The budget was more than doubled, a new internationally experienced director was chosen who recruited some top demographers from all over Europe and the working language became English.

Was this a difficult transition?

Well, the language transition was not easy with the Academy president at the time being a scholar of German literature and German as the working language of all other similar institutes. But the two of us jointly managed to convince the leadership that the switch to English was a necessary prerequisite for successful internationalisation. As an indication of this shift, the name of the Institute was also changed to the "Vienna Institute of Demography". Another important aspect of the smooth and very successful transition was that the previous director Richard Gisser agreed to continue to serve the Institute as Deputy Director. I highly appreciate this good collaboration between the two of you and Alexia Fürnkranz-Prskawetz in the management of the Institute. It has provided a very productive working environment for the excellent research staff of the Institute which is now considered one of the leaders in the field of demography in Europe and in the world.

Francesco Billari

Prof. Francesco Billari is chair of the Sociology Department at Oxford University and President of EAPS (European Association for Population Studies).

Do you remember what your first contact with the VID was? What was your impression of the VID? And how did you get in touch?

My first contact with the VID was during my period at the Max Plank Institute for Demographic Research in Rostock. When I arrived there in 1999, Alexia Prskawetz and Gerda Neyer were already there... I don't think it was called VID at that time.

It had still the German name, "Institut für Demographie". And it was a rather small place then. What were your first personal links with the Institute?

I probably should not say so, but it was not a big point on the map of demography at that time. My first personal involvement was only after its expansion in 2002 when I spent the summer at the VID working primarily with Alexia [Przkawetz] and Dimiter Philipov. In terms of a formal connection, I was appointed a member of the Advisory Board of the social science section of the Austrian Academy of Sciences and last year I was honoured by being elected as a foreign member of the Academy. Other connections were through students. Some of my students have gone to the VID for short periods. Some of them have undergone successful careers; Agnese Vitali spent a period there and now she is a successful lecturer at Southampton and her first paper is a joint study between her, myself, Alexia

and Maria Rita Testa in the European Journal of Population. There are many more such connections including the organisation of workshops. I was also the guest editor of one of the Vienna Yearbooks.

> As a leading European demographer looking at the spectrum of demographic research centres in Europe, how would you describe the role of the VID, how would you see the niche and role that the VID plays in the field of European demography today?

The VID is currently one of the stars in the field of European demography and has become one of the big players over the past years. Today it is clearly a place where people from all over Europe want to go and work. You seem to be able to attract the highest quality people from all over. It's really the place to be. I must say that you also enjoy the fortune of being situated in Vienna which is something you make good use of. You have a great institute in a great city.

> Every few years we assess where we stand and think how our research programs for the coming years should be structured. As someone who has a good overview of the European demography landscape and also knows the VID well, does anything come to mind that you would suggest to us?

I am most familiar with your work on family and fertility and I think you should continue doing good work in this area – there is great recognition of the work you are doing. I think it's also important to keep the highest standards in other areas where you are already leaders such as demographic modelling, population forecasting in collaboration with IIASA and also mortality. You should probably not try to do everything – I think it's good to be selective and have a critical mass of people who are working in the same place. Joining forces with the other pillars of the Wittgenstein Centre hence makes a lot of sense.

Gabriele Doblhammer-Reiter

Prof. Gabriele Doblhammer-Reiter is Professor of Empirical Methods in Social Science and Demography at the University of Rostock and Executive Director of the Rostock Center for the Study of Demographic Change. She was a researcher at the VID from 1995 to 1999.

> What is your connection with the VID? During which period of time did you work at the VID?

I was at the VID between 1995 and 1999 as a Research Scientist mostly writing my PhD thesis.

> What role has your affiliation with the VID played in your professional life?

It has played an extremely important role in my career. I received considerable help from the researchers working there at that time. For example Richard Gisser, Peter Findl and Josef Kytir assisted me since my thesis was data intensive. For this reason it also helped that the VID was in close contact with Statistics Austria.

> If you compare different demographic re-

search institutes, for you, what is special about the VID?

The VID is one of the leading and most exciting institutions in Europe and possibly in the world. Its perspectives are very broad. The VID has turned Vienna and Austria into a hotspot for demographic research. The VID has brought together many international researchers that are also linked to other research institutions in and outside of Austria. This network makes the VID even more attractive.

What is the main influence of the VID on the scientific community? What is the main influence of the VID on society?

The VID publishes extensively – researchers are always discovering new and innovative research topics. The VID is also very active in bridging the gap between research and policy. Some publications have a wide audience [such as the German language "Demographische Forschung aus erster Hand"] and the VID makes great efforts to disseminate its research results to the general public through the media. Actually, I know this because my mum always sends me articles from the main newspaper about research at VID.

If we play a word association game, what would be your three words that characterise the VID?

Young, exciting, open (to new topics and research collaboration), extremely friendly.

Graziella Caselli

Prof. Graziella Caselli is Professor Emeritus in Demography at the University la Sapienza (Rome), former president of EAPS and at present chair of the Scientific Advisory Board of the VID.

What is your connection with the VID?

For many years I've collaborated with VID's researchers on topics related to differential mortality. Since 2014 I act as a Chair in the Scientific Advisory Board (SAB) of the Institute.

If you compare different demographic research institutes, for you, what is special about the VID?

It is efficient and effective in its scientific presence at the global level and the quality of its research also enables substantial advancement of human welfare in general.

What is the main influence of the VID on the scientific community? What is the main influence of the VID on society?

Thanks to the dynamism of its young researchers, the VID is a constant presence in the scientific community proposing innovative research and methodologies. Furthermore, the VID puts significant effort in communicating with policy makers as well as with society through mass media.

If we play a word association game, what would be your three words that characterise VID?

Efficient, dynamic and... simpatico!

Education and fertility in post-transitional settings

Fertility trends and variation

Since the early 2000s, the VID has become one of the leading research institutions studying fertility and family change in post-transitional societies, especially in Europe. This encompasses methodological contributions addressing measurement issues, theoretical studies that aim to explain low fertility and research focused on specific drivers of low fertility. The VID has also been at the forefront of data collection and dissemination, including a joint work with the Max Planck Institute for Demographic Research in Rostock on launching and expanding the *Human Fertility Database* (www.humanfertility.org) and the *Human Fertility Collection* (http://www.fertilitydata.org). Another data-related website, *Geburtenbarometer (Birth Barometer*, http://www.oeaw.ac.at/vid/barometer/), provides regularly updated analyses of fertility trends in Austria and Vienna.

The VID has also made an important contribution to **theories pertaining to low fertility**. Lutz, Skirbekk and Testa have developed a *Low Fertility Trap* hypothesis describing a self-reinforcing mechanism where low fertility feeds into a downward spiral of declining numbers of births and fertility rates. More recently, Striessnig and Lutz have revisited the concept of *optimal fertility in conjunction with high and rising education level*. As education incurs a cost at a younger age and results in higher productivity during working age, for most countries the desirable long-term fertility rate is well below replacement level.

Much of the fertility research at the VID examines specific **drivers of fertility change**. Prominent among these are the *influences of economic uncertainty*, especially during economic recessions, researched by Sobotka, Skirbekk and Philipov. They show that uncertain times, including the recent economic recession, usually lead to a downturn in fertility rates.

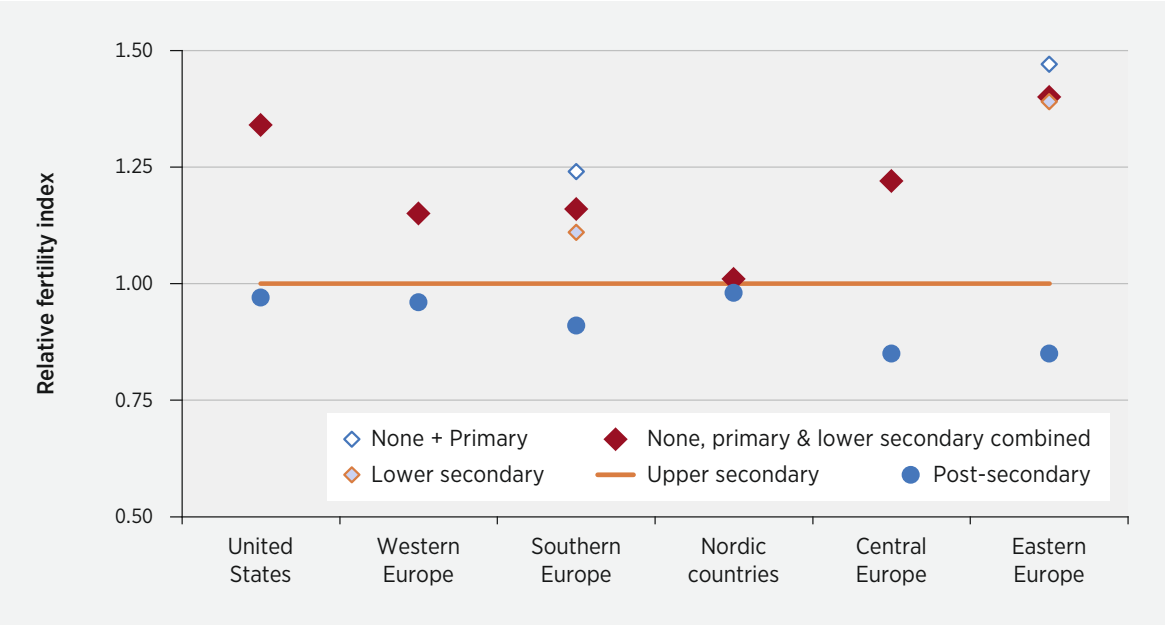
While *the effects of migration* on fertility have often been discussed, VID research demonstrates that migrants typically give only a small boost to the fertility levels of the main destination countries in Europe. Philipov and Berghammer analysed the *influence of religiosity* on fertility ideals, intentions and actual behaviour, finding that religiosity has a positive influence on all three measures. The importance of policies is underlined in the study by Matysiak and Szalma which shows that paid parental leave leads to substantial delays in women's entry into employment, but it also encourages progression to a second child.

In a broader perspective, Lutz, Testa and Penn demonstrated negative relationship between *population density and fertility*. Their study also found that individual fertility preferences also declined with population density.

The VID has contributed to **methodological advancement** in fertility research, especially by studying alternative indicators of fertility and population replacement (see p. 24). Several studies by Ediev, Sobotka and others on developing indicators that measure the joint influence of fertility and migration on population replacement highlight the growing role migration plays in population changes in Europe. From a cohort perspective, VID researchers have worked on developing a cohort model of fertility postponement and recuperation (joint work with Lesthaeghe, Frejka and Neels) in the course of the transition to a late pattern of childbearing which can also be used for fertility projections.

At present the ERC-funded research project EURREP focuses especially on studying **educational differentials in intended family size, childlessness and completed fertility** in low-fertility countries (see Fig. 1). This focus adds a key "quality" dimension into the study of fertility and population change. This work involves development of a new database on *Completed Fertility and Education* (CFE, http://www.cfe-database.org/).

Fig. 1: Relative fertility index (RFI) by broad education category, women born around 1960 in Europe and the US (RFI of women with upper secondary education = 1)



Source: Basten, Sobotka and Zeman (2014)

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Basten, S., T. Sobotka and K. Zeman. 2014. *Future fertility in low-fertility countries.* In W. Lutz, W. P. Butz and S. K.C. (eds.) *World Population and Human Capital in the Twenty-First Century.* Oxford University Press, 39–146.

Lutz, W., V. Skirbekk and M. R. Testa. 2006. *The low fertility trap hypothesis. Forces that may lead to further postponement and fewer births in Europe.* Vienna Yearbook of Population Research 2006: 167–192.

Sobotka, T., V. Skirbekk and D. Philipov. 2011. *Economic recession and fertility in the developed world.* Population and Development Review 37(2): 267–306.

Fertility intentions, ideals and their realisation

Ever since its foundation in 1976, fertility intentions and ideals were among main research topics at the VID. In the 1970s, the VID initiated the first longitudinal study on families and children, focusing on fertility intentions and their realisation among married women. Three decades later, the VID took a lead in conducting the *Generations and Gender Survey* (GGS), the second longitudinal survey on families and family formation in Austria, carried out between 2008/9 and 2012/13. The two-child norm has remained the societal ideal and intended family size since the VID's establishment. Recent research by Sobotka and Beaujouan reveals that this is a common pattern in most other European countries: Fertility ideals have been remarkably stable and strongly focused on two children.

In European countries, where contraception is widespread, the intended number of children is often higher than the actual fertility individuals achieve by the end of their reproductive life. What explains this discrepancy? VID researchers have extensively studied the formation of fertility intentions and their realisation at an **individual level**. This work, mostly conducted within the EU-financed projects *FERTINT* and *REPRO* coordinated by Philipov, rests especially on the *Theory of Planned Behaviour*, and resulted in a special issue of the *Vienna Yearbook of Population Research* on *Reproductive Decision-making* (2011) and a book on *Reproductive Decision-Making in a Macro-Micro Perspective*.

