novo holdings
Investors in life science

Årsrapport for 2018 for Novo Holdings A/S for perioden 1. januar til 31. december 2018

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ANNUAL REPORT 2018

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INTRODUCTION

Novo Holdings is a holding and investment company, wholly owned by the Novo Nordisk Foundation. Our objective is to meet the Novo Nordisk Foundation's strategic and commercial goals and, as such, we make investments with a view to long-term returns. Our reporting includes the long-term (five and ten year) investment performance of Life Science Investments and Financial Investments (together the 'Investment Portfolio').

Investment Returns 2018, 2017 and trailing 5 and 10 years

	2018 FY	2017 FY	Trailing 5 years	Trailing 10 years
Increase in dividend from Novo Group	3%	**-18%** (+18%)	-	-
Return on Life Science Investments	4%	24%	17%	18%
Return on Financial Investments	-3%	10%	7%	10%
Total return on the Investment Portfolio	1%	18%	12%	13%

Note:
All returns are in DKK and reflect total returns, excluding internal costs. Income from the Novo Group includes the dividends received from Novo Group companies, i.e. proceeds from participation in the Novo Group's share buy-back programmes are not reflected in the presented growth rates. Growth rates in the brackets for the 2017 dividends are adjusted for the interim dividend provided in 2016. Returns on Life Science Investments and the illiquid assets within Financial Investments are calculated on an Internal Rate of Return (IRR), based on the book value at the end of the measurement period and cash flows within the measurement period compared with the book value at the beginning of the measurement period. Returns on liquid assets within Financial Investments are based on Total Weighted Return (TWR).

As a leading global life science investor, Novo Holdings aims to deliver long-term competitive returns and we benchmark our performance to relevant indices, as for example the MSCI World and MSCI World Health Care indices.

Comparing the performance of Novo Holdings to relevant indices over the last five to ten years, it is our assessment that we have delivered competitive returns on our Life Science Investments and Financial Investments.

INCOME AND INVESTMENT RESULTS

The Income and Investment Result in 2018 amounted to DKK 11.5bn, versus a record high result of DKK 20.7bn in 2017. The result was largely driven by increased income from the Novo Group in 2018 versus 2017 and by the returns from the Investment Portfolio, though at a lower level than realised in 2017.

The Novo Group companies continued to increase profits in 2018 and income from the Novo Group was in line with expectations at DKK 10.6bn, representing an increase of 77% over 2017. The increase in income compared to 2017 is primarily due to Novo Holdings' participation in the Novo Nordisk share buy-back programme in 2018.

In 2018, Return on Life Science Investments was favorably impacted by the resilience of the life sciences sector, as we realised a slightly positive result in a generally challenged capital market, especially towards the end of the year. The Return on Life Science Investments in 2018 reached DKK 2.2bn, compared to DKK 10.9bn in 2017. The five and ten year trailing return, of Life Science Investments stood at 17% and 18%, respectively, by end 2018.

The Financial Investment Area realised a return of DKK -1.3bn in 2018 versus DKK 3.8bn in 2017, impacted by the negative developments in the capital market during 2018, especially towards the end of the year. Our Asian markets investments were particularly challenged during 2018. The five and ten year trailing return of the Financial Investment Area stood at 7% and 10%, respectively, by end 2018.

We generally invest with a long-term horizon. Year-on-year market fluctuations, both positive and negative, can give a distorted view of the long-term development of the investment performance. We therefore focus on five to ten year returns, which stand at 12% and 13%, respectively, for Novo Holdings. We consider this to be a satisfactory performance.

Income and Investment Results of Novo Holdings 2018 and 2017

DKK billion	2018	2017
Income from the Novo Group	10.6	6.0
Return on Life Science Investments	2.2	10.9
Return on Financial Investments	-1.3	3.8
Income and Investment Results	**11.5**	**20.7**

Note:
Income from the Novo Group includes dividend and direct income related to the sale of shares in Novo Group companies, whereas the returns from Life Science Investments and Financial Investments (together 'the Investment Portfolio') represent realised and unrealised gains and losses on these investments. NNIT A/S is no longer classified as a Novo Group company and has been transfered to Financial Investment in 2018.

II

TOTAL ASSETS

At the end of 2018, our investment assets totaled DKK 331bn, of which the value of our Investment Portfolio (Life Science Investments and Financial Investments) accounted for DKK 104bn, corresponding to 31% of the assets.

In 2018, the value of our holdings in Novo Nordisk and Novozymes decreased by 13% and 20%, respectively, which is largely due to the share price of both companies contracting during 2018. The combined value of the Novo Group companies decreased by 14% to DKK 227bn, down from DKK 263bn by end 2017. As announced in January 2014, Novo Holdings has informed Novo Nordisk that it intends to consider its participation in the Novo Nordisk share repurchase programme on a case-by-case basis. In 2018, we participated in the Novo Nordisk share buy-back programme, and as part of this programme, we sold 14,025,000 B shares, yielding DKK 4.2bn. At the end of 2018, we held 537,436,000 A shares and 149,789,000 B shares, equivalent to 28.1% of the share capital and 75.8% of the votes in Novo Nordisk. For 2019, Novo Holdings has informed Novo Nordisk that it plans to participate in its share repurchase programme. Novo Holdings currently intends to maintain its ownership of the Novo Nordisk share capital at around 28%.

Of the current ownership, 25.5% represents the minimum historical ownership level, whereas the additional 2.6% is held as part of the liquidity reserve of Novo Holdings. In future, we might consider reducing our holding in Novo Nordisk B shares. Over time this could bring our ownership toward the minimum historical ownership level of 25.5%.

As part of Novozymes' share buy-back programme, we sold 2,040,000 B shares, yielding DKK 0.6bn. At the end of 2018, we held 53,743,600 A shares and 21,991,400 B shares, equivalent to 25.5% of the share capital and 71.2% of the votes in Novozymes.

The value of the Investment Portfolio increased during 2018 to a record high DKK 104bn, up from DKK 95bn in 2017. This was primarily driven by inflow of capital from the Novo Group companies in the form of dividend and from participation in the share buy-back programme of both companies. A positive contribution was also made by Life Science Investments. This is countered by the negative result realised by Financial Investments, as well as investment costs and cash outflow in support of the grant-giving activities of the Novo Nordisk Foundation.

In 2018, Novo Holdings paid a DKK 1.6bn dividend to the Novo Nordisk Foundation, which in accordance with its statutes, provides grants to support scientific, humanitarian and social purposes.

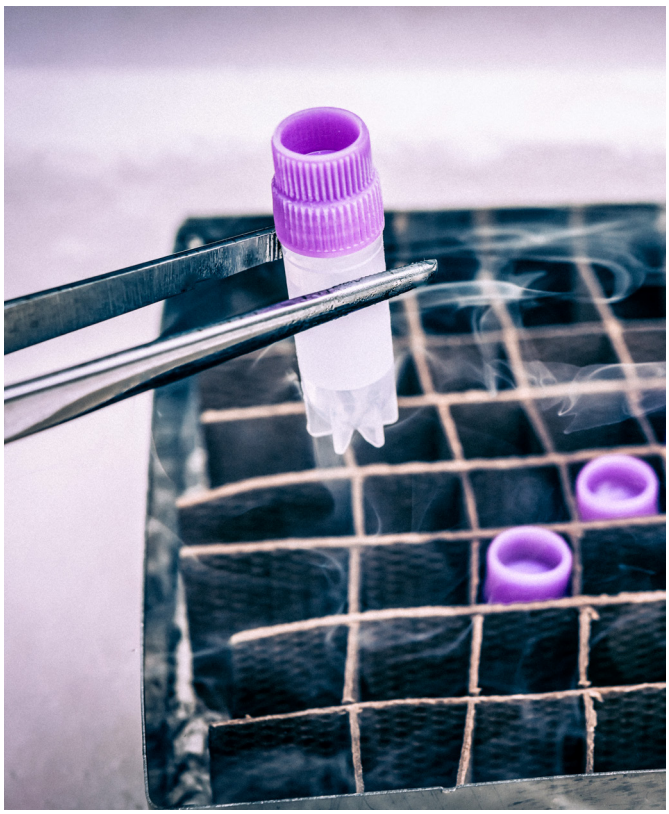
Total Investment Assets 2018 and 2017

DKK billion	2018	2017
Novo Group	227	263
Life Science Investments	58	56
Financial Investments	46	40
Total Holdings and Investment Assets	**331**	**359**

Note:
Novo Holdings' investment in Novo Nordisk and Novozymes A and B shares in the above table are valued using the quoted B share price at closing on 31 December 2018. The value of our holding of NNIT is moved from the Novo Group to Financial Investments in 2018. By end 2018, Financial Investments Area includes DKK 12.2bn, which are managed on behalf of the Novo Nordisk Foundation.

LIFE SCIENCE INVESTMENTS PORTFOLIO

We divide our Life Science Investments into three distinct investment areas: Principal Investments, which generally invests in cash flow positive or growth enterprises, Novo Ventures, which focuses on venture investments primarily in the US and in Europe, and Novo Seeds, which focuses on early start-ups in the Nordic Region and the rest of Europe. By the end of 2018, Novo Holdings had DKK 58.3bn allocated to investments in life science.



Total Life Science Investments portfolio value 2018 and 2017

DKK billion	2018	2017
Principal Investments	51.0	50.9
Novo Ventures	6.5	4.4
Novo Seeds	0.8	0.4
Total Life Science Investments	**58.3**	**55.8**

III A

PRINCIPAL INVESTMENTS

Since 2013, more of our investments have been directed towards well-established, dividend yielding and cash flow positive companies. These investments are made in publicly listed as well as privately owned companies, with a mix of minority and majority positions.

