DD EQUITY FUND

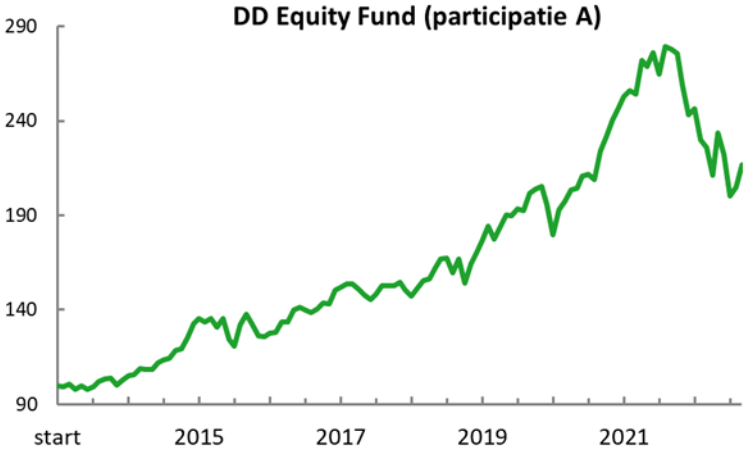
Monthly report November 2022

Profile

DD Equity Fund (DDEF) invests in a globally diversified portfolio of high-quality companies that are at the forefront of sustainability. At DDEF, the analysis on sustainability and financial aspects is fully integrated. The fund aims for a net return of 8%* per year in the long term and has no benchmark. DDEF is managed by an independent partnership with the conviction that sustainability makes a positive contribution to the return and risk profile of an investment portfolio. The partners of DoubleDividend also invest in the fund themselves. The fund is listed on Euronext Amsterdam and can be traded on a daily basis.

Return participation A*

DD Equity Fund achieved a return of 5.86% in November 2022, as a result of which the net asset value per unit A rose to € 216.72.



* The value of your investment may fluctuate. Results achieved in the past do not provide any guarantees for the future.

Fund information

Key facts

Fund size	€196.5 mln
# shares outstanding A	584889
# shares outstanding B	209974
# shares outstanding C	109,000
Net Asset Value A*	€ 216.72
Net Asset Value B*	€ 218.49
Net Asset Value C*	€ 219.55
# of positions	85
Beta	1,2

Costs

Management fee A	0.80%
Management fee B	0.50%
Management fee C	0.25%
Other costs**	0.20%
Up/down Swing factor	0.25%

Other

Start date	Part. A: April 2013 Part. B: January 2020 Part. C: January 2021
Manager	DoubleDividend Management B.V.
Status	Open-end, daily
Exchange	Euronext Amsterdam
ISIN (A)	NL0010511002
ISIN (B)	NL0014095127
ISIN (C)	NL0015614603
Benchmark	None
Currency	Euro

Risk monitor

* per participation
** expect

doubledividend
FINANCIAL & SOCIAL RETURNS

Table: monthly returns in %, participation A (net of costs and fees) *

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
2013				-0.84	1.37	-2.53	1.95	-2.01	1.31	3.02	1.26	0.35	**3.79**
2014	-3.29	2.58	2.17	0.43	3.26	-0.58	0.09	3.37	1.00	1.09	3.60	0.70	**15.17**
2015	5.01	5.81	2.05	-1.59	1.47	-3.44	3.71	-8.30	-2.70	9.50	4.12	-4.06	**10.66**
2016	-4.52	-0.31	1.46	0.44	4.09	-0.07	4.79	1.18	-0.95	-1.25	1.58	2.03	**8.44**
2017	-0.06	4.86	1.16	1.13	-0.17	-1.75	-2.16	-1.42	1.83	3.12	-0.13	0.10	**6.49**
2018	1.10	-2.62	-2.16	2.92	2.79	0.41	3.97	2.78	0.10	-4.42	4.50	-7.59	**1.01**
2019	6.37	3.36	4.19	4.25	-3.62	3.53	3.45	-0.28	2.10	-0.56	4.63	1.16	**32.08**
2020	0.73	-4.77	-8.16	7.40	2.32	3.02	0.56	3.19	0.39	-1.40	7.20	3.56	**13.73**
2021	3.83	2.21	2.87	1.10	-0.64	6.97	-1.07	2.71	-4.20	5.57	-0.56	-0.76	**18.94**
2022	-6.20	-5.97	1.35	-6.62	-1.81	-6.55	10.69	-4.92	-9.89	2.23	5.86		**-21.39**

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Market developments

Financial markets performed well in November, continuing the tentative recovery since October. Inflation seems to have peaked. Inflation figures in both the US and Europe did not disappoint last month for the first time in a long time. However, inflation in Europe is still around 10%, far from the ECB's 2% target. Both the ECB and the FED will continue to raise interest rates, but probably at a slower pace and in smaller increments.