Testa and colleagues worked on **fertility decision-making within couples**. Their research shows

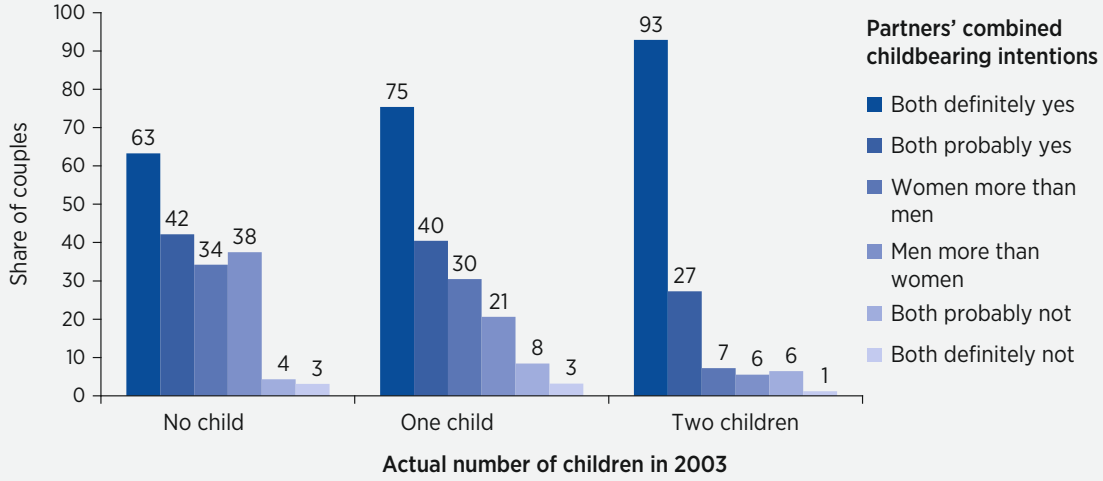
that living in a union and having adequate resources are key preconditions for childbearing decisions. Within couples, agreement about childbearing intentions strongly predicts realised fertility (see Fig. 2). Follow-up studies for Austria and Italy by Testa, Cavalli and Rosina have shown that the conflict between discordant partners is more likely to be solved in favour of childbearing if the two-child norm has not yet been reached.

Education is a key factor influencing reproductive intentions. Longer time spent in education delays the decision to start a family. However, highly educated people have more resources, which allow them to express higher fertility intentions. Multilevel analysis by Testa suggests that this is particularly true in countries where many highly educated women have successfully balanced their work and family life. This topic is currently investigated in the framework of the research project ReCap *(Reproductive Decision-Making and Human Capital;* http://recap.wu.ac.at/people).

Economic and cultural factors significantly shape **aggregate-level differences** in childbearing intentions. This has been confirmed during the recent economic crisis: Testa and Basten's research shows that the intended number of children fell in countries most severely affected by the economic downturn, such as Greece. Moreover, the decline in intended and actual family size can reinforce each other. Testa and Grilli found that Europeans are more likely to prefer small families if they live in regions in which fertility has been low for a long time and people have been socialised in families with few children.

VID researchers have also applied **qualitative approaches** to gain insights into the formation of fertility intentions. Problem-centred interviews indicated that feeling "ready" was crucial for the decision to have a child. Readiness was mainly an emotional state of mind, which also applied to the partner and to the couple as a unit. Research by Buber-Ennser and Fliegenschnee, combining qualitative and quantitative methods, revealed that the feeling of being ready partly explains childbearing intentions among childless women and men in Austria.

Fig. 2: Share of couples (in percent) having a child within four years by their childbearing intention in 2003, Italy



Source: Testa, Cavalli and Rosina (2014) – computation based on GGS1 and GGS2 data

Key references

Buber-Ennser, I. and K. Fliegenschnee. 2013. *Being ready for a child. A mixed-methods investigation of fertility intentions.* Family Science 4(1): 139–147.

Philipov, D., A. C. Liefbroer and J. Klobas (eds.). 2015. *Reproductive Decision-Making in a Macro-Micro Perspective.* Dordrecht: Springer.

Testa, M. R., L. Cavalli and A. Rosina. 2014. *The effects of couple disagreement about child-timing intentions: a parity-specific approach.* Population and Development Review 40(1): 31–53.

Non-marital childbearing: Austria in an international context

Austria has a long history of childbearing outside of marriage. In the 19th century, the share of non-marital births was among the highest in Europe. Research conducted at VID during the 1980s investigated both the rise in non-marital childbearing and its regional patterns. The topic was revisited in several studies in recent years. Berghammer contributed to a multi-country project headed by Perelli-Harris showing that in Austria – as in most other countries – the least educated women have higher first birth rates in cohabitation, whereas the best educated women are most likely to have children within marriage. Austria is also counted among countries where childbearing in cohabitation is common (see Fig. 3), but cohabiting unions are usually converted to marriage in the long run.

VID researchers conducted focus group discussions to explore the attitudes and values attached to marriage and cohabitation. In Austria, the meaning of marriage and cohabitation depend on a person's stage in the life course. Marriage continues to stand for stability and long-term commitment. Respondents regarded those elements as essential for childrearing. Those surveyed responded that while children should not be the main reason for marrying, if the relationship works and children are planned, it is a good time to think about marriage.

Key references

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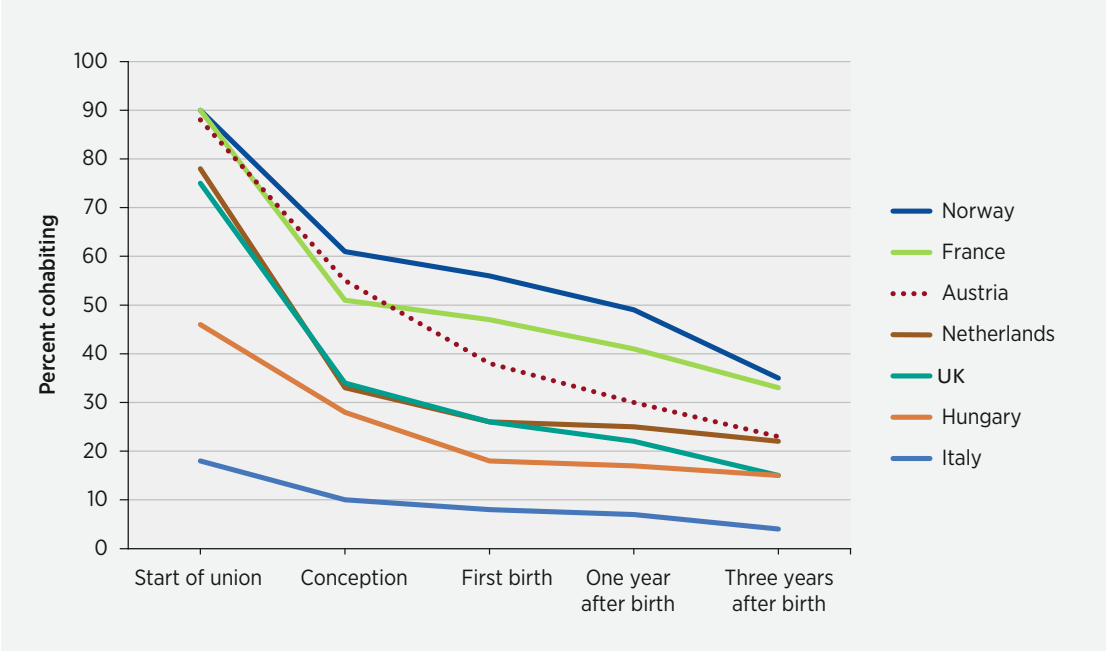
Perelli-Harris, B., W. Sigle-Rushton, M. Kreyenfeld, T. Lappegård, R. Keizer and C. Berghammer. 2010. *The educational gradient of childbearing within cohabitation in Europe.* Population and Development Review 36(4): 775–801.

Fig. 3: Percent in cohabitation at different stages in the life course (around 1995–2005)



Note: Pertains to women who gave birth within a cohabiting or marital union.

Source: Perelli-Harris et al. (2012)

Tempo effects in demographic period indicators

New approaches

Demographic period indicators such as the total fertility rate (TFR) or life expectancy have been widely used for many decades. Yet until recently there was only a limited debate about their usefulness. This changed with a series of publications by John Bongaarts and Griffith Feeney in which they proposed that these indicators are inappropriate for describing current demographic conditions when the age at experiencing a given event (birth, marriage, or death) is changing. These changes in the timing of demographic events are seen as leading to undesired distortions in demographic trend analyses. Bongaarts and Feeney suggest that in order to keep the interpretation of period measures reflecting "current conditions", demographic period indicators should be adjusted for these tempo effects.

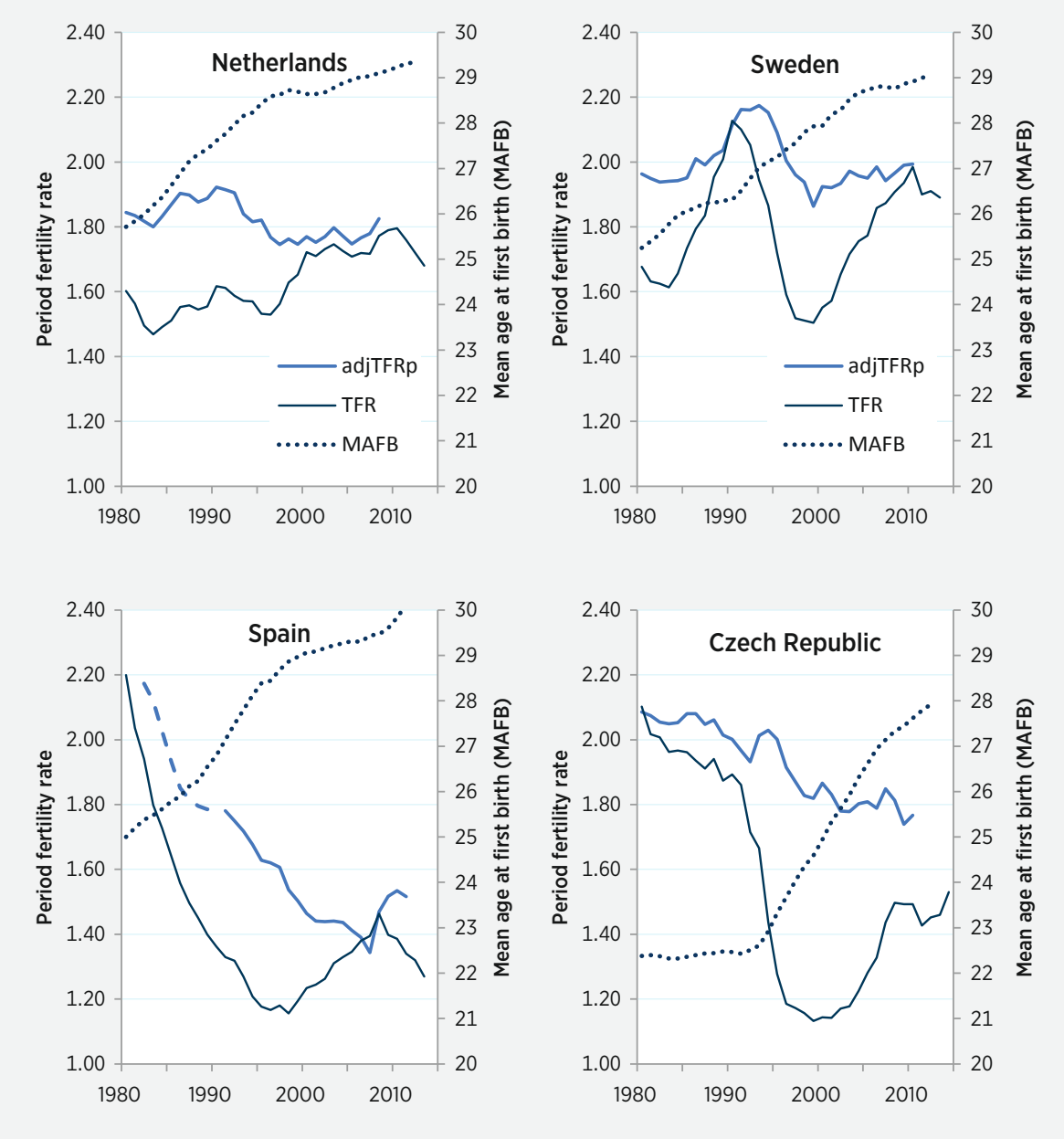
Bongaarts and Feeney's work stimulated an intensive discussion among demographers. This dispute has potentially important consequences for our interpretation of demographic trends: It has been shown for fertility, marriage and mortality that tempo adjustment can lead to very different conclusions compared to the use of conventional indicators. Sobotka and Lutz's study on this topic concluded that incorrect interpretations of fertility trends based on the conventional period TFR may result in distorted policy conclusions and, potentially, in misguided policies. **The VID has become a leader in the study of tempo effects** from the theoretical and methodological perspectives, and above all, with regard to the empirical applications. These include especially the biennial *European Demographic Data Sheet* published since 2006 (see www.oeaw.ac.at/vid/datasheet/), which is the only publication regularly providing tempo-adjusted fertility rates for European countries, and a special issue published in *Comparative Population Studies.*

Studies conducted at the VID on European countries demonstrated that extremely low period fertility rates, with the TFR below 1.3, were a temporary consequence of the postponement of childbearing to higher ages. Tempo effects had a strong influence on marriage trends as well. Winkler-Dworak and Engelhardt demonstrated that a significant share of the decline in first marriage rates in four European countries was due to tempo distortions.