We invested less in life sciences companies during 2018 as compared to 2017, as in many instances we found valuations of the potential investments to be challenging. In September 2018, we announced the investment in the Sweden-based privately owned Envirotainer, a leading provider of temperature-controlled airfreight solutions for the pharmaceutical supply chain. In addition to this investment, Principal Investments made follow-on investments in some of our portfolio investments and private equity partners. In total, Principal Investments deployed capital of DKK 2.1bn during 2018 versus DKK 12.0bn during 2017.

At end 2018, the Principal Investments portfolio comprised 13 companies of which eleven are located in Europe and two in the US. The portfolio consists of majority positions in Sonion and Xellia, both headquartered in Denmark, and minority positions in Chr. Hansen, Symphogen, SYNLAB, Orexo, Veloxis, BTG, ConvaTec, Evotec, Envirotainer (all European) and ERT and Inogen (both American).

In 2018, realised and unrealised gains related to Principal Investments reached DKK 2.0bn, which is a lower gain compared to the record high gain of DKK 9.9bn achieved in 2017. Returns in 2018 were positively impacted by the development in the share prices of Veloxis, Inogen and Evotec combined with higher valuations of some of the privately held investments and countered by a decrease in the value of ConvaTec.

Principal Investments' portfolio value, investments, proceeds and gains/losses 2018 and 2017

DKK billion	2018	2017
Value of portfolio at end year	51.0	50.9
Investments during the year	2.1	12.0
Cash proceeds during the year	4.1	2.5
Realised and unrealised gains/losses during the year	1.8	9.9

III B

NOVO VENTURES

Novo Ventures was established in Denmark in 2000 and operates out of offices in Copenhagen, San Francisco and Boston with an expanding focus spanning biotech, medtech and health care IT.

During 2018, Novo Ventures added seven new public and sixteen new private investments to its portfolio and invested a record DKK 3.0bn.

Of the DKK 3.0bn invested, DKK 2.5bn was invested in the US and DKK 0.5bn in Europe. DKK 1.7bn was invested in new companies and DKK 1.3bn in follow-on investments in existing portfolio companies.

As of year-end 2018, the Novo Ventures portfolio consisted of sixty-six companies, of which forty-nine are in the US and valued at DKK 6.5bn, the highest value ever of our Novo Ventures investments. The proportion of private companies in the portfolio increased from 58% in 2017 to 64% in 2018, based on the value of the portfolio.

It is the intention of Novo Holdings to continue to allocate significant resources to the private and public venture markets in the US and Europe.

Novo Ventures' portfolio value, investments, proceeds and gains/losses 2018 and 2017

DKK billion	2018	2017
Value of portfolio at end year	6.5	4.4
Investments during the year	3.0	1.7
Cash proceeds during the year	1.2	4.1
Realised and unrealised gains/losses during the year	0.3	1.0

III C

NOVO SEEDS

Novo Seeds has established itself as the leading investor focused on company creation in the Nordics. Novo Seeds builds biotech start-ups through a combination of pre-seed grants awarded on behalf of the Novo Nordisk Foundation and invests in early stage pre-proof-of-concept biotech and medtech companies throughout Europe. In addition, Novo Seeds invests as an LP in venture funds with strategic impact in the Nordics.

The year 2018 was very productive for Novo Seeds, with six new investments and two portfolio companies closing major financing rounds. Furthermore, Novo Seeds successfully launched the DKK 1bn REPAIR Impact Fund. REPAIR invests in companies discovering and developing early-stage therapies to combat antimicrobial resistance. Our long-term investment horizon positions us well to help address this significant unmet medical need. REPAIR completed four investments supporting development of highly novel antimicrobial therapies.

At the end of the year, the total book value of Novo Seeds biotech investments amounted DKK 678mn and consisted of twenty-two active portfolio companies. Realised and unrealised gains from these entities alone was DKK 678mn (DKK 424mn in 2017).

It is the intention of Novo Holdings to continue to allocate significant resources towards building the Nordic biotech industry in the coming years.

Novo Seeds portfolio value, investments, proceeds and gains/losses 2018 and 2017

DKK million	2018	2017
Value of portfolio at end year	796	438
Investments during the year	426	175
Cash proceeds during the year	-	9
Realised and unrealised gains/losses during the year	-64	-19

IV

FINANCIAL INVESTMENTS

A key part of our strategy is to maintain diversification in our portfolio by investing in non-health care assets, as managed by Financial Investments. These investments are to a large extent liquid, which is important for financing the grant-giving activities of the Novo Nordisk Foundation and for allowing us to potentially support Novo Nordisk and Novozymes.

Financial Investments delivered a return of -3% compared to the strong performance in 2017 of 10%. At end 2018, liquid investments constituted 93% of the portfolio. This liquid part of the portfolio has delivered a return of approximately DKK 18.5bn since its inception in 2005 and has an attractive return (measured as TWR) of 7% and 10% measured over a five and ten year trailing period, respectively.

At end 2018, the value of Financial Investments (including the DKK 12.2bn managed for the Novo Nordisk Foundation) was DKK 46.1bn and was positively impacted by the inflow of capital from the Novo Group companies. The liquid part of the Financial Investments portfolio was allocated with 64% in equities, 24% in bonds and 12% in credit investments.

Since equities comprise the bulk of the portfolio, the return of Financial Investments is closely linked to the performance of the global equity markets, which generally witnessed challenges in 2018, and on a global basis contracted compared to 2017. In addition to this, the returns on Financial Investments was negatively impacted by a relatively high exposure to the Asian markets and the negative development of the share price in FLSmidth & Co.

Financial Investments portfolio value and gains/losses 2018 and 2017

DKK billion	2018	2017
Value of portfolio at end year	46.1	40.0
Realised and unrealised gains/losses during the year	-1.3	3.8

V

STRATEGY

Our strategy is guided by the mission and vision of the Novo Nordisk Foundation.

We will continue to be a strong owner of the companies in the Novo Group and will invest our capital in the life sciences sector to optimise value creation and to support development in the industry in general. We target returns that allow us to deliver an income to the Novo Nordisk Foundation and grow our investment portfolio.

Due to our experience and expertise, we are well positioned to play an active role in the life sciences sector. We invest across the entire spectrum of life science companies, from early seed investments through to venture investments, growth equity and investments in large, established companies. We have a flexible investment approach, enabling us to take minority and majority ownership stakes in both private and public companies.

We continuously strive to enhance our position as a leading life science investor. We will continue to focus on and increase our investments in the life sciences sector in the US and Europe and build a leading team to support this strategy.

We will maintain an adequate liquidity reserve, which we will continue to allocate to investments in global equity and fixed income securities.



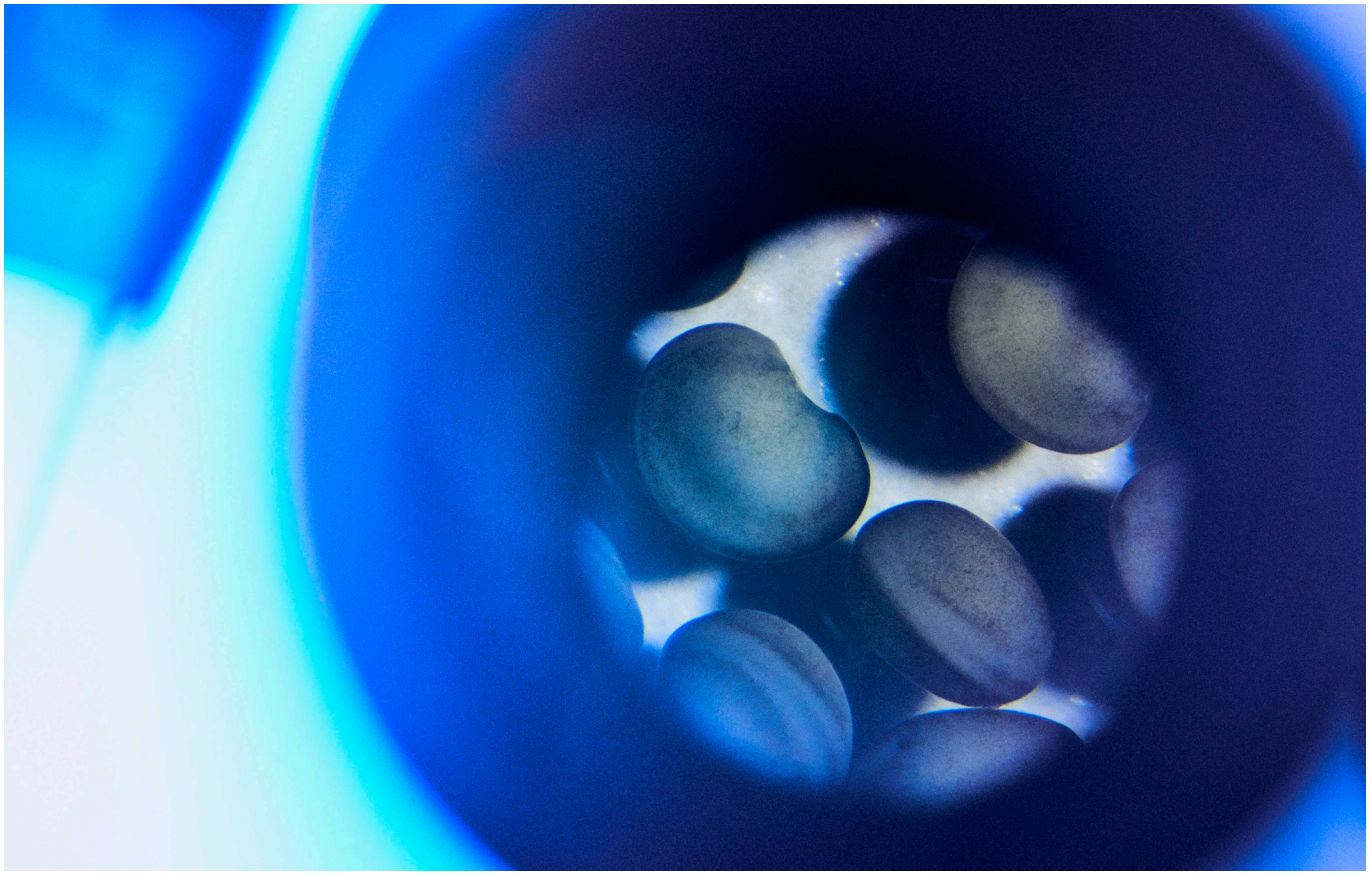
VI

GOVERNANCE

We value engaged ownership and aim to have board representation in the companies we invest in, thereby contributing to the major strategic initiatives of our portfolio companies. We take an active interest in the composition of the board and the executive leadership team. We monitor performance and we keep in continuous dialogue with our portfolio companies. However, when it comes to daily management and operations, we rely on and entrust the management and board of the respective companies.