At the same time, although economic growth is cooling down, employment and consumption figures do not yet point to the imminence of a deep recession. On a (geo)political level, there was some relief after a conversation between Biden and Xi at the G20 meeting in Bali. The outcome of the US midterm elections, in which the Democrats lost less ground than previously expected and retained a majority in the Senate, was also received positively. Equity markets recovered across a broad front as a result, with technology and emerging market equities performing relatively well. However, the US dollar lost ground (around 5% against the euro), dampening the performance on US equities.

Largest positive and negative contribution

The largest positive contribution came from a number of stocks from the chip sector, including Applied Materials, TSMC and ASML, which are discussed in more detail below. Chinese equities, such as Hong Kong insurers PingAn and AIA, also recovered strongly last month.

Cybersecurity firm Crowdstrike recorded the biggest drop after its quarterly earnings were poorly received by analysts. However, the company posted a 53% year-over-year revenue growth and raised earnings expectations for the current year. Sales growth for the next quarter is expected to be around 45%, according to the company, which was 1 to 2% less than some analysts had expected. The subsequent price drop was disproportionate in our opinion, so we took the opportunity to expand the position a bit.

Table: top 10 positive and negative contribution to the monthly result (in €)

Top 5 Positive			Top 5 Negative		
	Return	Contri.		Return	Contri.
Applied Material (US)	19.4%	0.5%	Crowdstrike (US)	-30.0%	-0.3%
Taiwan Semi (Taiwan)	29.4%	0.5%	PayPal (US)	-10.0%	-0.3%
ASML (NL)	17.7%	0.4%	FIS (US)	-16.1%	-0.3%
AIA (HK)	27.5%	0.4%	Medtronic (US)	-13.2%	-0.3%
Ping An (Chi)	46.8%	0.4%	Amazon (US)	-9.6%	-0.3%

Source: DoubleDividend/Bloomberg

Portfolio changes

We took advantage of the recovery in Chinese equities to reduce the weight of China somewhat. The positions in Baidu and JD.com have been reduced somewhat. The positions in Samsung SDI, ASML, Mastercard and Air Products have also been reduced somewhat due to the (relatively) strong returns.

The positions in Kingspan and Legrand (making buildings more sustainable), AMD (chips), Palo Alto Networks, Okta and Crowdstrike (cybersecurity), Salesforce (software) and DrMartens (shoes) have expanded somewhat.

Table: top 10 holdings in portfolio of the month end.

Companies & weight in portfolio			
Microsoft (US)	4.1%	Salesforce (US)	2.5%
Alphabet (US)	3.3%	HDFC (India)	2.4%
ThermoFisher (US)	3.1%	ASML(NL)	2.3%
Applied Material (US)	2.8%	Adobe (US)	2.2%
PayPal(US)	2.5%	Amazon(US)	2.1%

Source: DoubleDividend

Chip sector outlook

The chip sector has been the focus of attention for several months now. The shortage of chips over the past year has contributed to problems in the supply chains and thus inflation. Now that this shortage has been resolved in large parts of the chip market, there is a fear of a surplus of chips due to the weakening of economic growth. Major manufacturers of advanced chips such as AMD and NVIDIA adopted a cautious tone last month due to lower demand and high customer inventories. The chip sector is, once again, highly cyclical. This applies not only to supply and demand, but also to share prices of companies in the chip sector.

In addition to cyclical movements, the chip sector is subject to structural changes. In the first place, chips are being used more and more widely (more about that in a moment), as a result of which the sector is growing trend-wise and possibly also becoming somewhat less cyclical. However, the most important structural change of the moment is that the sector is at the centre of the changing global geopolitical relationships. Like oil, microchips have become an important part of the political arena because chips are used in more and more products and the production and development process is very complex. All economic power blocs therefore strive to be as self-sufficient as possible in the development and production of chips. Only then can chips not be used as a political weapon against a country. China is currently experiencing this first hand. The US is trying to maintain a lead in competition with China with export restrictions on microchips and chip technology.

At the moment, the technology for the production of chips mainly comes from the West. American companies in particular are dominant in the technological know-how for microchip development (Qualcomm, NVIDIA, Intel and AMD) and manufacturing equipment (Applied Materials, Lam Research, KLA). But South Korea and Japan also have an important position in the chip market with companies such as Samsung, SK Hynix and Tokyo Electron. However, there are two companies from other countries that play a key role in the sector; ASML from the Netherlands and TSMC from Taiwan. TSMC is the dominant player in the production of the most advanced chips. TSMC uses machines from ASML, among others, which, with its advanced EUV technology, has a virtually monopoly position on part of the chip production process.