VID research has widely contributed to **the development of new tempo-adjusted measures** of period fertility and marriage and their application. Methodological development included new fertility tempo-adjustment method proposed by Kohler and Philipov that takes into account changing variance in fertility schedule. Bongaarts and Sobotka elaborated upon a new indicator *of tempo- and parity-adjusted total fertility rate (TFRp),* proposed earlier by Bongaarts and Feeney (see Fig. 4).

Whereas tempo adjustment is widely practised in the area of fertility analysis, **mortality tempo adjustment** is less accepted and has so far only rarely been used in empirical analyses. The VID research group "Health and Mortality" is a forerunner in this respect and conducted several analyses on the basis of tempo-adjusted life expectancy, including the trends in differences between Eastern and Western Germany and the extent of differences between industrialised countries. Moreover, studies by Luy and Wegner-Siegmundt presented the first interpretable definition of tempo-adjusted life expectancy and tempo-adjusted indicators in general. Moreover, Wegner-Siegmundt introduced the differentiation between two types of tempo effects which have different impacts on the method of life table construction, and demonstrated the origin of tempo effects in age-specific death rates with empirical data. The VID research on tempo effects and mortality measurement also resulted in the development of alternative methodological approaches to measuring longevity, proposed by Ediev.

Fig. 4: Period total fertility rate (TFR), tempo- and parity-adjusted total fertility rate (adjTFRp), and mean age at first birth in four European countries, 1980–2014



Source: Bongaarts and Sobotka (2012)

Key references

Luy, M. 2010. *Tempo effects and their relevance in demographic analysis*. Comparative Population Studies 35(3): 415–446.

Wegner, C. 2010. *Tempo effects in different calculation types of period death rates*. Comparative Population Studies 35(3): 543–568.

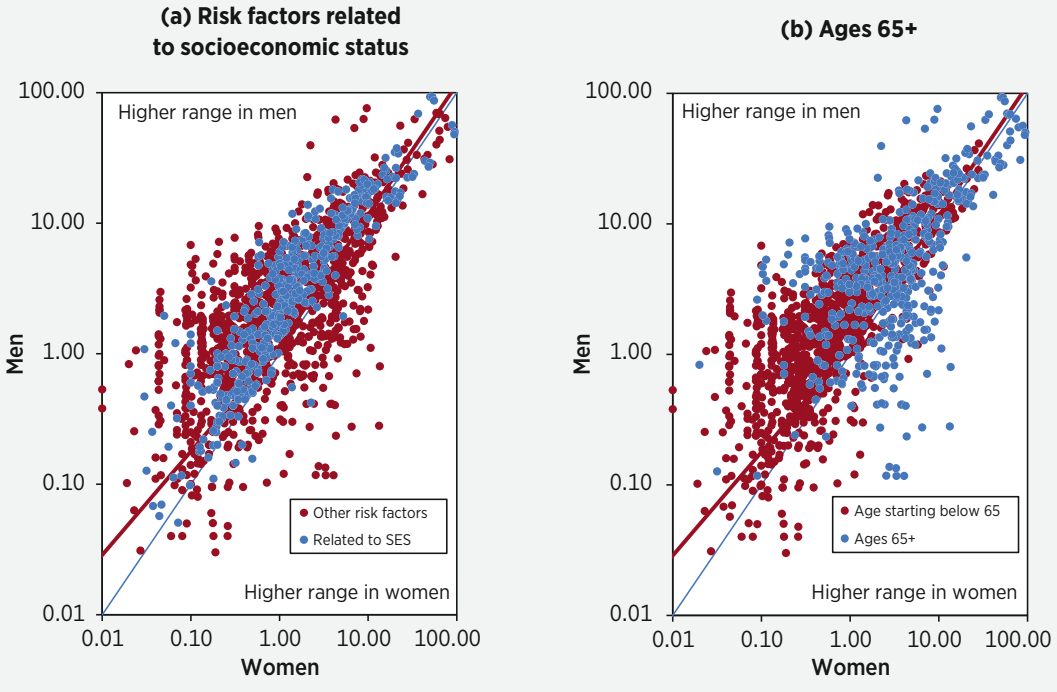
Bongaarts, J. and T. Sobotka. 2012. *A demographic explanation for the recent rise in European fertility*. Population and Development Review 38(1): 83–120.

New theories and findings on the gender gap in health and mortality

The research group "Health and Mortality" traces the determinants of longevity and ageing by looking at the interaction of environments, genetics and health behaviours. Our specific research strategy lies in the analysis of differentials in health and mortality, e.g. between women and men, socioeconomic groups, migrants and non-migrants as well as differences between countries or smaller regional units. A problem that emerges quite often in this kind of research is that the existing methods are not sufficient to answer these research questions. This is why we are also conducting applied methodological works, including for instance tempo-adjustment of period life expectancy (see page 24), the longitudinal survival method (Luy et al. 2015) and indirect estimation techniques (Luy 2012). The analyses are based on external macro and micro data including official population statistics and survey data as well as our own data of the German-Austrian "Cloister Study" (project website: www.cloisterstudy.eu). The main aim of our research is to disentangle the complex causation of healthy ageing towards a comprehensive understanding of why a specific subpopulation lives longer and healthier than another.

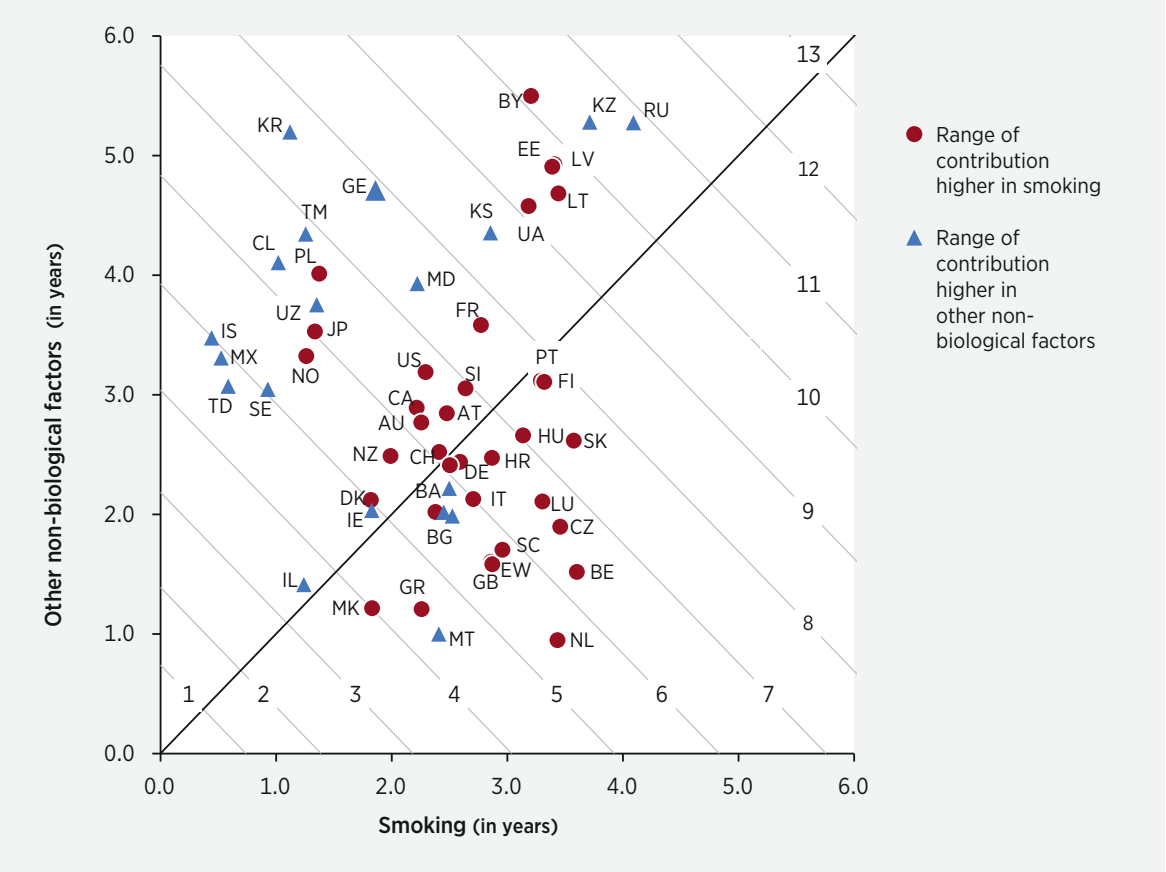
The gender gap in life expectancy is one of our main research themes in this context. Although many different factors have been identified to contribute to excess male mortality, it is still unclear which path of the complex cause-effect chain is the decisive driver of the life expectancy gap between women and men. Recently, we formulated the **"risk group hypothesis"** which states that the current extent of the gender gap is predomi-

Fig. 5: Range of death rates per 1,000 persons between specific subpopulations among women and men from 72 studies on differential mortality for 1,718 single effects by specific risk factor (axes in logarithmic scale)



Source: Luy and Gast (2014)

Fig. 6: Average contributions of smoking and other non-biological factors to gender differences in life expectancy at birth (diagonal lines), 1955/59 – 2005/09, 53 industrialised countries



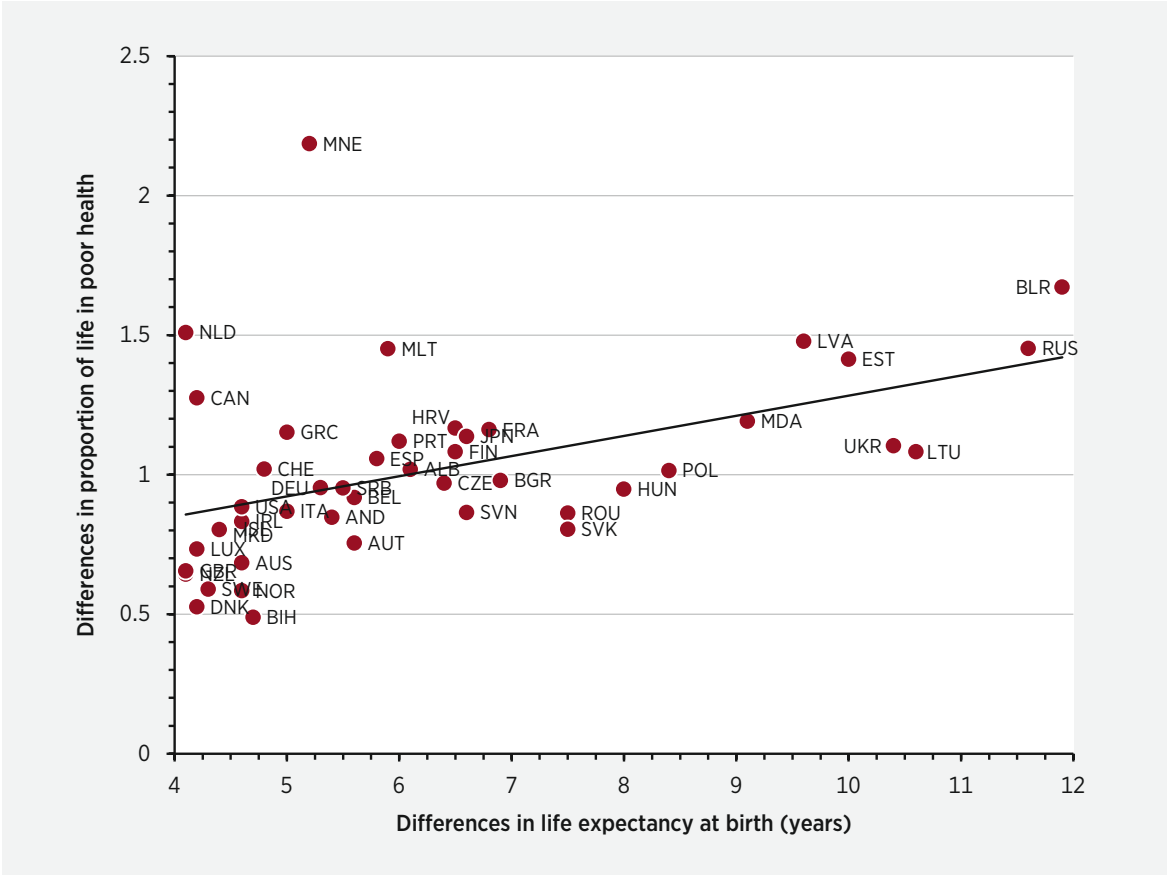
Data: WHO Mortality Database, UN World Population Prospects (2010 Revision); Source: Luy and Wegner-Siegmundt (2015)

nantly caused by disproportionate high mortality levels of specific male subpopulations which are primarily related to socioeconomic status (Luy and Gast 2014). To test this hypothesis we performed an extensive meta-analysis of the range of mortality differentials within women and men. In line with our hypothesis we found that the range of mortality differentials is larger among men in around 80 percent of all analysed risk factors, and in more than 90 percent of the risk factors related to socioeconomic status (Fig. 5a). Cases with a higher female range of mortality differentials are rare exceptions and appear primarily in the highest age groups (Fig. 5b).