In 2016, the Board decided to set out the target that by 2020 the Board will count at least one female member. In 2018, we welcomed Viviane Monges to the Novo Holdings Board.

We refer to the annual report of the Novo Nordisk Foundation where the statutory requirements under the Danish Financial Statements Act §99b are disclosed: novonordiskfonden.dk/wp-content/uploads/nnf_aarsrapport_a4_web_final_2018-3.pdf



VII

CORPORATE SOCIAL RESPONSIBILITY



Corporate Social Responsibility is integral to the values of Novo Holdings as a wholly owned subsidiary of the Novo Nordisk Foundation.

The vision of the Novo Nordisk Foundation is to contribute significantly to research and development that improves the health and welfare of people. In 2018, the Foundation awarded grants amounting to DKK 3.9bn for scientific, humanitarian and social purposes.

The mission of Novo Holdings is to enable and make a positive and meaningful impact on health, science and society by:

- generating attractive long-term returns on the wealth of the Novo Nordisk Foundation;
- being a life science focused investor and supporting the application of science by investing in seed, venture and late-stage companies

Novo Group companies must strive to make sure that their products and services make a significant difference in improving how people live and work. It also includes a commitment to continuously improve financial, environmental and social performance.

In 2018, Novo Holdings revised its Responsible Investment approach to reflecting an increasing focus on Corporate Social Responsibility.

We refer to the Corporate Social Responsibility policies of the Novo Nordisk Foundation where the statutory requirements under the Danish Financial Statements Act §99a are disclosed: issuu.com/nnfoundation/docs/nnf_-_koncernen_og_samfundet_2018

Impact of investment activities on society

The impact of Novo Holdings on society depends on how well it manages its financial resources. The aim is to leave a positive footprint on society. Novo Holdings does this by ensuring an attractive return on investment to support the Novo Nordisk Foundation's grant giving activities.

In 2018, the Novo Nordisk Foundation awarded DKK 3.9bn through 463 grants. The Novo Nordisk Foundation prepares an Annual Report assessing its impact on society.

For more insights on this please visit impact.novonordiskfonden.dk

In 2018, Novo Holdings invested DKK 5.5bn in life science companies.

The Novo Group paid corporate tax of DKK 7.5bn in Denmark in 2018.

Ambition and guiding principles

Our ambition is to be "recognised by our stakeholders as an exceptional enterprise that delivers outstanding results". To reach our ambition, we have formulated a set of guiding principles and values, based on our mission.

Our guiding principles include:

- We are a value driven company, striving for 'High Performance with High Responsibility'.
- We set a clear and ambitious strategy, which is returns driven, focused on life science

and sector leadership and with Financial Investments as an important pillar for diversification and liquidity.

- We deliver operational excellence through an industry leading team, quality investment processes and world-class internal processes and reporting.

Brand and employees
The main non-financial operational asset of Novo Holdings is our brand and our people. We strive to be a well-respected company and a responsible and attractive employer. All employees are expected to help to build the Novo Holdings brand by upholding and promoting its values and culture.

Diversity and inclusion
Novo Holdings employed 68 employees by end 2018, representing 11 nationalities, with 31% of our employees being female.

In 2018, we took further steps to promote diversity and inclusion in Novo Holdings by updating our recruitment guidelines and launching new initiatives to enhance our internal processes in this area.

Impact of investments on human rights and the environment
For information on the impact of investments on human rights and the environment, see the Corporate Social Responsibility Reports of the respective Novo Group companies.



VIII

KNOWLEDGE RESOURCES

Novo Holdings' most critical capability is our high level expert team, particularly specialised in the areas of life science and investments.

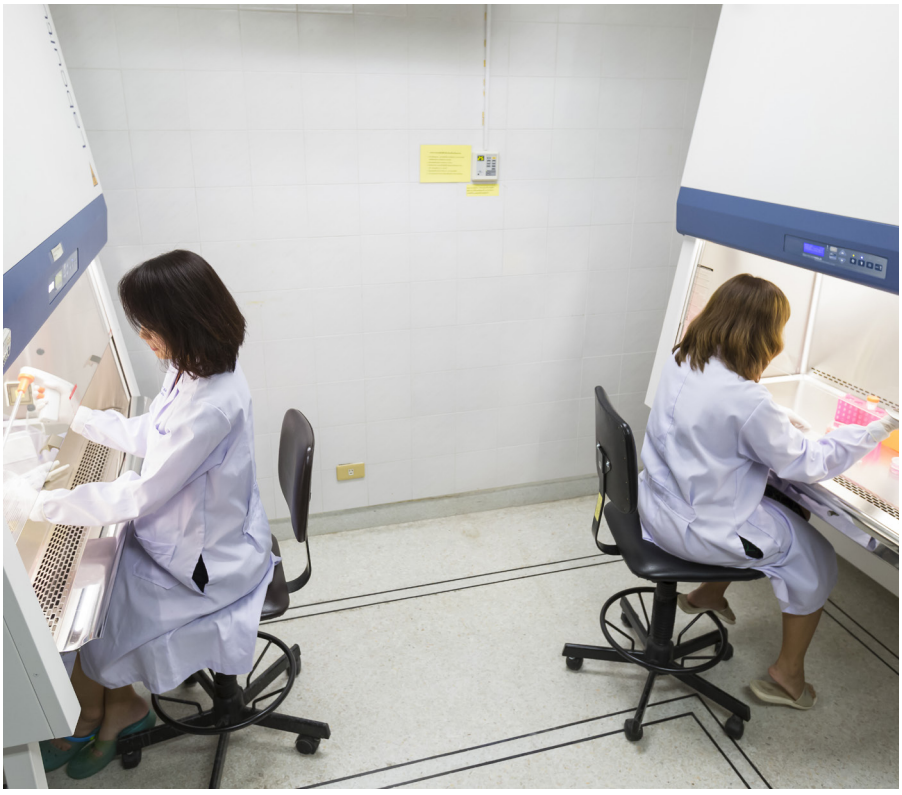
For this reason, we focus on attracting and retaining the appropriate talent by offering an attractive employer value proposition.

- Attraction: We endeavour to attract the best talents within life science and investments, which also impacts our team composition. By end 2018, of the 77 people employed 43% have an educational background in science and 35% in finance. Almost 90% have an educational level of MSc or higher, including 50% with a PhD or MBA background. Novo Holdings welcomed 17 new colleagues in 2018.

- Retention: We aim to offer an attractive employer value proposition with a competitive compensation package and opportunities for continuous development and career advancement. In 2018, we initiated the 'Novo Academy' programme, a training initiative linked to position level and our career track.

Novo Holdings professionals strive to deliver high performance with high responsibility, where what we do and how we do it go hand in hand.

In addition to the Board of Directors, Novo Holdings has an advisory group of external life science professionals (the Novo Advisory Group), who provide Novo Holdings with feedback and advice on life science investment projects.



IX

BUSINESS AND FINANCIAL RISKS

Our greatest risks are related to the business risks of Novo Nordisk and Novozymes, which vary in step with the different activities of the two subsidiaries.

There are inherent risks associated with investing in Novo Nordisk. An enterprise risk management process is in place at Novo Nordisk to identify critical risks and mitigate potential adverse impacts and protect value creation. Risks, where some are inherent in the pharmaceutical industry, that have an impact on the company's performance may materialize such as delays or failure of products in the pipeline, supply disruptions, competition and market developments, compromises to product quality and safety, information technology security breaches, currency impact and tax disputes, breach of legislation or ethical standards, and loss of intellectual property rights.

The management in Novo Nordisk reviews the most significant risks on a quarterly basis and this includes risks that could have significant disruption to the business. A successful development, approval and launch of semaglutide as a once-daily GLP-1 tablet treatment for adults with type 2 diabetes is important for future sales growth in Novo Nordisk. In 2018, a critical milestone was reached with the successful completion of the phase 3a PIONEER trial programme. Further to this, and important for future growth, Ozempic® (the once-weekly injection-based version of semaglutide) was launched in the US, Canada and the first European markets in 2018. Still important are the risks associated with the access and affordability for patients, and the political and administrative measures from governments that materializes in a requirement for lower drug prices.

Novozymes is exposed to a range of risks throughout the value chain and has implemented measures to mitigate these. Based on risk analysis, Novozymes has identified five key risks that may impact the company: competition and market consolidation; volatility of agriculture-related business; cyberattacks; disruption of the BioAg Alliance; and global political and economic instability. To mitigate the risk of competition and market consolidation, Novozymes continuously competes with other enzyme manufacturers through enhanced go-to-market strategies and tactics.

To address the risk of volatility of agricultural and economic instability, Novozymes also continuously invests in R&D to develop even better enzyme solutions for improving yield and profitability. To address the risk for cyberattacks, new security initiatives have been implemented in 2018; and Novozymes will continue their efforts to mitigate cyber risks through an updated security strategy, strengthened IT enterprise architecture, and stronger focus on IT governance.