ASML had its annual capital markets day last month. The event always provides an important insight into the circumstances and prospects for the microchip market. This is also an important event for us, given the large part that the sector forms in the DDEF's portfolio. At the moment, about 10 companies with a combined weight of approximately 16%. Key holdings are Applied Materials, ASML, TSMC and NVIDIA.

The presentation by ASML's management team shows that although the chip sector is facing more uncertainties in the short term, the sector can continue to build on a trend of long-term growth. ASML is even more optimistic about the growth prospects than last year. ASML foresees a doubling of the microchip market in the next decade. The company is even more positive about its own sales growth prospects. The company has revised its revenue growth expectations upwards for both 2025 and 2030. In 2021, ASML achieved a turnover of EUR 18.6 billion. This is expected to grow to 30 to 40 billion in 2025 and 44 to 60 billion in 2030. Overall, this means a doubling of turnover in 2025 and a tripling in 2030 compared to last year.

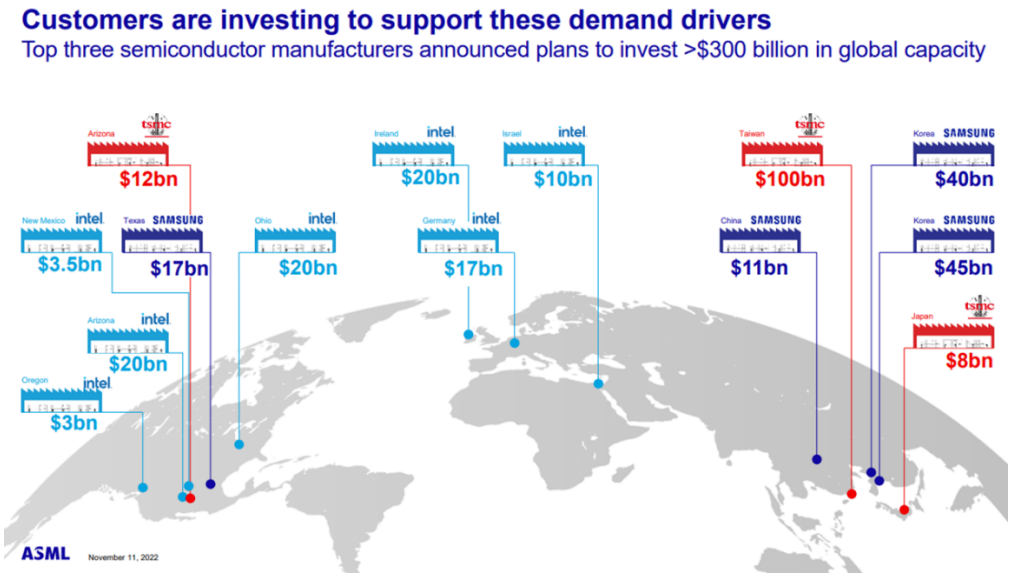
The trend growth of the market is the result of the structural growth in the use of microchips, which according to ASML can be attributed to three factors: digitization, climate change and socio-economic developments.

Digitization or the “connected world” means that more and more products contain chips. In the future, everything and everyone will be connected. Microchips are increasingly becoming part of everyday life. Partly because of this, the growth is not only in the demand for advanced chips. There is also a lot of latent demand in the so-called “mature nodes”. ASML is even refurbishing 20-year-old machines to meet the demand for less advanced chips. The biggest growth markets for the sector are now industry (smart factories), infrastructure (smart cities), data centers and automotive (electric cars), whereas previously these were PCs and smartphones.

Climate change also has a major impact on the demand for chips. Climate solutions are creating a lot of extra demand for chips due to the electrification of the economy, new mobility and making the energy supply more sustainable. Sustainable energy generators, for example, need a lot of chips. According to estimates from ASML and Infineon, the turnover for the chip sector amounts to € 3,000 per MW of wind energy and € 4,000 per MW of solar energy. Electric cars also contain twice as many chips as cars that run on fossil energy. In addition, the chips themselves become more energy efficient as they get smaller. A 3 nanometer (nm) chip is on average 30% more energy efficient than a 5 nm chip, while it is 70% faster. This underlines the importance of innovation and Moore's Law. So chips play an important role in generating energy, electrifying the economy and everyday life, and making electrical appliances more energy efficient.

Thirdly, socio-economic developments contribute to the strong demand for chips for a long period of time. Think of population growth, medical innovations, remote working and robotization as a result of the aging of the population.

Finally, companies like ASML and Applied Materials that sell equipment to make chips benefit from the desire for technical sovereignty. Due to the great importance of chips, problems in supply chains and geopolitical tensions, all economic blocs want to be as self-sufficient as possible in the production of chips, as mentioned earlier. Many regions have therefore set up major investment programmes. Companies such as Intel, TSMC and Samsung receive substantial subsidies to move production capacity to countries such as the US, Europe and Japan. The pursuit of technical sovereignty requires huge investment in the sector. The big three (TSMC, Intel and Samsung) have planned a total of more than $300 billion in investments. A large part of that money goes to the machines of ASML, Applied Materials and Tokyo Electron, among others.