With regard to the specific risk factors of mortality, tobacco consumption is seen as the decisive driver of both the trend and the extent of the gender gap. However, our recent empirical findings show that the **impact of smoking is context-specific** and differs significantly between populations. Figure 6 depicts this great heterogeneity by showing the average contributions of smoking and other non-biological factors to the gender gap in life expectancy over the years 1955–2009 for 53 industrialised countries. We found also that while the impact of smoking on gender differences in life expectancy declines in all industrialised societies, the contribution of other non-biological factors has increased during the last decades. This indicates that – regardless of the prevailing effect of smoking – many populations still have considerable potentials to further narrow gender gaps in life expectancy (Luy and Wegner-Siegmundt 2015).

Another topic we are dealing with is the so-called "gender paradox in health and mortality" which

Fig. 7: Female-male differences in life expectancy at birth and proportion of life spent in poor health, 45 more-developed countries, 2010



Data: 2010 Global Burden of Disease Study

Source: Luy and Minagawa (2014)

describes the phenomenon that women live longer than men but report worse health. By analysing the proportion of life spent in poor health across the more developed countries we found evidence that women's advantage in longevity itself translates into a disadvantages in health relative to men. Figure 7 shows that the wider the gender gap in life expectancy at birth, the larger the gender gap in the proportion of life spent in poor health. Thus, a greater disparity in longevity is accompanied by an increase in the relative female disadvantage in health. Based on these results we formulated the **"longevity hypothesis"** and suggested a change of perspective, i.e. that women suffer from poor health not in spite of living longer, but because they live longer than men (Luy and Minagawa 2014). Combining this factor with the well-known differences between women and men in the types of diseases makes the gender-health paradox far less paradoxical.

Key references

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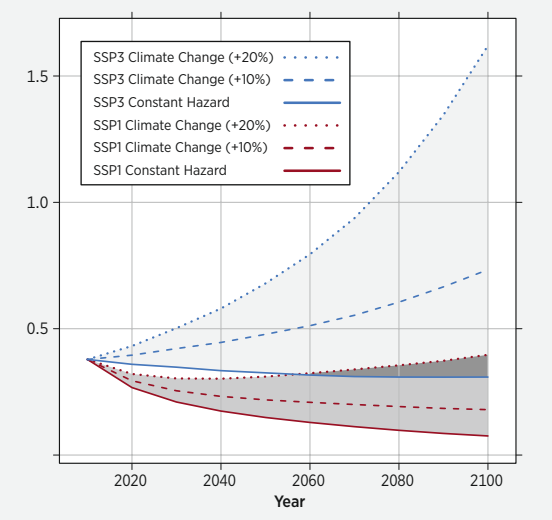
Luy, M. and C. Wegner-Siegmundt. 2015. *The impact of smoking on gender differences in life expectancy: more heterogeneous than often stated*. European Journal of Public Health: 25(4): 706–710.

Demographic perspectives in climate change mitigation, adaptation and differential vulnerability

The VID has been at the forefront in applying demographic methods to the study of population and environment as well as climate change mitigation and adaptation. An earlier innovative work includes the development of the **PEDA** (population, environment, development, agriculture) **model** providing quantitative estimates of future trends and interactions between changes in the population size and distribution, natural resources degradation, agricultural production and food security. Employing multi-state population projections by age and sex, the PEDA model is able to account for demographic differentials in access to the food produced. The VID also took a lead in developing a mathematical model of the dynamics of the global economy, demographics and environment coined "Wonderland". The **Wonderland model** mathematically represents the common understanding that pollution increases as population and prosperity rises, while technological innovation is expected to reduce the environmental impact. Meanwhile, pollution restrains the development and demographic dynamics drive demand for resources and influence pollution level. A special feature of the Wonderland model lies in its consideration of slow-fast dynamics, allowing the system variables to evolve with different velocities. Following a successful application of an Advanced Grant of the European Research Council for Wolfgang Lutz's project **"Forecasting Societies Adaptive Capacities to Climate Change"**, the VID vigorously expanded its expertise to the field of vulnerability and climate change. One original contribution is in providing comprehensive empirical evidence at the global, national, community and individual level on the **protective effect of formal education** on reducing vulnerability to natural disasters and enhancing adaptive capacity. Another important output is in empirically introducing the "human core" into the newly developed **Shared Socioeconomic Pathways (SSPs)**, which give alternative narratives and consistent qualitative descriptions of possible future societal challenges to climate change adaptation and mitigation (see Fig. 8). Likewise, the VID has introduced the concept of **demographic differential vulnerability** which emphasises on how susceptibility to harm and capacity to cope and adapt are differentiated between population subgroups. Apart from extensive work on climate change adaptation and vulnerability, current and future work attempts to understand socioeconomic barriers in adopting **personal climate change mitigation actions**. In brief, our work highlights the key role demography plays in climate change and vulnerability research and, when applicable, presents policy implications.

Fig. 8: Predicted decadal number of disaster deaths (in millions). Difference in deaths resulting from estimated education and population effects according to the contrasting scenarios SSP1 and SSP3 to 2100



Source: Lutz, Muttarak and Striessnig (2014)

Key references

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Crespo Cuaresma, J. 2015. *Income projections for climate change research: A framework based on human capital dynamics*. Global Environmental Change, forthcoming.

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The global flow of people

In recent years, the scope of research in the field of migration at the VID has substantially broadened from a focus on Austria and Europe to a global view of migration trends and patterns. Following the establishment of the Wittgenstein Centre in 2011, VID researchers developed a **new, globally consistent dataset on international migration flows** and, for the first time, applied the multiregional modelling framework originally developed by Andrei Rogers and colleagues at IIASA to the Wittgenstein Centre's new global population projections (Lutz, Butz and KC, 2014). The dataset on international migration flows was also used in a study published in the journal *Science* in 2014, in which Guy Abel and Nikola Sander give the first comprehensive view of international migration flows over the 20-year period 1990–2010.

Contrary to conventional wisdom that globalisation triggers a rising tide of migration, results indicate that **migration has been relatively stable since 1995.** At the global level, an average of just 6 in 1000 people moved between countries over five-year periods.

Visualising the complex patterns of global migration is not trivial but essential for validating estimation models, identifying the spatial patterns of flows, and effectively communicating results to a wider audience. The **circular migration plot** developed at the VID (see Fig. 9) shows the relative size and direction of migration streams within the global system of flows. By focusing on migration between the 50 countries with the largest volume of movement, we can highlight where people are migrating to in just one visualisation. Most migrants move over short distances within the same region or between neighbouring regions, and relatively few move between continents. North America, Europe and the oil-rich Gulf countries in western Asia are the destinations of long distance flows. You can take your own tour of 'The Global Flow of People' by visiting www.global-migration.info.

With this work, the VID has made a timely contribution to an important research topic. We received overwhelming and largely positive feedback from the scientific community, policy makers, high school teachers, the international media, and the general public. In its first year, the interactive visualisation recorded **more than 500,000 visits from 225 countries.** The circular plot of migration flows between 50 countries has been integrated into the school curriculum in the German state of North Rhine-Westphalia, and was selected for the 2015 edition of the New York Times bestseller "Best American Infographics". This research has debunked several myths about migration and demonstrated the potential of data visualisation to bridge the gap between science, decision makers and the general public.

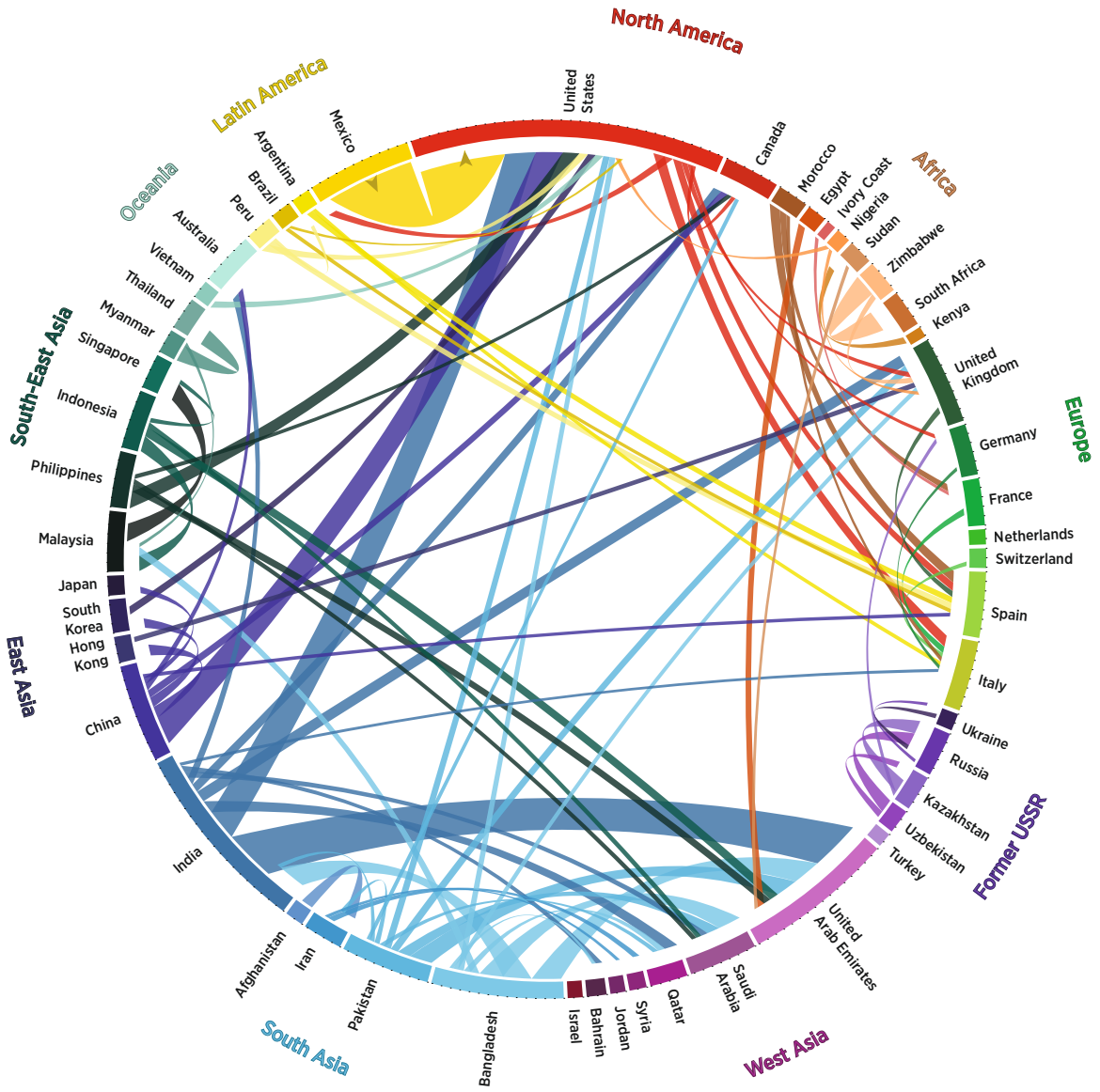
Key references

Abel, G. J. and N.Sander. 2014. *Quantifying Global International Migration Flows*. Science 343(6178): 1520–1522.

Lutz, W., W. P. Butz and S. KC (eds.). 2014. *World Population and Human Capital in the Twenty-First Century*. Oxford University Press.

Sander, N., G. J. Abel and R. Bauer. 2014. *The Global Flow of People*. http://www.global-migration.info

Fig. 9: Migration flows between 50 countries, 2005–2010



Source: Abel and Sander (2014)

Reading the graphic

The circular plot shows migration flows over the period 2005-2010 between the 50 countries with the highest volume of movement. Countries are arranged in a circular layout, with each country as-signed a distinctive colour. The band width denotes the size of the migration flow and assumes the colour of the origin country (the direction of the flow is also indicated by a greater separation of the band from the outer circle at the destination country). Only flows in excess of 70,000 migrants are shown.

