



Dutch Defence and Security related Technological and Industrial Base

Final report commissioned by
the Ministry of Economic Affairs and Climate

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Preface

- This report presents the results of the research into the Dutch defence and security related Technological Industrial Base (NLDTIB).
- Due to geopolitical tensions, the research is more relevant than ever before. The research was conducted in January and February 2022, before the war in Ukraine had started.
- The Ministry of Economic Affairs and Climate (EZK), and in particular the Military Production Commissariat, is committed to a high-quality NLDTIB. A high-quality NLDTIB is necessary for The Netherlands to be able to provide national security. To get a good insight into the size of, and the available knowledge and skills within the NLDTIB, EZK periodically commissions research into the size (turnover and employment), characteristics and position of the Dutch defence and security related industry. Similar reports were issued in 2004, 2008, 2012, 2016 and 2019.
- In total, 180 companies participated, and twenty interviews were held with organisations working for the Dutch defence and security sector.
- The following topics were examined:
 - Employment.
 - Turnover, added value, Research & Development (R&D), and export.
 - Position within the chain and Dutch suppliers.
 - How current policy is valued and areas in which the government can assist/facilitate.
- Various cross-sections were made for these subjects, such as by domain, size classes and position in the chain.
- The study was carried out in close cooperation with the organisations NIDV, NAG, FME, VNO-NCW and MKB-Netherlands.
- We would like to thank all participating organisations for their participation in this study. We are in particular grateful to the interviewed companies, workshop participants and cooperating sector organisations for their contribution to the depth of the results. We hope that the study will help to improve the position and to strengthen the Dutch defence and security sector in these turbulent times.

The key figures

- On behalf of the Ministry of Economic Affairs and Climate Change (EZK), consulting firm Berenschot conducted a study into the size and composition of the Dutch Defence and Technological and Industrial Base.
- It concerns companies, their suppliers, and knowledge institutes that are involved in the design, development, production and maintenance of defence equipment (of the Dutch Navy, Army, Air Force and Military Police) and products aimed at the public security market, such as the Police, Europol, AIVD and relevant public investigation and enforcement organisations, including cyber. The companies are highly technological and very important for achieving strategic autonomy.
- In the Netherlands, approximately 150,000 FTEs are employed by 1,000 companies that are active in the defence and security sector. That is approximately 28% of total employment in the high-tech systems & materials industry.
- Almost 20,000 FTEs of these 150,000 FTEs actually work for the defence and security sector, with a turnover of around €5 billion.
- In addition, suppliers also have employees which we did not include in the research.
- The defence and security sector is generally R&D knowledge intensive and exports a lot. Companies also indicate that the dividing line between civil and military is becoming increasingly blurred through the use of dual-use products and the IT cyber domain.
- The share of turnover is stable and comparable with previous years. The total turnover of companies active in the defence and security sector was under pressure in 2020, mainly due to COVID-19. The turnover of the defence and security sector is stable and increasing and thus appears to be 'countercyclical'.
- There are high growth expectations. Around 55% of organisations expect growth, particularly from Original Equipment Manufacturers (OEMs) and companies in the maritime domain.

Development of key figures over time

- The attached table shows the most important key figures from the research, in addition to data from previous research. The figures show a trend change. Due to a change in the research method, a more stringent picture of the market is given.
- The number of companies in the population is considerably higher, but the turnover from the defence and security sector is stable. A number of explanations can be given for the developments over the different years. The number of companies doing business with the Ministry of Defence has increased significantly. This is also reflected in the response rate, which has doubled in comparison to the previous survey. This extra response mainly comes from companies that have not been approached in earlier studies. Companies that do little business with the Ministry of Defence were also approached. Therefore, the turnover per company is lower than in previous surveys.
- We see that export figures are lower than in previous surveys, and a lower number of jobs in the field of research and development (R&D).
- The research results were cross-checked with other sources such as defence expenditure, R&D expenditure of the top 30 companies in the Netherlands, export licences granted for military products, and European defence industry data. This has been done to ensure that the research accurately reflects current market developments.