The conclusion is that the chip sector can benefit from long-term trend growth thanks to digitization, sustainability and socio-economic developments. In addition, the sector benefits from substantial investments

and subsidies from governments. Nevertheless, the sector is (still) cyclical, resulting in volatility in profits and share prices. For long-term investors, this is less of a problem and price declines offer an opportunity to expand positions at attractive prices. With 16%, the sector has a significant weight in DDEF's portfolio.

Fuel innovation

The transport sector plays an important role in combating climate change. It is estimated that 20 to 25% of global CO2 emissions are related to the transport sector. Roughly three-quarters of this is caused by road transport (passenger and freight transport). The remainder of the emissions are caused by shipping, air traffic and rail. Electrification currently seems to be the best option to make the transport sector more sustainable, especially for passenger transport and small trucks. Within the DD Equity Fund, we invest therefore in companies such as Samsung SDI (batteries for electric cars) and Infineon (chips for electric cars). However, for parts of the transport sector (heavy trucks, aircraft, shipping) electrification is not (yet) an option. Alternatives are needed for this. The main options are hydrogen and biofuels.

The industrial gases market plays an important role in fuel innovation. Companies such as Air Products and Air Liquide (both in portfolio) are particularly active in the field of hydrogen. Incidentally, hydrogen also has broad industrial applications. The American company Air Products published its annual figures last month and gave an update of the investment program. The total investment program related to the energy transition has a size of $ 15 billion. Air Products has planned major investments in green and blue hydrogen with a total volume of $ 11 billion. For example, the company is building a $500 million hydropower facility in New York with a capacity of 94MW. Air Products' total hydrogen investments should avoid emissions of 190 billion liters of diesel (500 mt CO2) over the life of the projects.

But Air Products also has ambitions in the field of biofuels. The company has announced plans to build a renewable fuel plant for aircraft in California. Air Products will supply fuel made from sustainable organic material (renewable feedstock). The $2.5 billion plant is the first of its kind and will produce 340 million gallons (1.3 billion liters) of biokerosene annually by 2025. The market for biofuels is often criticized because in the past palm oil or soy was often used as a raw material, resulting in deforestation. However, new factories and techniques use waste and residual materials as raw materials for the production of fuels. This includes used frying oil, waste from the food industry and separated household waste. In this way, they not only contribute to the climate, but also to the circular economy. Although biofuels are seen by many as an intermediate solution (towards fully electric or green hydrogen), they have an important advantage, namely that they can be used directly in the existing fleet of means of transport that have not yet reached the end of their lifespan.

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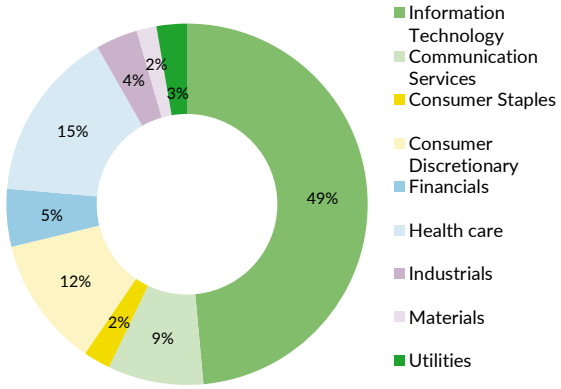
Appendix: portfolio characteristics

Table: Characteristics portfolio DDEF per month end

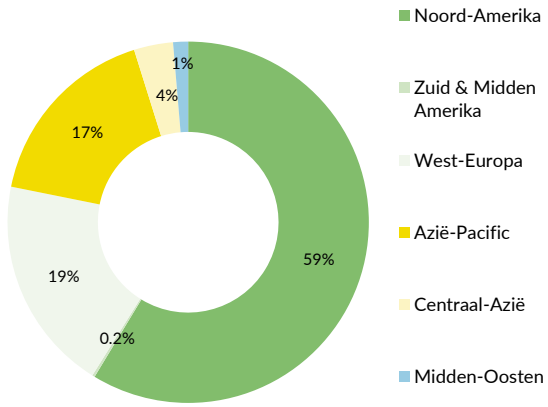
Valuation		Risk	
P/E ratio	32.4	Bèta (raw)	1.2
P/E ratio expected	20.6	Debt/EBITDA	2.7
EV/EBITDA expected	14.5	VAR (Monte Carlo, 95%, 1 yr)	34.3%
Dividend yield	1.7%	Standard deviation	20.6%
Price/cashflow expected	15.0	Tracking error (vs BBG World)	7.9%

Source: DoubleDividend/Bloomberg

Distribution per sector (GICS)



Distribution per region



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