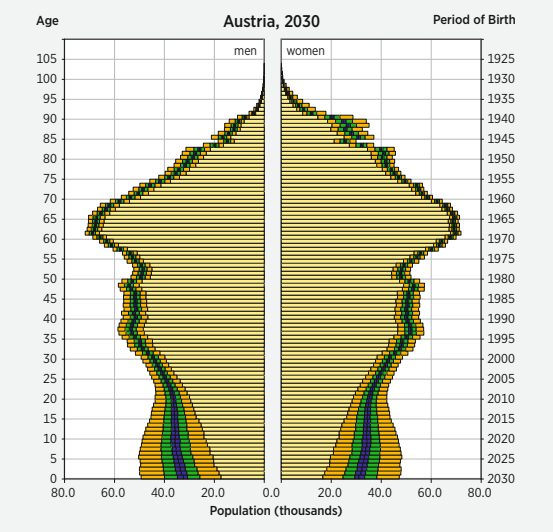
Refining population projections: Probabilistic and multistate population forecasts

Gaining insights into the future is an important aspect of demography and refining the projections to make them more accurate and informative has been a common objective of many forecasting experts. There are two areas where VID scientists have had a particular contribution, and mostly in collaboration with scientists working at the International Institute of Applied Systems Analysis where research on that topic by Andrei Rogers and Nathan Keyfitz was initiated.

The first area is that of **probabilistic population projections** which are oriented toward quantifying the uncertainty in future population growth based on distributions for fertility, mortality and migration in all regions, defined in terms of high or low values assumed to cover 90 per cent of all possible future outcomes (see Fig. 10 for Austria). Several rounds of projections were carried out at the level of world regions. In 1995, Lutz, Sanderson and Scherbov were able to show that a further doubling of the 1995 population (about 6 billion) was unlikely. A few years later, their updated projections showed that the **world's population growth is likely to come to an end during the 21st century.** Finally, in 2008, the authors demonstrated that the speed of ageing is likely to increase over the coming decades and to decelerate in most regions by mid-century.

The second area is that of **multi-dimensional projections by level of educational attainment.** Since the levels of education of individuals and of a geographical entity are highly correlated with their demographic behaviour, particularly in terms of fertility intentions and realisation, health and mortality researchers at the VID have been including education in the projections as a third parameter after age and sex. The results show the common momentum of education and population providing some hints as to how education could shape future human capital and influence important aspects of ageing, economic development and climate change.

Fig. 10: Probabilistic population pyramid of Austria in 2030 [with the orange area referring to the 95 percent uncertainty range and the blue area to the trend considered most likely]



Source: own calculations

The projections cover a large range of education categories and countries, up to 171 in the last round (Lutz et al. 2014). Because data on education are mostly scattered through time and inconsistent across countries and within countries across time, we felt it was necessary to reconstruct past levels of education based on the simple idea that education acquired at young ages is a stable individual attribute during the life course. Accounting for mortality and migration, researchers at VID were able to back-project the levels of education of the population, of 120 countries in 2007 and 171 countries in 2015.

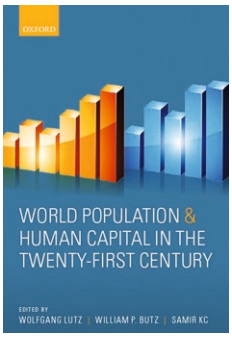
Key references

Lutz, W., W. Sanderson and S. Scherbov. 2008. *The coming acceleration of global population ageing*. Nature 451(6516): 716–719.

Lutz, W., W. Sanderson and S. Scherbov. 2001. *The end of world population growth*. Nature 412(6846): 543–545.

Lutz, W., A. Goujon, S. KC and W. Sanderson. 2007. *Reconstruction of populations by age, sex and level of educational attainment of 120 countries for 1970–2000*. Vienna Yearbook of Population Research 2007: 193–235.

Human capital in the 21st century



The book "World Population and Human Capital in the Twenty-First Century" presents a comprehensive summary of what we know today about the drivers of fertility, mortality, migration and education in different parts of the world and what we can assume for the future. It documents and discusses the international state of the art in these fields through reviews of relevant literature and by presenting and discussing the scientific input from over **550 international population experts** who contributed to this volume in different capacities. The substantive chapters of this volume synthesise this broad knowledge base and translate it into alternate numerical assumptions for calculating alternative scenarios by age, sex and level of educational attainment for all countries in the world to 2060 with extensions to 2100. The projection results are discussed in another set of chapters and selected results for all countries are presented in a numerical appendix. The complete results are presented on a designated web site www.wittgensteincentre.org/dataexplorer.

It is the first book to systematically and quantitatively address the role of educational attainment in global population trends and models. **By adding education to the traditional demographic characteristics** of age and sex, this distinguishing feature substantially alters the way we look at changes in populations and how we project them into the future. In most societies, particularly during the process of demographic transition, women with more education have fewer children, both because they want fewer and because they find better ways to pursue their goals. And better educated men and women in virtually all societies have lower mortality rates while their children have a better chance of survival. The **scenarios** presented in this book show how alternative policies of education expansion in the near term, mostly through their effect on the future educational attainment of young women, can significantly influence the medium to long term paths of population growth for individual countries and the world as a whole. The book also presents many other examples for how the future looks different – and mostly better – once education is explicitly factored into population projections. The pervasive demographic differentials by level of education matter greatly for population dynamics. When we explicitly address this important source of population heterogeneity, the projected future population trends are different from those resulting from the conventional stratifications that include only age and sex. In addition, the future educational attainment levels of the adult population are of great interest in their own right as a key determinant of outcomes ranging across economic growth, quality of governance and adaptive capacity to environmental change, as summarised in the epilogue of the book.

The **new global population projections for 195 countries from 2010 to 2100,** and for 5-year age groups for men and women by six levels of education presented in this volume continue the tradition of working at the forefront of developing new approaches of population forecasting. The book further extends the state of the art by significantly expanding the substantive knowledge base through the broadest ever expert argument solicitation in demography and the systematic incorporation of population heterogeneity by level of education for all countries.

"This is a valuable guide to data, analysis, and expert opinion bearing on the world's demographic future. Particularly instructive is the consistent focus on the transformative role of educational progress."

Professor Samuel H. Preston
University of Pennsylvania, Philadelphia

"This monumental, pioneering volume proselytizes for a new trinity of fundamentals of demography: age, sex, and education. If this book succeeds in its mission, as I hope it will, the future will look different, not only for the science of demography, but also for all people's lives."

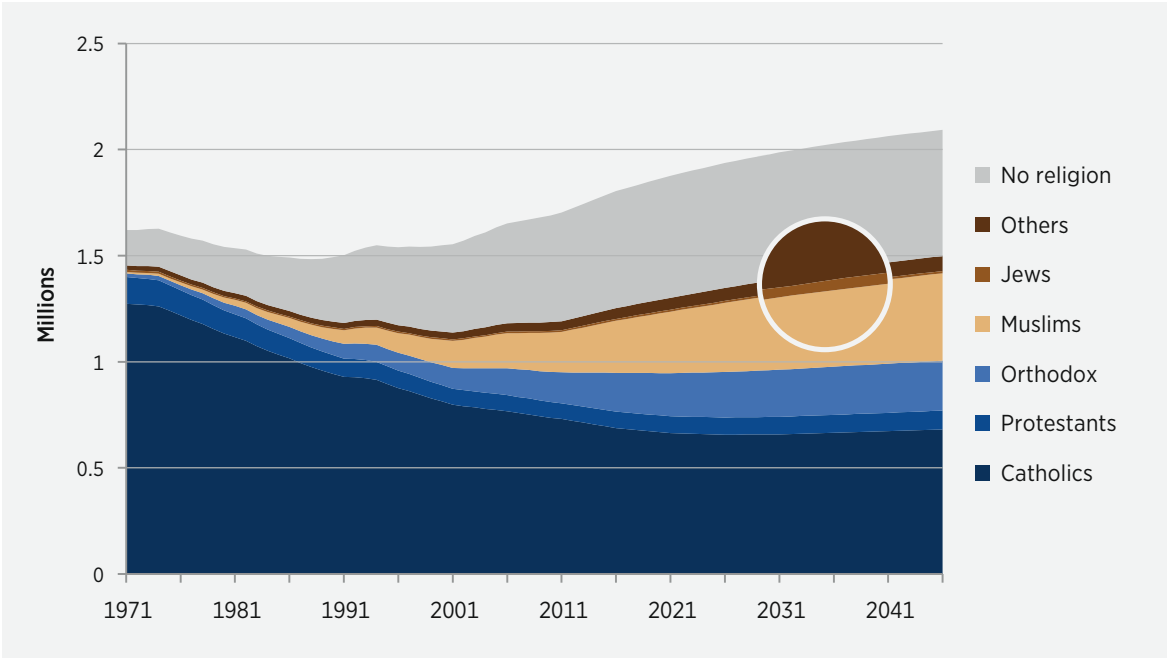
Professor Joel E. Cohen
The Rockefeller University and Columbia University, New York

Demography of religion

Religion is increasingly gaining the attention of politicians, the media and the general public. In this framework, **scientists have a special role to play** regarding the analysis of current trends or religious affiliations and their implications. WIREL (WI for Vienna and REL for Religions in the past, present and future) has established itself in the relative new field of religious demography, a field in which researchers at VID have been main contributors and developers for some years. WIREL examines the role of religions in shaping the social and demographic structure of the population of Vienna using unique datasets to reconstruct, analyse and forecast the population of the city by religion. The WIREL team examined different demographic and religious forces that have shaped Vienna's population composition throughout the past as well as the implications that such forces hold for the present and the future. In this context, WIREL examines the process of secularisation, investigates changes in the levels of religiosity and reveals spatial patterns of religious diversity. This research is highly relevant for understanding dynamic religious, social and demographic trends in Vienna and other European cities. The role of religion is currently **a topic of considerable public interest** in Vienna as well as across Europe. Over the course of the last half-century, Vienna has witnessed rapidly changing religious composition accompanied by consistently increasing religious diversity (see Fig. 11).

Secularisation and migration are the key drivers of the changing religious composition and diversification of Vienna since the 1970s. These drivers also affect fertility. While researchers found decreasing fertility levels among higher-fertility groups (Muslims and Jews), they also revealed the persisting differences in age at first birth and childlessness which could have an impact on the future composition of the city. This could be reinforced by interreligious unions which have an impact on fertility behaviour and children's religious affiliation. Spatial analysis was used to evaluate the risk of religious segregation, revealing trends in residential patterns by religion and ethnicity that show a tendency towards more mixed neighbourhoods. In terms of religiosity, the research shows that more than 50% of Vienna's population belongs to the fuzzy group of weakly re-

Fig. 11: Population of Vienna according to religion, 1971–2046



Source: WIREL

ligious, and that younger generations are less religious than older ones across all religions. However members of the Catholic Church in Vienna are leaving at all ages. Forecasts show that the future religious landscape of Vienna will be even more diverse.

Several data visualisation (see Fig. 12) tools were developed for the purpose of better illustrating these data:

- The WIREL online data visualisation enables the exploration of Vienna's increasing religious diversity between 1971 and 2011 as well as the forces shaping religious composition see here: http://www.wirel-project.at/dataviz
- Another WIREL online data visualisation illustrates Vienna's changing residential patterns by religion and ethnicity between 1971 and 2011. The interactive online maps feature estimates of the small-scale distribution of Vienna's residential population by religion in 2011.

There is a clear consensus that religion is a **meaningful dimension of social and cultural diversity.** Evidence on religious composition is important for urban governance, particularly for integration and social cohesion. Since 2001, religious affiliation is no longer surveyed by the Austrian census. Hence the various aspects of research conducted by WIREL facilitate the global assessment of both quantitative and qualitative aspects of religious diversity in Vienna.

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Speringer, M. and R. Bauer. 2014. *Residential Patterns by Religion and Ethnicity in Vienna*. Yearbook of International Religious Demography 2014: 157–166.