Disruption of the BioAg Alliance is still high on the agenda, and the management prioritises and follows developments closely to achieve the best collaboration model for the future. To mitigate the key risk related to global political and economic instability, the management of Novozymes closely monitors political developments as well as macroeconomic and microeconomic indications to enable a quick response to any adverse developments.

For more information about Novo Nordisk and Novozymes and their approach to risk management, please consult the Annual Reports of the companies.

Moreover, Novo Holdings' Investment Portfolio is significantly weighted toward the life sciences industry. Whereas the industry is considered broad with several subsectors, including biotech, medtech, pharma, healthcare IT, bioindustrials, etc., Novo Holdings is especially exposed to the particular risks related to the life science sector.

Based on several risk measures and tolerance levels decided by the Novo Nordisk Foundation, Novo Holdings continued to develop its financial risk framework during 2018. We measure and focus upon shortfall risk for growth in grant pay-outs, portfolio volatility, idiosyncratic risk, access to liquidity as well as diversification of the Investment Portfolio. In Novo Holdings, we adhere to this risk framework, as we plan and execute our investment strategy.

More specifically, we allocate the capital to reflect that i) the Novo Nordisk Foundation should generally be able to increase its grants by at least the growth in nominal GDP, ii) a maximum loss on the investment portfolio, excluding Novo Nordisk, Novozymes and NNIT, in exceptionally negative market conditions is defined, iii) no single investment should represent more than a certain percentage of the investment portfolio, iv) the Novo Nordisk Foundation should at any time be able to liquidate assets without incurring losses from forced disposals, at a value corresponding to the actual commitment and the expected five-year grant pay-out obligations plus an additional buffer, and v) of the investment portfolio, the Financial Investments should at any given time represent a certain minimum of the total portfolio.

Novo Holdings is adaptive and has a range of strategic levers available for meeting these risk objectives.

X

THE FUTURE

Novo Holdings' financial prospects are partly dependent on the results of Novo Nordisk and Novozymes. For further information on the outlook for 2018 for these two companies, please consult their Annual Reports.

At their Annual General Meetings, Novo Nordisk and Novozymes approved dividends for 2018 of DKK 8.15 per share and DKK 5.00, respectively. Consequently, Novo Holdings expects to receive DKK 3.9bn in March 2019. In August 2019, we also expect to receive additional interim dividends from Novo Nordisk. Further hereto, we plan to participate in the share repurchase programme of Novo Nordisk and Novozymes, which we anticipate will generate additional income.

In addition to the income from the Novo Group companies, the result of Novo Holdings relies on the investment returns from our Investment Portfolio. As directed by our strategy, the Investment Portfolio is largely allocated and exposed to the life sciences sector.

Although pricing and healthcare reforms are adding pressures on the life sciences industry, we believe that the underlying long-term trends will continue to be positive. Positive developments in the Life Science Investments portfolio, combined with several solid exits and public offerings in recent years, provide the basis for our continued optimism. In support of this, we will also continue to expand and consolidate our investment areas and invest further in our operational structure.



Five year summary

DKK million	2018	2017	2016	2015	2014
Income from Novo Group companies	10,564	6,033	7,142	4,271	3,666
Investment return	858	14,671	1,225	11,487	9,864
Operating profit	11,015	20,285	8,155	15,375	13,460
Net profit for the year	11,993	19,148	7,121	14,848	13,460
Proposed dividend	5,800	1,600	13	3,008	4,715
Equity	96,590	86,197	67,062	62,949	52,816
Total assets	109,948	100,874	80,971	74,390	54,630
Financial ratios					
Equity ratio	88%	86%	83%	85%	97%
Employees	68	51	41	34	30

XI

MANAGEMENT'S STATEMENT

The Executive Management and Board of Directors have today considered and adopted the Annual Report of Novo Holdings for the financial year 1 January – 31 December 2018.

The Annual Report is prepared in accordance with International Financial Reporting Standards as adopted by the EU and further requirements in the Danish Financial Statements Act.

In our opinion, the Financial Statements give a true and fair view of the financial position at 31 December 2018 of the Company and of the results of the Company operations and cash flows for 2018.

In our opinion, Management's Review includes a true and fair account of the development in the operations and financial circumstances of the Company, of the results for the year and of the financial position of the Company as well as a description of the most significant risks and elements of uncertainty facing the Company.

We recommend that the Annual Report be adopted at the Annual General Meeting.

Hellerup, 14 March 2019

Executive Management

Kasim Kutay
CEO

Peter Haahr
CFO

Board of Directors

Lars Rebien Sørensen
Chairman

Steen Riisgaard
Vice Chairman

Jean-Luc Butel

Jeppe Christiansen

Viviane Monges

Francis Cuss

XII

To the Shareholder of Novo Holdings

INDEPENDENT AUDITOR'S REPORT

Opinion

In our opinion, the Financial Statements give a true and fair view of the financial position of the Company at 31 December 2018, and of the results of the Company's operations and cash flows for the financial year 1 January - 31 December 2018 in accordance with International Financial Reporting Standards as adopted by the EU and further requirements in the Danish Financial Statements Act.

We have audited the Financial Statements of Novo Holdings for the financial year 1 January - 31 December 2018, which comprise statement of comprehensive income and statement of financial position, statement of cash flows, statement of changes in equity and notes, including a summary of significant accounting policies ("financial statements").

Basis of Opinion

We conducted our audit in accordance with International Standards on Auditing (ISAs) and the additional requirements applicable in Denmark. Our responsibilities under those standards and requirements are further described in the Auditor's Responsibilities for the Audit of the Financial Statements section of our report. We are independent of the Company in accordance with the International Ethics Standards Board for Accountants' Code of Ethics for Professional Accountants (IESBA Code) and the additional requirements applicable in Denmark, and we have fulfilled our other ethical responsibilities in accordance with these requirements. We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our opinion.

Statement on Management Report

Management is responsible for Management Report.

Our opinion on the financial statements does not cover Management Report, and we do not express any form of assurance conclusion thereon.

In connection with our audit of the financial statements, our responsibility is to read Management Report and, in doing so, consider whether Management Report is materially inconsistent with the financial statements or our knowledge obtained during the audit, or otherwise appears to be materially misstated.

Moreover, it is our responsibility to consider whether Management Report provides the information required under the Danish Financial Statements Act.

Based on the work we have performed, in our view, Management Report is in accordance with the Financial Statements and has been prepared in accordance with the requirements of the Danish Financial Statements Act. We did not identify any material misstatement in the Management Report.

Management's Responsibilities for the Financial Statements

Management is responsible for the preparation of Financial Statements that give a true and fair view in accordance with International Financial Reporting Standards as adopted by the EU and further requirements in the Danish Financial Statements Act, and for such internal control as Management determines is necessary to enable the preparation of financial statements that are free from material misstatement, whether due to fraud or error.

In preparing the financial statements, Management is responsible for assessing the Company's ability to continue as a going concern, disclosing, as applicable, matters related to going concern and using the going concern basis of accounting in preparing the financial statements unless Management either intends to liquidate the Company or to cease operations, or has no realistic alternative but to do so.

Auditor's Responsibilities for the Audit of the Financial Statements

Our objectives are to obtain reasonable assurance about whether the financial statements as a whole are free from material misstatement, whether due to fraud or error, and to issue an auditor's report that includes our opinion. Reasonable assurance is a high level of assurance, but is not a guarantee that an audit conducted in accordance with ISAs and the additional requirements applicable in Denmark will always detect a material misstatement when it exists. Misstatements can arise from fraud or error and are considered material if, individually or in the aggregate, they could reasonably be expected to influence the economic decisions of users taken on the basis of these financial statements.

As part of an audit conducted in accordance with ISAs and the additional requirements applicable in Denmark, we exercise professional judgment and maintain professional skepticism throughout the audit. We also:

- Identify and assess the risks of material misstatement of the financial statements, whether due to fraud or error, design and perform audit procedures responsive to those risks, and obtain audit evidence that is sufficient and appropriate to provide ⊕

a basis for our opinion. The risk of not detecting a material misstatement resulting from fraud is higher than for one resulting from error as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal control.

- Obtain an understanding of internal control relevant to the audit in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the Company's internal control.

- Evaluate the appropriateness of accounting policies used and the reasonableness of accounting estimates and related disclosures made by Management.

- Conclude on the appropriateness of Management's use of the going concern basis of accounting in preparing the financial statements and, based on the audit evidence obtained, whether a material uncertainty exists related to events or conditions that may cast significant doubt on the Company's ability to continue as a going concern. If we conclude that a material uncertainty exists, we are required to draw attention in our auditor's report to the related disclosures in the financial statements or, if such disclosures are inadequate, to modify our opinion. Our conclusions are based on the audit evidence obtained up to the date of our auditor's report. However, future events or conditions may cause the Company to cease to continue as a going concern.

- Evaluate the overall presentation, structure and contents of the financial statements, including the disclosures, and whether the financial statements represent the underlying transactions and events in a manner that gives a true and fair view.

We communicate with those charged with governance regarding, among other matters, the planned scope and timing of the audit and significant audit findings, including any significant deficiencies in internal control that we identify during our audit.

