

Why the Novo Nordisk Foundation attracts talents to Scandinavia

Immigration of scientists and entrepreneurs and
international collaboration has a significant
impact in society on innovation



80th Annual Meeting of the Academy of Management

Thomas Alslev Christensen, Senior Vice President
Novo Nordisk Foundation
10 August 2020

Our vision

The Novo Nordisk Foundation's ***vision*** is to contribute significantly to research and development that improves the lives of people and the sustainability of society.

Our mission

- › To enable Novo Nordisk A/S and Novozymes A/S to create world-class business results and contribute to growth
- › To develop knowledge-based environments in which innovative and talented people can carry out research of the highest quality and translate discoveries into new treatments and solutions
- › To inspire and enable children and young people to learn

An independent
Danish foundation
with corporate
interests

novo
nordisk
fonden

Dividends

100% SHARES

novo
holdings

Investors in life science

Dividends

28.1% SHARES*
76.1% VOTES



25.5% SHARES*
72.0% VOTES



Grants

Grants awarded in 2019:
\$0.8 billion (€0.7 billion)

- Biomedical and health science research and applications
- Patient-centred and research based care
- Life science research and industrial applications promoting sustainability
- Natural and technical science research and interdisciplinarity
- Innovation
- Education & outreach
- Social, Humanitarian and Development aid

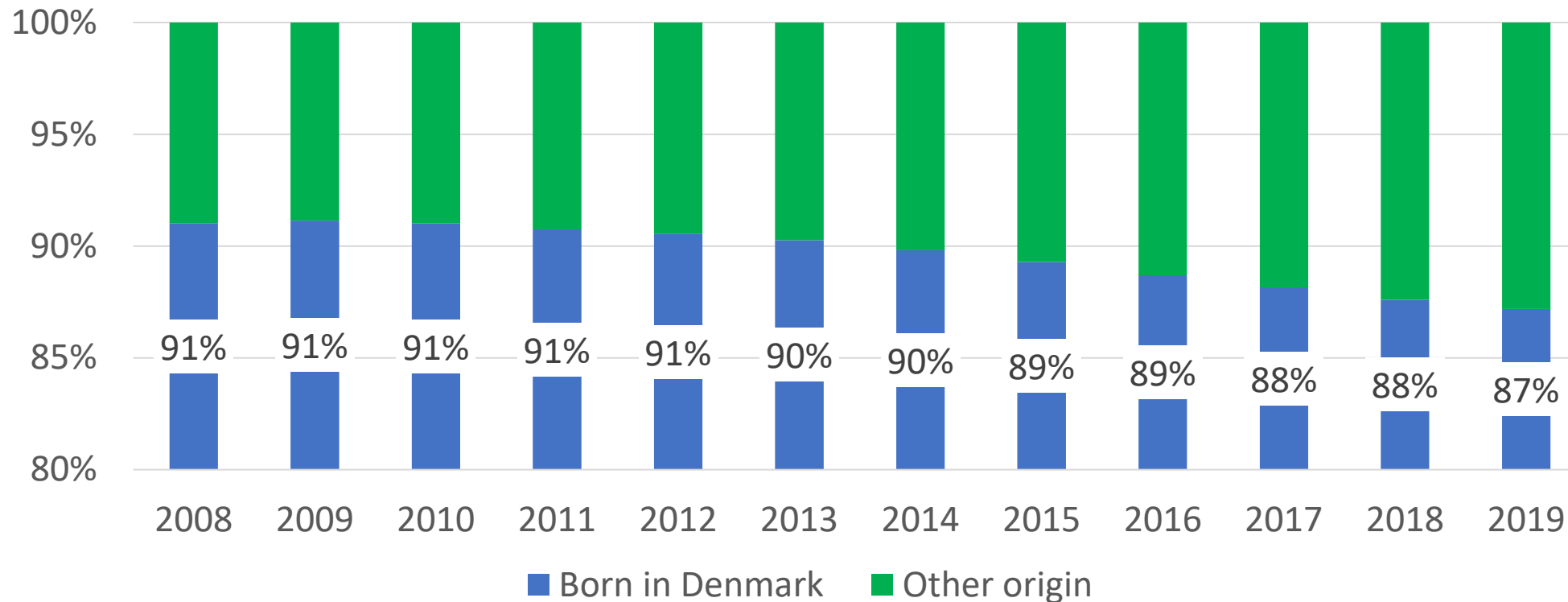
Investments in 130 companies

Investment result in 2019:
\$3.9 billion (€3.5 billion)

In 2019, the **foundation** had a net **worth** of \$60 billion (€53 billion), making it the largest financial endowment of any **foundation** in Denmark and one of the largest endowments in the world.