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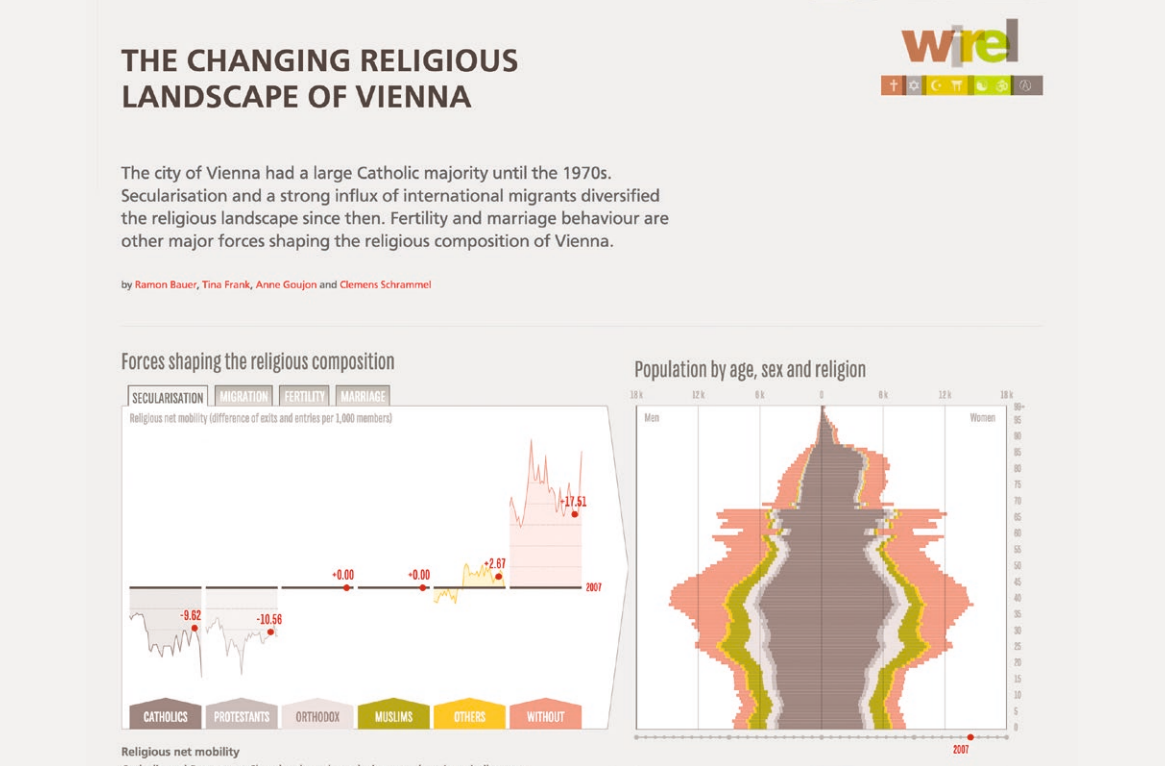
Fig. 12: The WIREL online data visualisation



Source: http://www.wirel-project.at/dataviz

Redefining age and ageing

Previously, studies of ageing used only one characteristic of people, their chronological age. Warren Sanderson and Sergei Scherbov provided a new framework for measuring ageing based instead on characteristics of people that change over time, across space, and differ across subgroups of the population such as life expectancy, health, cognitive function and other measures. These measures can be used by demographers to better understanding ageing societies.

Demographers have not traditionally used such measures in studies of population and society, instead using age as a proxy for these characteristics. But as lifespans have increased, the same age no longer correlates with the same level of health and other such characteristics.

Ageing is a multidimensional process and chronological age is only one characteristic of people. However, different populations have very different characteristics at a given chronological age. We used to consider people old at age 65. Today, **someone who is 65 may be more like someone who was age 50 about 100 years ago** in terms of many important aspects of their lives. Moreover, a 65 year old person living in Japan today is very different in terms of remaining life expectancy and health from a person of the same age living, say, in Burkina Faso. However, the traditional definition of ageing completely ignores these differences.

Policy recommendations with respect to ageing differ depending on exactly which characteristics of people are measured. For different purposes we need different measures (see Fig. 13). By re-conceptualising population ageing to incorporate how people actually function, we provide the foundation of a much richer and more realistic view of population ageing.

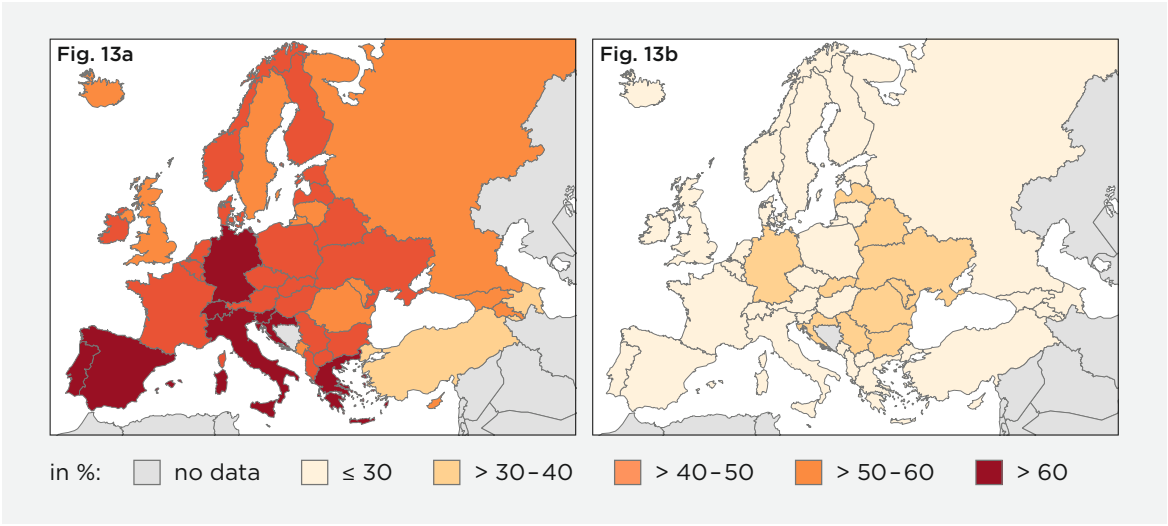
Key references

Sanderson, W. C. and S. Scherbov. 2013. *The characteristics approach to the measurement of population ageing*. Population and Development Review 39(4): 673–685.

Sanderson, W. C. and S. Scherbov. 2010. *Remeasuring ageing*. Science 329(5997): 1287–1288.

Sanderson, W. C. and S. Scherbov. 2005. *Average remaining lifetimes can increase as human populations age*. Nature 435(7043): 811–813.

Fig. 13: Conventional (Fig. 13a) and prospective (Fig. 13b) old-age dependency ratio for Europe 2050



Source: European Demographic Data Sheet 2012

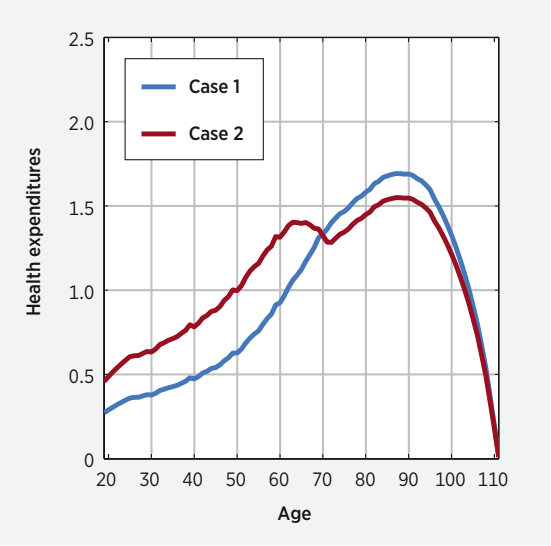
Life-cycle models with realistic health and mortality

Over the past ten years the modelling of **life-cycle behaviour** has developed into one of the key themes of the research group on population economics. Our work on optimal life-cycle investments into health and survival has advanced the theoretical literature on life-cycle behaviour on two counts: First, we pay close attention to **realistic patterns of mortality, survival and the corresponding health investments**. Second, we explore how health behaviour is shaped by socio-economic factors that have received little attention so far: the anticipation of future descendants, the presence of spill-overs in the consumption of health care, the interaction of health investments and retirement, and the presence of temporal risk aversion.

Figure 14 contrasts the life-cycle patterns of optimal health spending when health has no impact on the probability/ability to work (case 1), as opposed to when it has (case 2). Notably, in the latter case there is a spending peak in the years preceding the optimal age of retirement (at age 70), reflecting efforts to maintain "workability". The second peak reflects the spending aimed at treating life-threatening conditions at high ages.

In extensions to this research we have explored the **relationship between the value of survival and the reproductive value** within general population models. Life-cycle modelling also forms **the backbone of macro-economic overlapping generation models** in which we have studied **health and pension policies** as well as the impact of population change. Ongoing work investigates the impact of survival on educational investments and retirement, the consistency between economic and evolutionary models of the life-cycle, and optimal life-cycle behaviour in the presence of health shocks. Our research has been part of the EU FP-7 project "Long-Run Economic Perspectives of Ageing Societies" (2009–2012) and the FWF funded project "Medical Progress, Health Expenditure and Population Ageing" (2014–2017, http://medpro-project.eu/).

Fig. 14: Health expenditure in 10,000 USD; case 1: health has no impact on probability/ability to work; case 2: health has an impact on probability/ability to work



Source: Kuhn et al. (2015)

Key references

Kuhn M., S. Wrzaczek, A. Prskawetz and G. Feichtinger. 2015. *Optimal choice of health and retirement in a life-cycle model.* Journal of Economic Theory 158: 186–212.

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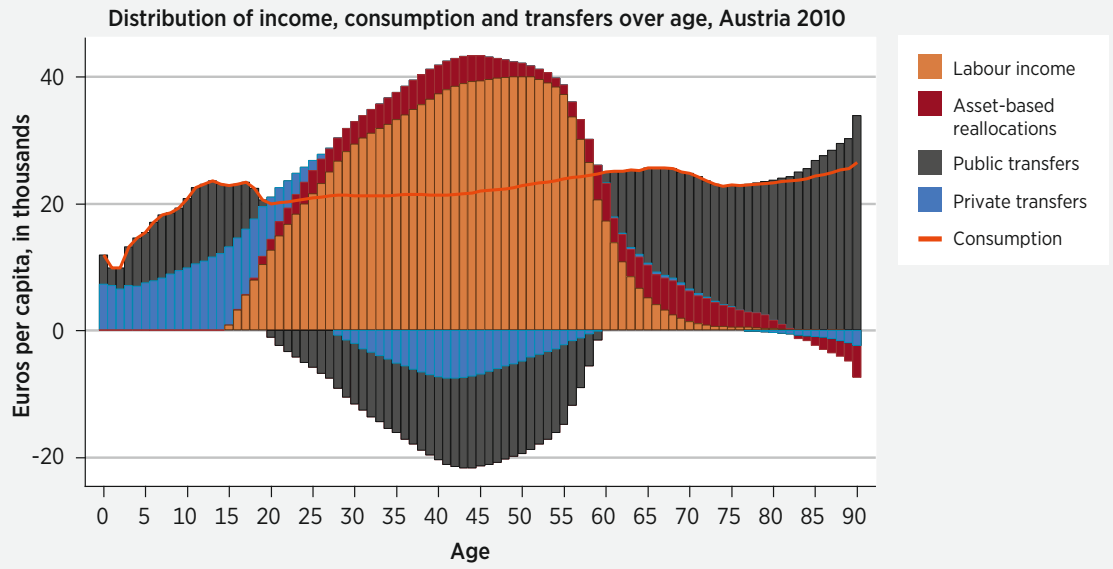
National Transfer Accounts

In all societies, **individuals experience periods when consumption is higher than labour income**, usually at young and old ages, while those of working age tend to consume less than the sum of their labour income (see Figure 15 for Austria). However, the length and extent of these periods of deficit and surplus **vary across societies** as they are shaped by institutional settings, the overall economic situation, and established norms, values and attitudes.

Consumption in childhood and old age is financed through government services and transfers, transfers through the family or asset-based reallocations. The extent of these various channels, together with demographic patterns and trends, will ultimately determine the impact of transfers on public finances. Based on the concept of National Transfer Accounts (NTA), the VID coordinated EU collaborative research project AGENTA (http://www.agenta-project.eu/) aims to explain the structure of taxes and public transfers and services in the European Union in light of demographic change as well as forecasting how these may develop in the future. The cross-country analysis using economic dependency ratios based on National Transfer Accounts data shows that only few countries (e.g. Sweden) have prepared their public transfer system for an ageing population, mainly by increasing retirement age and a better integration of women in the labour force. The design of public transfer systems in most countries is unsustainable given population ageing, most notably in those countries which face the strongest increases in the share of elderly.

Fig. 15: National Transfer Accounts for Austria



Source: own calculations

Key references

Hammer, B., A. Prskawetz and I. Freund. 2015. *Production Activities and Economic Dependency by Age and Gender in Europe: A Cross-Country Comparison*. The Journal of the Economics of Ageing 5: 86–97.

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Ageing and productivity

In **ageing societies**, where the composition and size of the work force changes, the question arises whether **productivity growth** and, more generally, economic growth **can be sustained**. In a set of research projects we investigated these questions **at the firm as well as at the macroeconomic level**. At the firm level we applied **matched employer-employee data** to estimate the relationship between the age structure of the workforce and productivity. At the aggregate level we based our studies on **panel data for the EU** on economic growth, workforce structure and various socio-economic and institutional covariates.