Hellerup, 14 March 2019

PricewaterhouseCoopers
Statsautoriseret Revisionspartnerselskab
CVR No 33 77 12 31

Kim Füchsel
State Authorised Public Accountant
mne9291

Tue Stensgård Sørensen
State Authorised Public Accountant
mne32200

XIII

STATEMENT OF COMPREHENSIVE INCOME

1 January to 31 December

DKK million	Note	2018	2017
Income from Novo Group companies	2	10,564	6,033
Return from Life Science Investments	3	2,177	10,865
Return from Financial Investments	4	-1,319	3,806
Costs	5, 6, 7	-407	-419
Operating profit		**11,015**	**20,285**
Novo Nordisk Foundation's share of return of joint investment portfolio		608	-1,137
Profit before tax		**11,623**	**19,148**
Income tax expense	8	370	0
Total comprehensive income/Net profit for the year		**11,993**	**19,148**
Proposed distribution of profit			
Proposed dividend		5,800	1,600
Retained earnings		6,193	17,548
		11,993	**19,148**

XIV

STATEMENT OF FINANCIAL POSITION

Year end 31 December

DKK million	Note	2018	2017
Assets			
Novo Group companies	9	3.537	4,410
Life Science Investments	10	58,336	55,768
Financial Investments	11, 12	46,055	39,996
Property		458	419
Total non-current assets		**108,386**	**100,593**
Amounts owed by group companies		33	24
Investments pending settlement		31	0
Tax receivables		394	0
Other receivables		164	49
Cash at bank		940	208
Total current assets		**1,562**	**281**
Total assets		**109,948**	**100,874**
Equity and liabilities			
Share capital		500	500
Retained earnings		96,090	85,697
Total equity		**96,590**	**86,197**
Real estate debt		249	249
Joint investment portfolio Novo Nordisk Foundation		12,222	13,260
Trade payables		12	13
Amounts owed to group companies		12	2
Tax payables		0	24
Investments pending settlement		632	751
Other liabilities		77	57
Other provisions	14	154	321
Total current liabilities		**13,358**	**14,677**
Total liabilities		**13,358**	**14,677**
Total equity and liabilities		**109,948**	**100,874**

XV

STATEMENT OF CASH FLOWS

1 January to 31 December

DKK million	2018	2017
Net profit	**11,993**	**19,148**
Adjustment for non-cash items	-12,419	-19,105
Contribution from the Novo Nordisk Foundation to the joint investment portfolio	1,600	-
Repayments to the Novo Nordisk Foundation from the joint investment portfolio	-2,030	-1,450
Divestments of Life Science Investments	4,511	5,039
Investments in Life Science Investments	-5,530	-13,891
Received dividends Life Science Investments	745	1,520
Divestments of Financial Investments	12,582	15,163
Investments in Financial Investments	-20,166	-12,938
Received dividends Financial Investments	547	135
Cash flow before change in working capital	**-8,167**	**-6,379**
Change in working capital		
Changes in accounts with affiliated companies	1	-21
Changes in other receivables	-115	50
Changes in other liabilities	18	3
Cash flow from operating activities	**8,263**	**-6,347**
Investment activities		
Proceeds from sale of shares in Novo Group	4,829	373
Received dividends Novo Group companies	5,811	5,673
Investment in property	-46	-423
Cash flow from investment activities	**10,595**	**5,623**
Financing activities		
Real estate debt	-	250
Dividends paid	-1,600	-13
Cash flow from financing activities	**-1,600**	**237**
Net cash flow	**732**	**-487**
Cash and cash equivalents at the beginning of the year	208	695
Cash and cash equivalents at the end of the year	**940**	**208**

XVI

STATEMENT OF CHANGES IN EQUITY

1 January to 31 December

DKK million	Share capital	Retained earnings	Total
2018			
Equity at the beginning of the year	**500**	**85,697**	**86,197**
Net profit for the year	-	11,993	11,993
Dividends paid	-	-1,600	-1,600
Equity at the end of the year	**500**	**96,090**	**96,590**
2017			
Equity at the beginning of the year	**500**	**66,562**	**67,062**
Net profit for the year	-	19,148	19,148
Dividends paid	-	-13	-13
Equity at the end of the year	**500**	**85,697**	**86,197**

Share capital	No.	Nominal value DKK million
A share capital (shares of DKK 1)	115,400,000	115
B share capital (shares of DKK 1)	384,600,000	385
Total share capital at 31 December	**500,000,000**	**500**

Any share amount of DKK 1 of the A share capital carries 10 votes, while any share amount of DKK 1 of the B share capital carries 1 vote.

There have been no changes in the share capital during the last 5 years.

Paid dividend per share equals DKK 3.20 (2017: DKK 0.03)

NOTES

NOTE 1 - SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

The principal accounting policies applied in the preparation of these financial statements are set out below. These policies have been consistently applied to all the years presented, unless otherwise stated.

Basis of preparation
The financial statements included in this Annual Report have been prepared in accordance with International Financial Reporting Standards (IFRS) as adopted by the EU and additional requirements of the Danish Financial Statements Act for reporting class C enterprises (Large).

The financial statements are presented in DKK million unless otherwise stated.

Effects of new and amended accounting standards
The company has adopted all new and amended standards and interpretations issued by IASB and endorsed by the EU effective as of 1 January 2018. The application of new and amended accounting standards, including IFRS 9 Financial Instruments and IFRS 15 Revenue from Contracts with Customers, have not had material impact on the Financial Statements in 2018 and no future periods from the adoption of these new IFRS's are anticipated.

The following standards, which are not yet effective, are relevant for the company:

- IFRS 16 Leases, which will be effective from 1 January 2019.

It is the management's assessment that the above-mentioned changes in accounting standards and interpretations will not have any significant impact on the financial statements upon adoption of these standards.

Effects of changes in accounting policies
The date of recognition of our investments has changed from settlement date to trade date as this is deemed more in line with expectations from internal and external stakeholders. The change has an impact on total assets and liabilities in the current year by DKK 632mn, presented as Investment pending settlement. Comparative figures has been adjusted accordingly.

Critical accounting policies
The management of Novo Holdings considers the accounting policies for the investment categories set out below to be the most important to the company.

Investments in Novo Group companies
Investments in the category Novo Group companies are defined as being the company's directly owned shares in Novo Nordisk A/S and Novozymes A/S. NNIT A/S is no longer classified as a Novo Group company and has been transfered to Financial Investments in 2018. The change in classification has had a positive impact on the return from Financial Investment in 2018 of DKK 370mn. Investments in Novo Group companies are included in the company's financial statements at cost. If cost exceeds the recoverable amount, the carrying amount is written down to recoverable amount. Dividends and realised gains are included in 'Income from Novo Group companies´ in the company's statement of comprehensive income.

Life Science Investments
Investments in the category Life Science Investments are defined as direct or indirect investments in financial assets that are primarily related to health care and does not meet the definition of investments in Novo Group companies.

Subsidiaries, associates and other financial assets that fall into this category are recognised in accordance with IFRS9 at fair value through profit or loss; Investments are initially recognised at fair value and subsequently adjusted to fair value.

Realised and unrealised gains and losses on fair value adjustments are recognised in the statement of comprehensive income in the financial year in which they arise. Realised gains and losses on sale of financial assets are calculated on the basis of the original purchase price. Purchase and sale of Life Science Investments are recognised on the trade date.

Dividend income from financial assets at fair value through profit or loss is recognised in the statement of comprehensive income within 'Return from Life Science Investments' when the company's right to receive payments is established.

Financial Investments
Investments in the category Financial Investments are defined as investments in financial assets that does not meet the definition of investments in Novo Group or Life Science Investments.

Subsidiaries, associates and other financial assets that fall into this category are recognised in accordance with IFRS9 at fair value through profit or loss; Investments are initially recognised at fair value and subsequently adjusted to fair value.

Realised and unrealised gains and losses on fair value adjustments are recognised in the statement of comprehensive income in the financial year in which they arise. Realised gains and losses on sale of financial assets are calculated based on the original purchase price. Purchase and sale of Financial Investments are recognised on the trade date.

Dividend income from financial assets at fair value through profit or loss is recognised in the statement of comprehensive income within 'Return from Financial Investments' when the company's right to receive payments is established.

Fair value estimation
Please refer to Note 13.

Other accounting policies

Translation of foreign currencies
The financial statements are presented in Danish kroner (DKK), which is the company's functional currency and presentation currency.

Transactions in foreign currencies are translated into the functional currency at the exchange rates prevailing on the transaction dates. Foreign exchange gains and losses on completion of these transactions and on the translation of monetary assets and liabilities in foreign currencies to the exchange rates prevailing on the balance sheet date are recognised in the statement of comprehensive income.

Exchange rate differences arising on the translation of non-monetary items, such as other financial investments at fair value recognised in the statement of comprehensive income, are recognised as part of the gain or loss on fair value adjustments.

Derivative financial instruments
Novo Holdings does not apply hedge accounting, which is why value adjustments are recognised directly in the statement of comprehensive income under Return from Financial investments.

Leasing
Operating lease costs are charged to the statement of comprehensive income over the period of the lease.

Tax
Corporation taxes in the statement of comprehensive income include tax payable for the year and change in provision for deferred tax.

Provision for deferred tax is based on the liability method and covers all temporary differences between carrying and tax values and from realisable tax-loss carry-forwards.

The tax value of tax-loss carry-forwards is included in deferred tax assets to the extent that the tax losses and other tax assets are expected to be utilised in the future taxable income. The deferred taxes are measured according to current tax rules and at the tax rates expected to be in force on elimination of the temporary differences. Measurement of deferred taxes in Denmark is based on a tax rate of 22%.

Tax payable/receivable includes tax payable computed based on the expected taxable income for the year and any adjustment for tax payable for previous years.

Novo Holdings is covered by the tax rules concerning compulsory joint taxation, because of which the company is jointly taxed with its Danish subsidiaries. Corporation tax is allocated between profit- making and lossmaking Danish companies in ratio to their taxable income. Provision is made for tax using the full allocation method.

Costs
Costs comprise the costs incurred to investments and the administration of the company including transaction costs and salaries.