	Previous research NLDITB				Berenschot research		
Key figures NLDITB	2006	2010	2014	2017	2019	2020	2021
Number of companies	290	451	651	475	932		
Defence & Security turnover (€ billion)	3,0	3,1	4,5	5,0	4,2	4,5	4,7
% Defence & Security turnover of total turnover companies	7,4%	7,1%	15,0%	12,0%	8,4%	9,7%	10,6%
Defence & Security exports (€ billion)	1,58	2,18	3,09	3,58	2,10	2,17	2,57
Total jobs	232.700	155.251	178.700	111.122	148.581	149.348	149.507
Defence & security jobs	14.230	14.753	18.200	21.560	16.528	17.729	19.506
Defence & security R&D jobs	3.400	4.554	7.995	7.364	3.243	3.510	4.115

Findings

General findings

- The research shows that the Defence Industry Strategy (DIS) is appreciated, but certainly not widely known. Companies also indicate that the DIS needs to be more concrete and specific.
- SMEs are very critical of government support and access to defence projects. The average score on support is a 5 (on a scale of 1-10). In particular, recognition of the industry's contribution and access to contracts is a major bottleneck. Companies indicate that less paperwork and a more proactive approach from the government is desirable.

Findings with regard to the Ministry of Economic Affairs

- Companies indicate that the Defence Industry Strategy (DIS) has not yet been sufficiently translated into specific policy and implementation with corresponding financing. Companies experience the current instruments of the Ministry of Economic Affairs as fragmented and generic. More focus is needed, which requires customisation. As a ministry, make sure to provide support in the financing of projects.

- There is a need for production innovation related incentives to strengthen the NLDTIB. By investing in the development of new high-quality products and technologies together with industry and knowledge institutes, the government can make an important contribution to the process of digitisation and also the competitive position within these markets.
- There is a need for more information from the Ministries of Economic Affairs and Defence on procurement processes, in order to involve the sector in an early stage. To participate in the R&D of new platforms or to acquire a position in the supply chain, support from the government at an early stage is important.
- We see that few companies are active in more than one domain. There is hardly any overlap in suppliers in the domains.
- There is an opportunity to further strengthen clusters within and between domains by stimulating cooperation. Companies expect the Ministry of Economic Affairs to play a leading role in organising such cooperation.

Findings

Findings regarding the Ministry of Defence

- Companies indicate that the current DIS should be further operationalised into actions at the Ministry of Defence. Ambitions should be translated into actual acquisition.
- Projects at the Ministry of Defence are long-lasting and require investments from the companies involved. This is certainly difficult for the SMEs. If accelerated delivery and additional equipment expansions are required, the current time frames will have to be shortened.
- Companies indicate that price is a too important factor in the award process; quality should play a greater role.
- Companies want a clear link between innovation and operations. The current tendering regulations and budgets of decision-makers within the ministry are not sufficiently in line when innovation is scaled up.
- There is a need for more stability in defence expenditure. A major issue is the continuity of work and innovations by market parties. The annual fluctuations are experienced as very inconvenient. So called “off the shelf projects” are actually development programmes that can be lengthy and more costly. This is also evident from the Ministry of Defence's policy review - Off the Shelf, Unless (17 December 2021).

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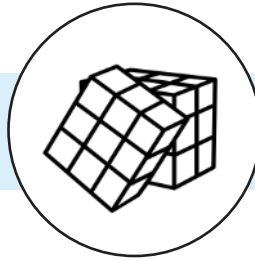
Dutch Defence and Security related Technological and Industrial Base

Background and research question



Situation

- The Ministry of Economic Affairs and Climate (EZK), and in particular the Military Production Commissariat (CMP), is committed to a high-quality Dutch defence and security related Technology Industrial Base (NLDTIB).
- A high-quality NLDTIB is necessary for the Netherlands to be able to provide national security.



Background

- The Ministry of Economic Affairs wants to periodically map the NLDTIB: 'What is the composition of companies and knowledge institutes within the NLDTIB and in what areas of the Defence Industry Strategy (DIS) are they active?'



Research question

- The number of companies and institutions that can be included in this sector
- Positioning within the CIS areas
- Turnover and employment, exports
- Innovation and R&D
- International position and partners
- Use of instruments
- How current policy is appreciated and fields in which the government can assist/facilitate
- Share in military and civilian activities

Trends and developments for the Dutch defence- and security sector



Generic

- Continuing geopolitical tensions lead to increased military spending. More European cooperation is needed. The current budget is below the NATO standard of 2% GNP.
- The Netherlands has a high level of knowledge and expertise, but the labour market is tight. High labour costs put pressure on the position of companies.
- Banks/capital providers are increasingly unwilling to invest in defence companies.
- Local content requirements in tenders are increasing.
- The transition to a more sustainable economy brings to new rules and stricter requirements.