Overall our results **do not confirm the hypothesis of decreasing productivity** with higher ages of the workforce. In the case of labour productivity within a firm, our results indicate that firm-specific characteristics as well as the regional and sectoral context in which firms operate are important determinants of productivity.

Key references

Mahlberg, B., I. Freund, J. C. Cuaresma and A. Prskawetz. 2013. *Ageing, productivity and wages in Austria*. Labour Economics 22: 5–15.

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Social interactions and demographic behavior

Demography is the study of populations but populations consist of humans who are embedded in a social context. Therefore, **elevating demography from description to exploration requires an investigation of social effects**. Peers provide information that enlarges the set of alternatives, demonstrates the consequences of decisions and affects individual preferences by means of social influence effects and conformity pressures.

Agent-based models (ABMs) are computational models for **simulating the actions and interactions of agents**, allowing us to **include social interactions and social effects** in the individual decision making processes. ABMs are mostly used to explain **macro level patterns** as a result of **micro level decisions**.

Researchers at the Vienna Institute of Demography were among the first who **applied ABMs in demography** to investigate **fertility transitions**, **marriage and union formation**, the emergence of **social norms**, the influence of social effects on the **effectiveness of family policies** and the interplay of **changing gender roles and fertility**.

Key references

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Aparicio Diaz, B., T. Fent, A. Prskawetz, L. Bernardi. 2011. *Transition to parenthood: The role of social interaction and endogenous networks*. Demography 48(2): 559–579.

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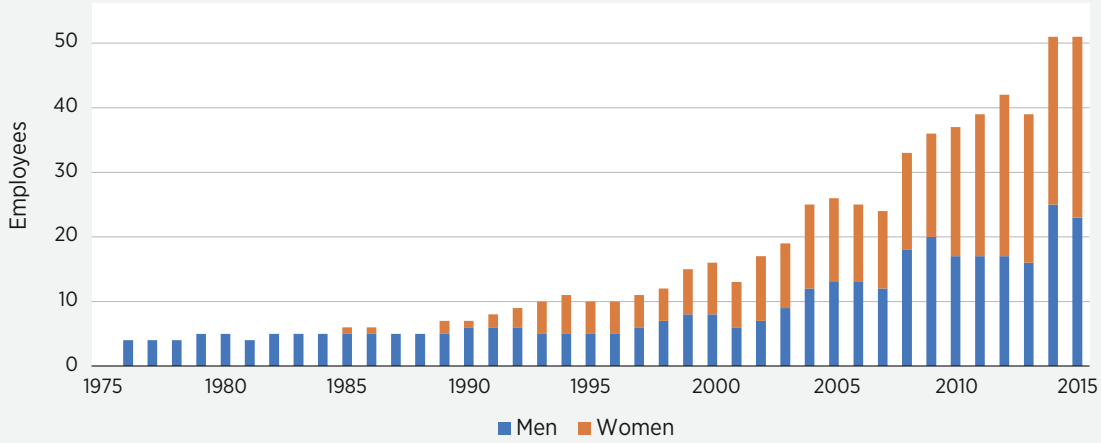
Staff

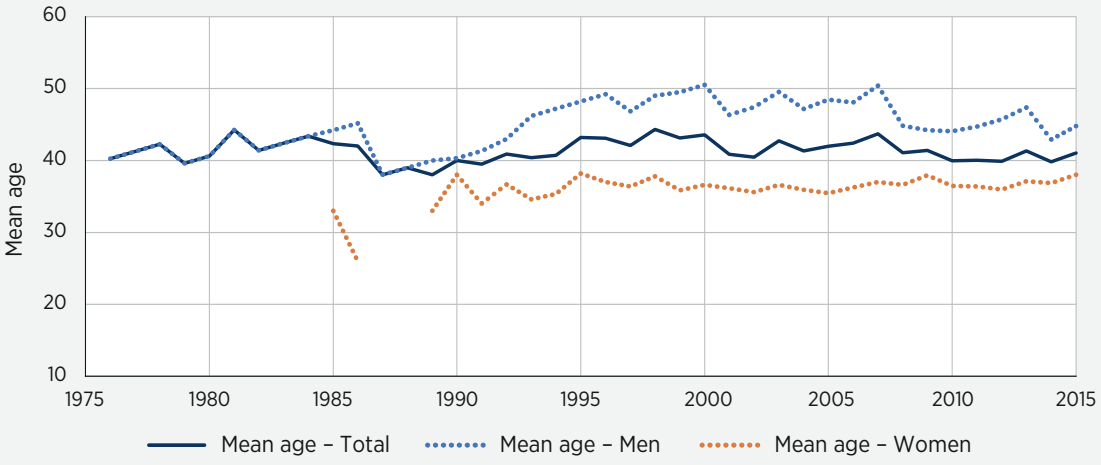
Fig. 16: Number of VID employees[1], 1975–2015



Source: VID Annual Reports/Akademis

The Institute started as a very small research entity but grew significantly after the turn of the millennium. While the VID was comprised of only men for several years, it soon moved to a more equal gender balance with female researchers now representing a majority.

Fig. 17: Mean age of VID employees by gender, 1975–2015

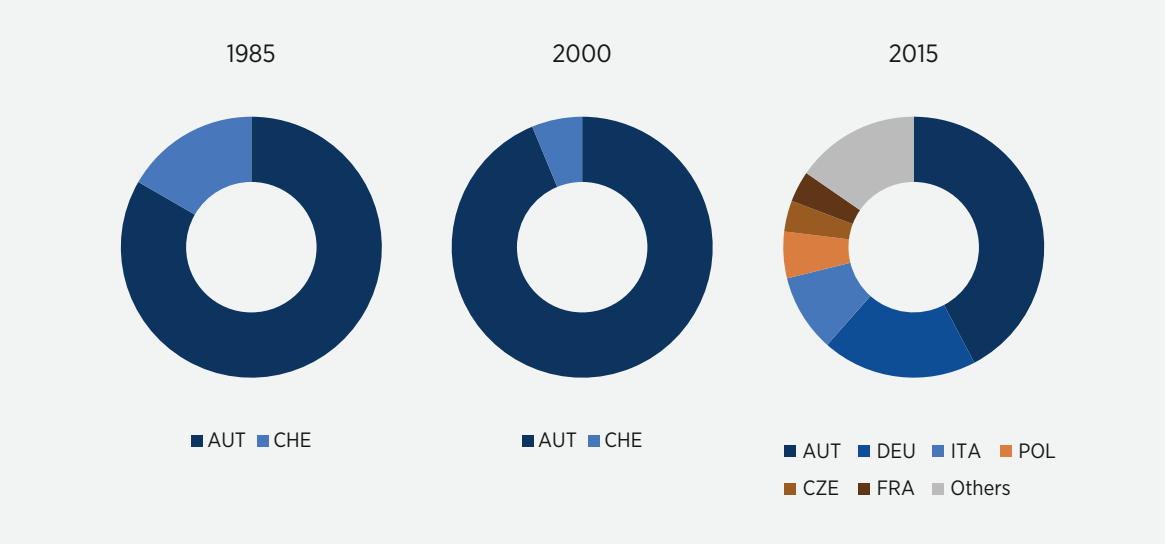


Source: VID Annual Reports/Akademis

With the exception of the initial phase, the mean age is rather stable and fluctuates around 40 years with female employees on average younger than their male counterparts.

[1] Includes regular scientific and administrative employees as well as (deputy) directors and research group leaders not directly employed at VID. Freelancers are not considered for this graphic.

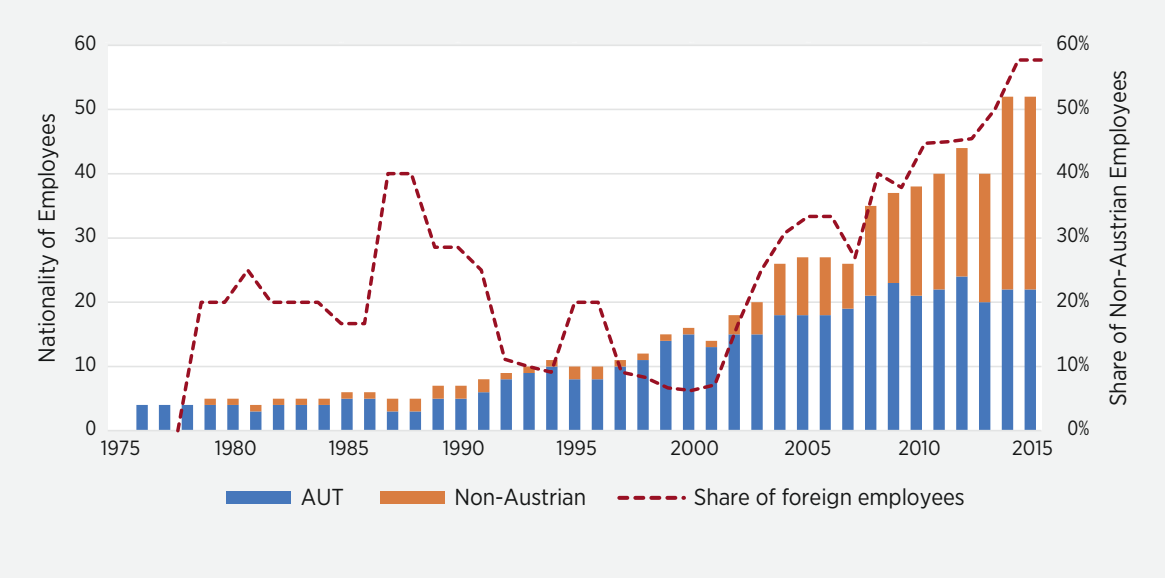
Fig. 18: Distribution of nationalities among VID staff, 1985, 2000 and 2015



Source: VID Annual Reports/Akademis

From the Institute's founding in 1975 until 2002, the number of nationalities fluctuated between one and three. From 2003 onwards the staff not only increased in size but also in terms of international diversity. This internationalisation is now at its peak in 2014 and 2015 with people of 14 different nationalities working at VID.

Fig. 19: Austrian and non-Austrian staff at VID, 1975–2015

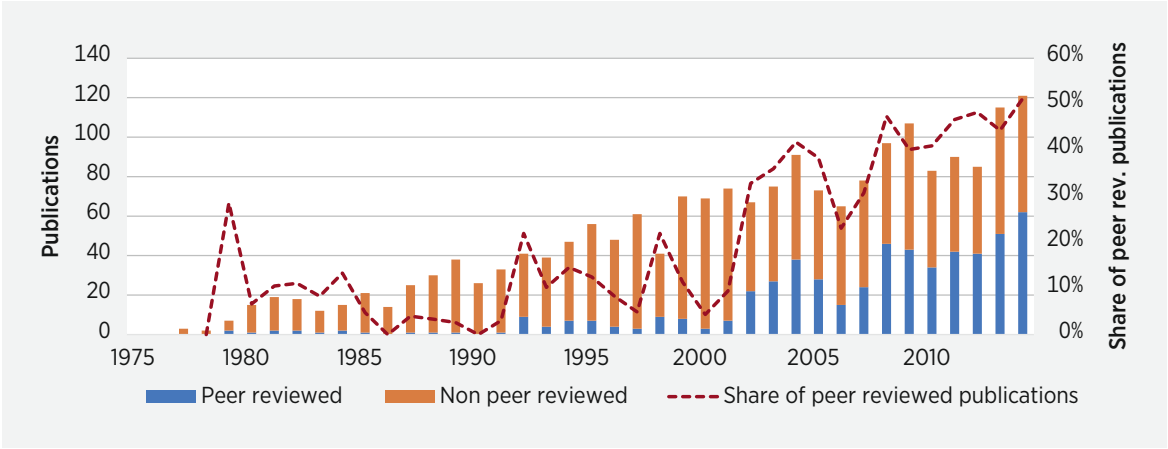


Source: VID Annual Reports/Akademis

While Austrians represented the majority of staff over the whole period, growing internationalisation has led to an increase in the share of other nationalities, with the share of non-Austrians reaching a high point in 2014 and 2015 at 58 %.