Employee benefits
Wages, salaries, social security contributions, paid annual leave and sick leave, bonuses, and non-monetary benefits are recognised in the year in which the company's employees render the associated services. Where the company provides long-term employee benefits, the employees concerned accrue the costs to match the rendering of the services.

Pensions
The company's contributions to defined contribution plans are charged to the statement of comprehensive income in the year to which they relate.

Provisions
Provisions are recognised where a legal or constructive obligation has been incurred, because of past events, and it is probable that it will lead to an outflow of resources that can be reliably estimated.

Property
Property comprise the company's domicile. Property is measured at cost, less subsequent depreciation and impairment losses. Land is measured at cost less impairment losses. Depreciation is calculated using the straight-line method to allocate the cost of each asset to its residual value over its estimated useful life as follows:

- Buildings 50 years
- Installations 20-50 years
- Furniture 5 years

The residual values and useful lives of the assets are reviewed and adjusted, if appropriate, at each balance sheet date.
Cost comprises acquisition price and expenses directly related to the acquisition until the time when the asset is ready for use. The cost of self-constructed assets comprises direct expenses for wage consumption and materials.

Liabilities
Liabilities are generally recognised at amortised cost unless specified otherwise.

Dividends
Dividends are recognised as a liability in the period in which they are declared at the Annual General Meeting.

Cash flow statement
The cash flow statement is presented in accordance with the indirect method and shows the company´s cash flows for the year broken down by operating, investing and financing activities, changes for the year in cash and cash equivalents as well as the company´s cash and cash equivalents at the beginning and end of the year.

The cash flow statement cannot be immediately derived from the published financial records.

Cash flows from operating activities
Cash flows from operating activities are calculated as the net profit/ loss for the year adjusted for changes in working capital and noncash operating items such as depreciation, amortization and impairment losses, and provisions. Working capital comprises current assets less short-term debt excluding items included in cash and cash equivalents.

Cash flows from investing activities
Cash flows from investing activities comprise cash flows from acquisitions and disposals of intangible assets, property, plant and equipment as well as fixed asset investments.

Cash flows from financing activities
Cash flows from financing activities comprise cash flows from the raising and repayment of long-term debt as well as payments to and from shareholders.

Cash and cash equivalents
Cash and cash equivalents comprise solely cash at banks.

Critical accounting estimates and judgements
The preparation of financial statements in conformity with generally accepted accounting principles requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities on the balance sheet date(s) and the reported amounts of revenues and expenses during the reporting period(s).

Management bases its estimates on historical experience and various other assumptions that are believed to be reasonable under the circumstances, the results of which form the basis for making judgements about the reported carrying amounts of assets and liabilities and the reported amounts of revenues and expenses that may not be readily apparent from other sources. Actual results could differ from those estimates.

Novo Holdings believes the following to be the critical accounting estimates and related judgements used in the preparation of its financial statements.

Life Science Investments
Investments in biotech companies are associated with significant risks, as they involve long-term investments in the development of new drugs and technologies. In accordance with the company's investment strategy, Novo Holdings has a wide spread in its investments in terms of geographical location, technologies and stage of development in order to limit the risk.

Life science investments are valued at fair value, if this can be set with a sufficient degree of reliability. By nature uncertainties exists regarding fair value assessments of life science investments. The company's management reviews and assesses the value of the individual investments on an ongoing basis. Please refer to Note 13 for valuation method and inputs.

Explanation of financial ratios
Financial ratios have been calculated in accordance with the "Guidelines and Financial Ratios 2015", issued by the Danish Society of Financial Analysts.

Equity ratio = Equity / Total liabilities and equity x 100

NOTE 2 - INCOME FROM NOVO GROUP COMPANIES

DKK million	2018	2017
Dividends received from Novo Nordisk A/S	5,461	5,330
Dividends received from Novozymes A/S	350	316
Dividends received from NNIT A/S	-	27
Gain from sale of shares in Novo Nordisk A/S	4,150	-
Gain from sale of shares in Novozymes A/S	603	360
Total Income for the year	**10,564**	**6,033**

NNIT A/S is no longer classified as a Novo Group company. Dividends received from NNIT A/S in 2018 amounted to DKK 36 million and is recognised as part of return from Financial Investments cf. note 4.

NOTE 3 - RETURN FROM LIFE SCIENCE INVESTMENTS

DKK million	2018	2017
Realised gain and return for the year, net	3,506	4,099
Appreciation to fair value, net	-1,329	6,766
Total Investment Result for the year	**2,177**	**10,865**

NOTE 4 - RETURN FROM FINANCIAL INVESTMENTS

DKK million	2018	2017
Realised gain and return for the year, net	559	3,489
Appreciation to fair value, net	-1,878	317
Total Investment Result for the year	**-1,319**	**3,806**

NOTE 5 - EMPLOYEE COSTS

DKK million	2018	2017
Wages and salaries	158	101
Incentive fees paid	231	27
Incentive fees change in provision	-167	101
Pension costs, defined contribution plans	15	11
Other employee costs	4	3
Total employee costs	**241**	**243**
Allocation of employee costs by category:		
Life Science Investments	154	168
Financial Investments	12	10
Administration & management	75	65
	241	**243**
Hereof remuneration to Executive Management:		
Salaries and short-term incentives	16	16
Long-term incentives	1	3
Pension	1	1
	18	**20**

Board of Directors' remuneration	2018				2017			
DKK thousands	Board fee	Commitee work	Travel allowance	Total	Board fee	Commitee work	Travel allowance	Total
Sten Scheibye	863	-	-	863	1,725	-	75	1,800
Göran Ando	144	29	58	231	575	117	308	1,000
Jeppe Christiansen	575	-	-	575	575	-	75	650
Per Wold-Olsen	144	162	325	631	575	150	375	1,100
Steen Riisgaard	869	-	-	869	575	-	75	650
Lars Rebien Sørensen	1,163	-	-	1,163	431	-	75	506
Jean-Luc Butel	575	154	680	1,409	144	117	456	717
Francis Cuss	575	-	446	1,021	144	-	149	293
Viviane Monges	431	-	-	431	-	-	-	-
	5,339	**345**	**1,509**	**7,193**	**4,744**	**384**	**1,588**	**6,716**

Committee work consists of Novo Advisory Group.

	2018	2017
Average number of full-time employees (no.)	**68**	**51**

NOTE 6 - COSTS PER AREA

DKK million	2018	2017
Costs regarding Life Science Investments	282	276
Costs regarding Financial Investments	10	13
Administration & management	115	130
Total cost for the year	**407**	**419**

NOTE 7 - FEE TO STATUTORY AUDITORS

DKK million	2018	2017
Statutory audit	0.8	0.6
Tax advisory service	1.6	1.9
Other services	1.3	6.0
Total fee to statutory auditors	**3.7**	**8.5**

NOTE 8 - INCOME TAXES

DKK million	2018	2017
Computation of effective tax rate		
Statutory tax rate	22.0%	22.0%
Non-taxable income less non-deductible expenses	-25.1%	20.2%
Deductable dividend	0.0%	-1.8%
Effective tax rate	**-3.1%**	**0.0%**

The taxable income consist of the returns on Financial Investments, which was negative in 2018.

When assessing Danish corporation tax the company and all Danish subsidiaries are taxed jointly. Novo Holdings A/S is the administrative body in relation to the joint taxation. The Danish group companies are jointly liable for corporation tax on the consolidated taxable income.

The joint income tax paid was DKK 7,528 million (DKK 7,329 million in 2017) for the current year, and received DKK 130 million (DKK 367 million in 2017) in taxes regarding the previous year.

NOTE 9 - NOVO GROUP COMPANIES

DKK million	2018	2017
Cost at the beginning of the year	4,410	4,422
Disposals during the year	-76	-12
Transfer to Financial Investments	-797	-
Carrying amount at the end of the year	**3,537**	**4,410**

The Novo Group companies is valued at historical cost. NNIT A/S is no longer classified as a Novo Group Company and the cost value has been transfered to Financial Investments.

NOTE 10 - LIFE SCIENCE INVESTMENTS

DKK million	2018	2017
Cost at the beginning of the year	37,357	26,025
Additions during the year, net	3,897	11,321
Transfer between Financial Investments and Life Science Investments	-	11
Cost at the end of the year	**41,254**	**37,357**
Value adjustments at the beginning of the year	18,411	11,645
Appreciation to fair value, net	-1,329	6,766
Transfer between Financial Investments and Life Science Investments	-	-
Value adjustments at the end of the year	**17,082**	**18,411**
Fair value at the end of the year	**58,336**	**55,768**
Fair value measurement hierarchy		
Active market data	33,355	36,516
Directly or indirectly observable market data	-	-
Not based on observable market data	24,981	19,252
	58,336	**55,768**
Change in values not based on observable market data		
At the beginning of the year	19,252	15,826
Additions during the year	5,417	3,425
Disposals during the year	-1,745	-999
Change in hierachy due to investments that completed an IPO during the year	-279	-306
Gains through profit or loss	2,336	1,306
	24,981	**19,252**

NOTE 11 - FINANCIAL INVESTMENTS

DKK million	2018	2017
Cost at the beginning of the year	29,361	27,760
Additions during the year, net	7,140	1,612
Transfer from Novo Group	797	-
Transfer between Financial Investments and Life Science Investments	-	-11
Cost at the end of the year	**37,298**	**29,361**
Value adjustments at the beginning of the year	10,635	10,318
Appreciation to fair value, net	-1,878	317
Transfer between Financial Investments and Life Science Investments	-	-
Value adjustments at the end of the year	**8,757**	**10,635**
Fair value at the end of the year	**46,055**	**39,996**

NNIT A/S has been tranfered from the Novo Group at historical cost value.