The challenge of Denmark: The aging population and scarcity of labour requires us to look abroad, especially for the very high skilled resources

Distribution of the Danish labour force born in versus outside Denmark



Source: Statistics Denmark

Positive economic effects from immigration of foreign researchers

Immigration programmes for scientists increase the net level of foreign researchers in Denmark by 200 excluding accompanying spouses:

- Lower probability of re-emigration
- High work participation rate
- Zero unemployment rate
- High labor productivity
- Employed in the public sector
- Identical across gender and origin

Economic forecast results using the Danish micro-based macroeconomic model (DREAM) by 2050:

- Population grows by 16,000 personer (82% will be immigrant and 18% descendants)
- Compared to baseline:
 - Employment grows 0.39%
 - GDP grows by 0.70%
 - Private investment grows by 0.32%
 - Private consumption grows 0.52%
 - Fiscal sustainability improves by 0.15%-points of GDP

Distribution of international co-authorship and citation impact across countries in NNF-funded journal articles => Higher citation impact with international scientists

Citation impact range	Share of publications with ...				
	International co-authors	Co-authors from SE	Co-authors from US	Co-authors from GB	Co-authors from DE
Top 1%	93%	48%	60%	55%	57%
Top 1%	85%	35%	58%	41%	34%
Top 1-10%	67%	18%	31%	20%	15%
Top 10-50%	55%	13%	19%	12%	9%
Lower 50%	44%	9%	14%	8%	5%
All journal articles from 2014-2018	57%	14%	22%	14%	11%

Source: NNF Publication database and own calculations using Digital Science Dimensions

Note: Citation impact based on relative citation ratio (RCR) from Dimensions

Innovation based on Foundation-funded research

- Investing in knowledge and society
- Research talent and knowledge creation
- Using knowledge in academic research
- Research-based innovation**
- Education, outreach and policy contribution
- Health and patient care
- Humanitarian aid



More than 8,000 research and innovation grants since 2000



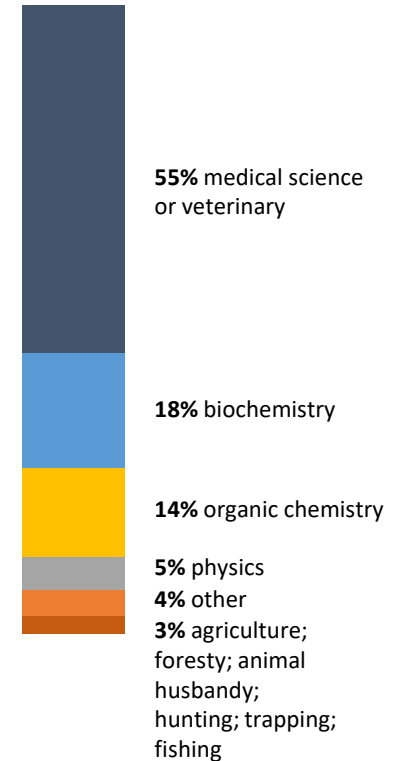
More than 20,000 Foundation-funded journal articles since 2000



18%

cited in patents 9 years after their publication

Technological classification



130 companies and 15 research and innovation programmes funding attracting of talent, research collaboration and/or research outside Denmark

- Committee on Endocrinology and Metabolism (Nordic)
- Committee on Biotechnology-based Synthesis and Production Research (Nordic)
- Committee on Youth Empowerment in Jordan (global)
- Exchange programmes for clinicians (Steno North-American fellowships)
- Humanitarian emergency aid (Global)
- Interdisciplinary Synergy Programme (Denmark with international collaboration)
- Laureate grants
- Mobility – Global Medicine and Health Research (Global)
- Novo Nordisk Foundation Symposia (Nordic)
- Novo Nordisk Prisen (European)
- Novozymes Prisen (European)
- Postdoc fellowship for research abroad – Bioscience and Basic Biomedicine
- Pre-seed and exploratory pre-seed programme (Nordic)
- Recruit – (attracting talent to Denmark)
- PhD programme for foreign students and Industrial PhD programme in enterprises
- Tandem programme - Committee on Clinical and Translational Medicine (Denmark with international collaboration)
- Visiting Scholar / Visiting Postdoc Fellowships at Stanford Bio-X (the US)
- Young Investigator



Conclusion

- Attraction of research talents via immigration has several positive effects:
 - The research base in Scandinavia increase
 - The productivity of labour goes up improving competitiveness
 - Increased skilled labour force increase GDP and income per capita
 - Increased research production promote
 - International research collaboration and research excellence
 - More innovation through increased patenting activities and scientific discoveries
 - More start-up companies
- The Novo Nordisk Foundation will as the wealthiest Foundation in the world (Anno 2019) step up its support to international research talents in the coming years to increase innovation and welfare for all people