Publications

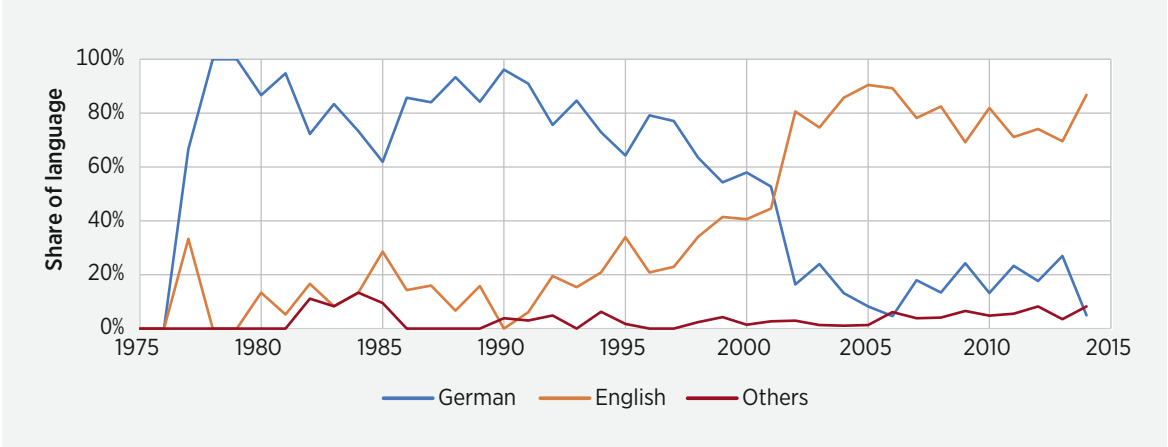
Fig. 20: VID publications, 1975–2014



Source: VID Annual Reports/Akademis

Not surprisingly, the number of publications at the VID has increased over the last decades as a growing number of researchers covered more topics. Although single years show a decrease of publications, the overall growth pattern is not affected. The first three publications were published in 1977 and the current annual publication record was reached in 2014 with 121. Over the last 40 years the VID has made vast contributions to the field of demography with a total of nearly 2,000 publications. While the share of peer-reviewed publications remained relatively low until the 1990s, more recent years show a significant increase for this indicator. In some years, almost 50% of all VID publications are peer-reviewed.

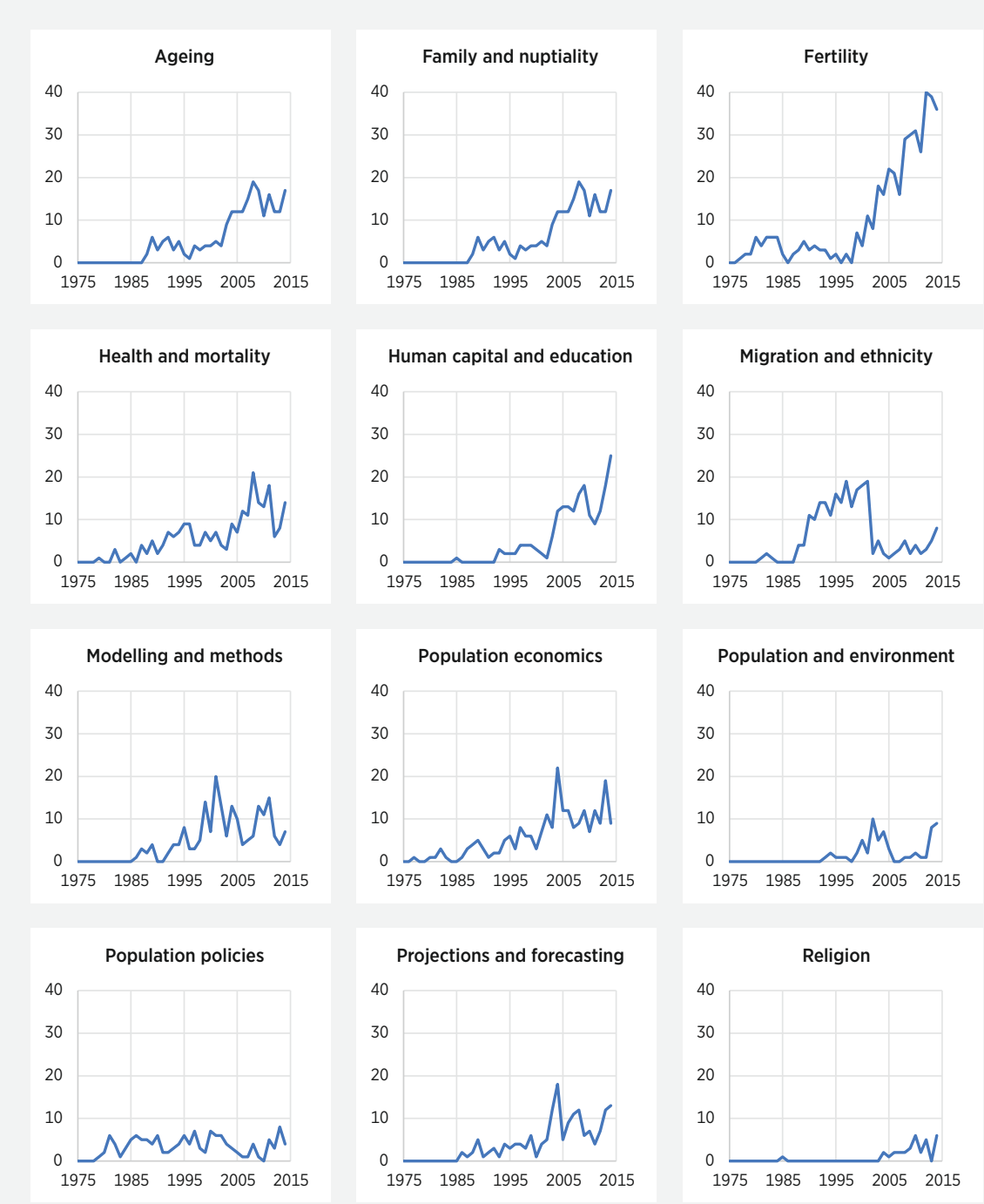
Fig. 21: Languages of VID publications, 1974–2014



Source: VID Annual Reports/Akademis

With the internationalisation of the VID there was also a tremendous change in the languages of the Institute's publications. Although English was already becoming increasingly important in the 1990s, German remained the main language of publications. In recent years, about 80% of all VID publications are in English, 15% in German and 5% in other languages such as Italian or Czech.

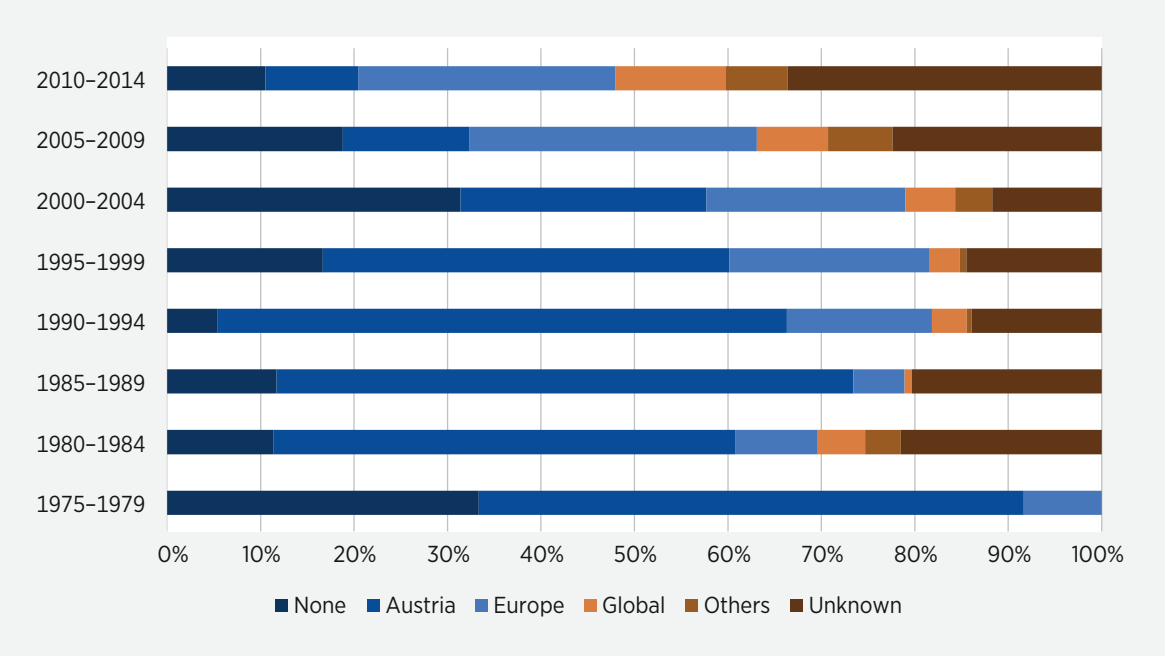
Fig. 22: VID publications by topic, 1975–2014



Source: VID Annual Reports/Akademis; Publications can cover more than one topic

Most of the topics covered at the VID show a steady increase of publications. In one respect this is due to the increasing number of staff, while it is also the case that the VID has had different emphases throughout the last 40 years. For instance, migration was a hot topic especially in the late 1980s and the early 1990s, while research on fertility has seen a steep increase in publications from the late 1990s until today. Other topics like population policies remained relatively stable while religion for instance has recently emerged as a topic of research interest.

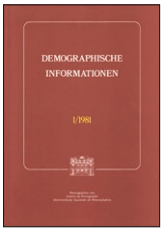
Fig. 23: Geographical scope of VID publications, 1975–2014



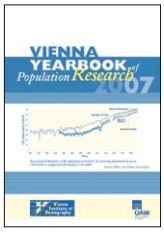
Source: VID Annual Reports/Akademis

Over the last decades the geographical scope has changed as well. In the early years, most publications focused solely on Austria. However, over time more and more publications looked at demographic topics from a European or even a global perspective. The share of publications with no geographical attributes varies greatly, as it has been at some points in time more popular to publish on models and demographic methods. Finally, publications that cover regions outside Europe have recently become more commonplace.

Past and current VID publication series



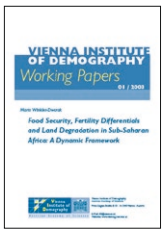
Demographic Informations (Demographische Informationen)
1981 – 2002



Vienna Yearbook of Population Research
2002 – today

VID Research Reports (Forschungsberichte)
1985 – today

VID Publication Series (Schriftenreihe des Instituts)
1977 – today



VID Working Papers
2002 – today

European Demographic Research Papers
2003 – today

Forward looking

The future research agenda of the VID

We can safely predict that interest in demographic topics will not diminish. It is very likely that interest in the implications of population ageing in a rapidly increasing number of countries and in shifts in the global distribution of populations in the face of climate change and other global mega challenges will continue to grow. In order to adequately address these issues we need to go beyond conventional demography with its almost exclusive focus on population size and age structure: The way forward involves explicitly addressing additional demographic dimensions such as health/disability, level of education/cognitive skills, labour force participation, place of residence and the interactions among these dimensions. Such multi-dimensional demographic approaches offer unique analytic capabilities and research tools for producing cutting edge research of the highest social and economic relevance.

The future research of the VID will continue to gain global significance through intensified collaboration with IIASA's World Population Program and WU's Demography Group in the context of the Wittgenstein Centre for Demography and Global Human Capital. Our joint research will address human capital formation through in-depth analyses of fertility, education and migration as well as unavoidable depletion through disability and mortality. We will continue our joint work on modelling population dynamics and ageing, on

building up a unique Global Human Capital Data Lab, on studying the economic consequences of education as well as population ageing and comprehensively addressing the complex interactions between population, development and the natural environment. Notwithstanding this close research collaboration, there is a division of labour among the three pillars of the Wittgenstein Centre. The VID will primarily focus on the challenges associated with global population ageing. IIASA will primarily focus on population and environment, and the WU will be our primary hub for university based research training. With some 60 scientists coming from all continents and working in the Vienna area, we hope to have the critical mass necessary to address these important challenges in a way that meets the highest academic standards and at the same time produces relevant insights for pathways towards sustainable development.

Wolfgang Lutz, Alexia Fürnkranz-Prskawetz and Richard Gisser

VID staff 2015

From left to right: Majid Koosheshi, Christian Wegner-Siegmundt, Bernhard Riederer, Alexia Fürnkranz-Prskawetz, Guy Abel, Wolfgang Lutz, Angela Wiedemann, Anne Goujon, Petra Schmutz, Zuzanna Brzozowska, Barbara Simunics, Catherine Bowen, Maria Rita Testa, Elke Loichinger, Natalie Nitsche, Markus Speringer, Inga Freund, Marc Luy, Gustav Feichtinger, Michael Kuhn, Bernhard Hammer, Bilal Barakat, Bernhard Rengs, Tomáš Sobotka, Sergei Scherbov, Kryštof Zeman, Thomas Fent, Dimiter Philipov, Danielle Belemsaga-Yugbare, Anna Matysiak, Isabella Buber-Ennser, Raya Muttarak, Lisa Janisch, Richard Gisser

Not in this picture: Ramon Bauer, Eva Beaujouan, Caroline Berghammer, Paola Di Giulio, Jakob Eder, Ivan Frankovic, Ina Jaschinski, Frank Kolesnik, Desiree Krivanek, Marija Mamolo, Ani Minassian, Michaela Potančoková, Werner Richter, Miguel Sánchez-Romero, Nikola Sander, Maria Winkler-Dworak, Marina Zannella

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References

A list of all scientific references mentioned in this booklet can be found online at www.oeaw.ac.at/vid.

40 years of the Vienna Institute of Demography 1975–2015

From an Austrian
to a European
to a Global Player