Fair value measurement hierarchy		
Active market data	40,335	34,231
Directly or indirectly observable market data	2,366	2,622
Not based on observable market data	3,354	3,143
	46,055	**39,996**
Change in values not based on observable market data		
At the beginning of the year	3,143	2,393
Additions during the year	550	604
Disposals during the year	-120	-92
Gains through profit or loss	-219	238
	3,354	**3,143**
Allocation of Financial Investments		
Short term bonds	10,316	8,383
Corporate credits and emerging market bonds	5,167	5,427
Equities	27,218	23,043
Private equity and real estate investments	3,354	3,143
	46,055	**39,996**

NOTE 12 - FINANCIAL INSTRUMENTS AND FINANCIAL RISK FACTORS

Financial instruments

The company contracts derivatives to hedge financial assets based on individual considerations.

The table below shows the derivatives contracted to hedge currency exposure on investments which give rise to value adjustments in the statement of comprehensive income:

	31 December 2018		31 December 2017	
DKK million	**Contract amount**	**Market value**	**Contract amount**	**Market value**
USD/DKK	1,398	11	1,737	7
JPY/DKK	57	0	55	10
CHF/DKK	27	0	26	0
GBP/DKK	191	3	129	-1
Total	**1,673**	**14**	**1,947**	**16**

Financial risk factors

The fair value of the financial assets is exposed to adverse chances in the financial markets. The financial risk factors include the following types of risks: Currency risk, credit risk, interest rate risk and price risk.

Currency risk

Currency risk arises when we invest in financial assets in other currencies than DKK as the currency of most of the expenses and the functional currency of Novo Holdings and the Novo Nordisk Foundation is DKK. The Financial assets in the investment portfolio are primarily exposed to the USD, EUR and GBP. Novo Holdings' policy is not to hedge share-based assets, but to hedge bond-based and liquid assets based on individual considerations. Hedging of currency exposure is carried out through currency derivatives, which generally have a maturity period that would not exceed six months.

The following table details the exposure to currency risk:

	Value 31 December 2018		Value 31 December 2017	
	Local currency million	**DKK million**	**Local currency, million**	**DKK million**
Traded investment assets				
USD	$4,018	26,250	$3,400	21,108
EUR	€1,621	12,106	€1,315	9,790
GBP	£967	8,018	£1,188	9,968
Other	-	833	-	451
FX derivatives				
USD	-$214	-1,398	-$280	-1,737
EUR	€0	0	€0	0
GBP	-£23	-191	-£15	-129
Other	-	-84	-	-81
Cash in foreign currency				
USD	$62	406	$21	120
EUR	€13	96	€3	20
GBP	£4	28	£1	9
Other	-	0	-	1

The following table details the sensitivity to currency fluctuations:

DKK million	Unhedged exposure, 2018 Local currency million	Impact on gain/loss in 2018 (DKK million)	Unhedged exposure, 2017 Local currency million	Impact on gain/loss in 2017 (DKK million)
10% USD appreciation	$3,866	2,526	$3,141	1,949
10% GBP appreciation	£949	786	£1,174	985

The table sensitivities are based only on the impact of financial instruments that are outstanding at the balance sheet date and are thus not an expression of Novo Holdings total currency risk. A depreciation in currencies would have an equal but opposite impact.

Credit risk

Credit risk occurs on financial assets. Novo Holdings' policy is to have most of the bond-based investments in Danish government bonds and domestic mortgage credit bonds and a minority in different high yield bonds. Based on individual consideration of each asset it is decided whether the credit risk should be hedged through derivatives.

Interest rate risk

Interest rate exposure arises in relation to interest-bearing assets and liabilities. Novo Holdings' policy is to place the majority share of the interest-bearing assets in Danish government bonds and domestic mortgage credit bonds, and a minority in different high yield bonds. The interest rate risk is not hedged through derivatives, but the duration of the portfolio is adjusted to a desired exposure.

An increase of one percentage point in the interest rate would, other things being equal, result in a decrease in the portfolio of DKK 170 million (2017: DKK 93 million).

The following table details the market value of the floating rate and fixed rate Short term bonds investments. The future payments from the floating rate interest bearing assets will fluctuate with the short-term market interest rates. However, the fair value will not fluctuate significantly with changes in market interest rates.

DKK million	2018	2017
Floating	3,599	4,718
Fixed	6,718	3,665
Total	**10,316**	**8,383**

Price risk

Price risk is the risk that the value of the investment portfolio will fluctuate due to changes in the market price, caused by factors specific to the individual investment or factors affecting all similar investments traded in the market. Novo Holdings invests both directly and through mutual funds and private equity funds. Novo Holdings' policy is to place up to 80% of the securities in share-based assets. The price risk is not hedged through derivatives. The invested capital is allocated to reflect several defined risk measures and tolerance levels, which includes a maximum potential loss on the investment portfolio, excluding Novo Nordisk, Novozymes and NNIT, in exceptionally negative market conditions. This financial risk measures are monitored by Novo Holdings and reported every quarter to the Novo Nordisk Foundation.

The price risk exposure of the investment portfolio is detailed in the following table. Note that most of the investments through mutual funds are classified as "unquoted" as the fund certificates are unquoted. However, the majority of the underlying assets are quoted.

DKK million	31 December 2018			31 December 2017		
	Quoted	Unquoted	Total	Quoted	Unquoted	Total
Life Science	**33,355**	**24,981**	**58,336**	**36,516**	**19,252**	**55,768**
Short term bonds	10,316	-	10,316	8,383	-	8,383
Corporate credits and emerging market bonds	1,068	4,099	5,167	1,368	4,059	5,427
Equities	9,856	17,362	27,218	5,599	17,444	23,043
Private equity and real estate companies	0	3,354	3,354	0	3,143	3,143
Financial Investments	**21,240**	**24,815**	**46,055**	**15,350**	**24,646**	**39,996**
Total	**54,595**	**49,796**	**104,391**	**51,866**	**43,897**	**95,764**

Both the quoted and unquoted investments are exposed to price risk. A 10 percentage decrease in the average price would, other things being equal, result in a decrease in the portfolio value of DKK 10,439 million (2017: DKK 9,576 million). An increase in the average price of 10% would have an equal but opposite impact.

Liquidity risk

Liquidity risk is the risk of not being able raise enough cash to meet the financial obligations when they fall due. This is a risk given the Novo Nordisk Foundation's substantial commitments to charity, investment activities and commitment to provide a stable basis for the commercial and research activities of the companies in the Novo Group.

The liquidity risk is monitored regularly by Novo Holdings and reported every quarter to the Novo Nordisk Foundation. The invested capital is allocated to ensure that the Novo Nordisk Foundation at any time can liquidate assets, without incurring losses from forced disposals, for a value corresponding to i) actual committed as well as expected 5-year grant payout obligations plus ii) an additional buffer.

NOTE 13 - FAIR VALUE ESTIMATION POLICIES

Fair value is the price that would be received by selling an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date.

Novo Holdings has implemented fair value guidelines and procedures, which ensure a consistent fair value measurement of each investment over time. Moreover, the fair value guidelines provide a framework for reasonable, consistent and transparent selection of valuation methodologies for valuing our investments. The selection criteria are in line with the value hierarchy in IFRS 13.

Hierarchy of fair value inputs
Investments measured at fair value are classified according to a fair value hierarchy depending on the inputs used in the valuation method. The fair value hierarchy distinguishes between observable and unobservable inputs, which are categorised within one of the following levels:

Level 1 – Unadjusted quoted market prices for identical assets in an active market.

Level 2 - Inputs, other than quoted market prices included within Level 1, which are observable either directly (i.e. as prices) or indirectly (i.e. derived from prices). Quoted prices for similar assets is a level 2 input.

Level 3 – Inputs for the asset that are not based on observable market data.

Securities traded on active markets are generally classified in level 1. Securities traded on inactive markets are generally categorised in level 2. Securities in private unlisted operating companies are generally categorised in level 3.

Investments in private investment companies are classified in level 2 or level 3 depending on the nature of their investment portfolios, their ability to liquidate their underlying investments, and any other restrictions on the disposition of the investments. If the investment can be redeemed at the reported net asset value on the measurement date or in the near future, the investment is categorised in level 2. Otherwise, the investment is categorised in level 3.

Policy for determining when transfers between levels are deemed to have occurred
Transfers into level 3 occurs when quoted market prices (level 1) or other observable inputs (level 2) are no longer available. Transfers out of level 3 occurs if quoted market prices (level 1) or other observable inputs (level 2) becomes available (e.g. when a private company goes public through an IPO, equity investments in the company transfers from level 3 to level 1 as the shares can be valued using the quoted market price (level 1).

Valuation methods and input
The general principle applied in selection of valuation approach maximizes the use of observable inputs and minimizes the use of unobservable inputs.

If a security trades in an active market the closing price is applied. An active market is defined as one in which transactions for the security occur with sufficient frequency and volume to provide pricing information on an ongoing basis.

Should a security not trade in an active market it is initially booked and held at cost in the first twelve months succeeding the investment, unless any material events occur within this timeframe. Beyond the twelve months window, the valuation methodology follows the following hierarchy below:

When independent broker quotes representing contemporaneous trades exist, these will be applied in estimating the fair value of the security;

If a portfolio company has carried out any financing rounds within the last twelve months and the pricing in the financing round is likely to represent a fair value, the fair value estimate is based on the price obtained in the financing round;

If neither independent broker quotes nor pricing from financing rounds are available, the fair value will be based on application of a modelling approach, which again follows a strict hierarchy:

1. If the company runs an established business with an identifiable stream of continuing earnings or cash flows that are considered to be maintainable, and it is possible to identify comparable companies in terms of risk attributes and earnings growth prospects, the fair value shall be based on application of the market approach (i.e. relevant multiples based on a set of comparable companies);

2. If no comparable companies in terms of risk attributes and earnings growth prospects can be identified, the fair value shall be based on application of an income approach (i.e. a discounted cash flow model);

3. If the company does not run an established business with an identifiable stream of continuing earnings or cash flows that are considered to be maintainable, the fair value shall be based on a value trigger approach, by which the fair value changes based on the occurrence of value triggering events.

Fair value measurement by hierarchy

The following table presents the investments hierarchy of fair value input:

	31 December 2018			
DKK million	**Level 1**	**Level 2**	**Level 3**	**Total**
Life Science Investments	**33,355**	**0**	**24,981**	**58,336**
Short term bonds	10,316	0	0	10,316
Corporate credits and emerging market bonds	3,214	1,953	0	5,167
Equities	27,218	0	0	27,218
Private Equity and real estate companies	0	0	3,354	3,354
Financial Investments in total	**40,748**	**1,953**	**3,354**	**46,055**
Total	**74,103**	**1,953**	**28,335**	**104,391**

Invenstment as of December 31 2017 by hierarchy of fair value input:

	31 December 2017			
DKK million	**Level 1**	**Level 2**	**Level 3**	**Total**
Life Science Investments	**36,516**	**0**	**19,252**	**55,768**
Short term bonds	8,383	0	0	8,383
Corporate credits and emerging market bonds	2,805	2,622	0	5,427
Equities	23,043	0	0	23,043
Private Equity and real estate companies	0	0	3,143	3,143
Financial Investments in total	**34,231**	**2,622**	**3,143**	**39,996**
Total	**70,747**	**2,622**	**22,395**	**95,764**

For the investments in unquoted equities, estimations of fair value rely substantially on non-observable input (level 3) such as pro-forma adjusted operating income multiplied by relevant multiples (e.g. EV/EBITDA) for a set of comparable companies less net interest-bearing debt.

If comparable companies are not available or applicable, fair value estimation will rely on other inputs such as projected cash flows discounted with a weighted average cost of capital (WACC). The following table details the estimations of fair value using non-observable input (level 3) by valuation technique:

DKK million	**2018**	**2017**
Income approach	10,747	8,689
Market approach	7,663	8,163
Other approaches	9,925	5,543
Total	**28,335**	**22,395**

The fair value for each investment can vary significantly if one or more of these inputs were changed. The following table shows the range of inputs used in the valuation of unquoted equities.

Input	**Range**	**Sensitivity**
Multiples for comparable companies	12.1-17.9x	If multiples decreased by 1x, total investments at fair value would decrease by DKK 993 million
Pro-forma adjusted operating income	Individual	N/A
Weighted average cost of capital	4.5%-9.2%	If WACC increased by 1%-point, total investments at fair value would decrease by DKK 3,314 million
Projected cash flows	Individual	N/A
Net interest-bearing debt	Individual	N/A

NOTE 14 - OTHER PROVISIONS

DKK million	2018	2017
Provision for incentive fees at the beginning of the year	321	220
Paid during the year	-231	-26
Appreciation during the year, net	64	127
Provision for incentive fees at the end of the year	**154**	**321**

In 2017, a Long Term Incentive Programme (the LTIP) was introduced to cover employees in Novo Holdings, which, subject to meeting certain targets in 2017, 2018 and 2019, might be paid out in 2020. In 2018 an additional Long Term Incentive Programme was introduced, which, subject to meeting certain targets in 2018, 2019 and 2020, might be paid out in 2021. Based on the investment returns for 2018 we have made provision for these incentive scheme.

Further to this, provisions have been made to cover an older incentive scheme covering certain employees and middle managers within life science investment activities. This old incentive scheme will be phased out in 2019.

To cover potential future pay-outs related to these incentive schemes Novo Holdings has provisions of DKK 154mn in 2018 (DKK 321mn in 2017). Of these provisions, the company expects to payout DKK 19mn in 2019.

NOTE 15 - CONTINGENT LIABILITIES

Contractual obligations

Novo Holdings is engaged in supporting biotech companies, either directly or through capital funds. In connection with previous investments in biotech companies Novo Holdings has committed to make the following investments:

Contractual obligations related to Life Science Investments	3,602	1,445
Contractual obligations related to Financial Investments	634	630
Total continget liabilities	**4,236**	**2,075**

NOTE 16 - RELATED PARTY TRANSACTIONS AND OWNERSHIP

Related party transactions

The Novo Nordisk Foundation, Novo Ventures 1 A/S, Novo Ventures (US) Inc., the Sonion Group, the Xellia Group, the Novo Nordisk Group, the Novozymes Group, the NNIT Group, associated companies and the board of directors and the executive managements of Novo Nordisk Foundation and Novo Holdings are considered to be related parties.

All agreements have been negotiated on market-based terms, and the majority of the agreements are valid for one year.

In 2018 and 2017 Novo Holdings had the following transactions and outstanding balances with:

DKK million	2018	2017
Novo Nordisk Foundation		
Sale of services	62	20
Purchase of services	4	2
Novo Nordisk Foundation's share of Joint investment portfolio	12,222	13,260
Novo Nordisk Foundation's share of result from joint investment portfolio	-608	1,137
Dividend payment to Novo Nordisk Foundation	1,600	13
Novo Nordisk A/S		
Participation in share buy-back programme (sale of shares)	4,206	-
Purchase of shares in NNIT A/S	368	-
Purchase of services	2	3
Novozymes A/S		
Participation in share buy-back programme (sale of shares)	623	373
NNIT A/S		
Purchase of services	19	3
Novo Ventures 1 A/S		
Short-term facility for investment in Alta BioPharma Partners, L.P., Clarus Lifesciences III, L.P., SFJ Pharmaceuticals IX L.P. , Himalaya Capital Investors and Leerink Transformation Fund I L.P. at 31 December	758	343
Novo Ventures (US), Inc.		
Purchase of services	60	57
Other subsidiaries and associates		
Loans to other subsidiaries	1,211	1,150
Loans to associates	207	81
Contingent liabilities regarding commitments to associates	586	586

Other than the above-mentioned intercompany transactions and normal remuneration to management disclosed in Note 5 “Employee costs”, no transactions have been concluded with the board of directors, executive management or other related parties.

Ownership

Pursuant to section 112(1) of the Danish Financial Statements Act, no consolidated financial statements have been prepared. Novo Holdings is a wholly-owned subsidiary of the Novo Nordisk Foundation and is consolidated into the group financial statements of the Novo Nordisk Foundation.

The consolidated financial statements of the Novo Nordisk Foundation can be ordered at:

Novo Nordisk Foundation
Tuborg Havnevej 19
DK-2900 Hellerup
Municipality of Gentofte, Denmark

NOTE 17 - SUBSIDIARIES AND ASSOCIATES

Listed by investment category and secondarily degree of control.

Novo Group

Subsidiaries	***Ownership/voting rights****
Novo Nordisk A/S, Denmark	28.1%/75.8%
Novozymes A/S, Denmark	25.5%/71.7%

Life Science Investments

Subsidiaries

ERT HoldCo A/S, Denmark	100%	Sonion HoldCo A/S, Denmark	100%
Novo Invest 1 A/S, Denmark	100%	Xellia HoldCo A/S, Denmark	100%
Novo Ventures (US), Inc., USA***	100%	Novo DP2 Inc., USA	100%
Novo Ventures 1 A/S, Denmark	100%	BiOrigin ApS, Denmark	100%
Novo Holdings Principal Investment (US) Inc., USA	100%	ENV HoldCo A/S	100%

Associates

Acesion Pharma ApS, Denmark	49%	Karus Therapeutics Ltd., United Kingdom	23%
AMRA Medical	21%	MinervaX ApS, Denmark	49%
Antag Therapeutics ApS, Denmark	47%	NMD Pharma ApS, Denmark	28%
Arcellx Inc., USA	20%	Nuvelution Pharma, Inc., USA	50%
Aristea Therapeutics, Inc., USA	76%	Orexo AB, Sweden	27%/28%
Avilex Pharma ApS, Denmark	50%	Outpost Medicine, LLC, USA	26%
Biosyntia ApS, Denmark	43%	Northsea Therapeutics BV	20%
Bolt Biotherapeutics, Inc., USA	25%	Reapplix ApS, Denmark	23%
Chr. Hansen Holding A/S, Denmark	22%	Rgenix Inc., USA	24%
Convatec Group Plc	20%	Spruce Biosciences, Inc., USA	60%
Envirotainer Topci Limited	23%	Stargazer Pharmaceuticals, Inc., USA	79%
Epsilon-3 Bio Ltd., United Kingdom	29%	Symphogen A/S, Denmark	28%
F2G Limited, UK	39%	Synlab Limited	22%
Forendo Pharma Oy, Finland	26%	Unchained Labs, Inc., USA	39%
Hoba Therapeutics ApS, Denmark	49%	Vantia Ltd., United Kingdom	79/45%
Inthera Bioscience Ltd., Switzerland	28%	Veloxis Pharmaceuticals A/S, Denmark	41%
IO Biotech ApS, Denmark	33%		

Financial Investments

Associates

Dades A/S, Denmark	44%

Subsidiaries

NNIT A/S**, Denmark	33.5%

* Voting rights is only disclosed if different from ownership. Voting right is calculated nominally, i.e. excluding treasury shares.

** NNIT A/S is listed as a subsidiary given that Novo Holdings and the subsidiary Novo Nordisk A/S together own 51% of the shares and votes in the company.

*** Novo Ventures (US) Inc. is a seperate legal entity that provides certain consultancy services to Novo Holdings, mainly within the areas of identifying, analysing, and negotiating investment opportunities among life science and biotech companies in the US. They also conduct related follow-up activities, such as board memberships and control and reporting efforts.

For a complete overview of the subsidiaries in Novo Holdings group please refer to the consolidated financial statements of the Novo Nordisk Foundation.

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novo holdings
Investors in life science