Maritime

- The maritime industry in the Netherlands is still autonomous. The production of platforms is mentioned as a spearhead in the DIS. The chain of this industry is almost completely located in the Netherlands.
- Investments in the maritime sector are long-cyclic and long-term.
- The European naval construction seems to be in a consolidation phase. Due to lower numbers of frigates, the 'series effect' has diminished and exports are becoming more important.
- It is becoming increasingly difficult to fight for a strong position in the foreign supply chain.
- In the near future, major tenders are expected in the Netherlands.



Aeronautics and Space

- The Netherlands has knowledge and expertise in aircraft construction and is among the world leaders in its specific niches.
- The Netherlands does not have its own aircraft industry, but it does have an industry for drones and satellites
- The markets are very international, the series are large.
- The Netherlands is or has been closely involved in the development and production of the F-35 through international cooperation programmes, and has therefore acquired a good position.
- The Netherlands has very relevant space technology in the ecosystem around Delft.



Land

- Within the Netherlands, there are a limited number of companies that provide 'platforms'. A few are emerging.
- There are interesting niches; for example in the field of simulation, virtual reality, sensor and radar systems, and optical sensors (such as for night vision). The DIS indicates that the Netherlands is a leader in the field of battlefield management systems for land operations.
- The sector has many small and medium-sized companies. It is difficult for these companies to have sufficient international impact, while it is also difficult to link up with large companies within the domain.

Approximately 1000 companies in the NLDTIB population

- A market estimate was made based on previous studies, participants from sector organisations (NIDV, NAG, FME and VNO NCW), public publications from the Ministry of Defence and the contracts awarded from Tendered and TED.
- These are companies, suppliers and knowledge institutes involved in the design, development, production and maintenance of defence equipment (Navy, Army, Aerospace) and products aimed at the public security market (such as the police, military police, Europol, AIVD and relevant public investigation and enforcement organisations), including cyber.
- The relevant industry sectors were selected, leaving sectors such as facility services and construction companies out of the study's scope.
- This shows that there are approximately 1000 companies in the Netherlands that are active in the market in the field of the defence and security related technological industrial base. These are organisations that are occasionally part of a larger international concern.
- The Ministry of Defence has also indicated that it has more than 1000 suppliers
- From the military suppliers, 61.5% are from the Netherlands.



Key figures and explanation of development

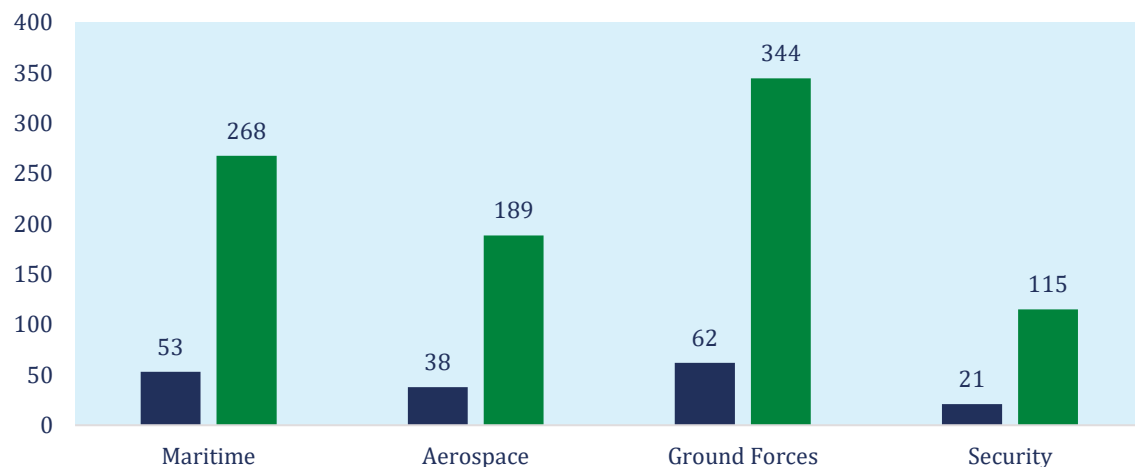
- The following table shows the most important key figures, including the data from the earlier research. A change in trend can be found. Due to a change in the research method, a more stringent and pure picture of the market is given.
- The number of companies in the population in the Berenschot study is considerably higher, but the turnover is stable. A number of explanations can be given for the developments over the various years.
- Significantly more companies doing business with the Ministry of Defence have been approached. By using other sources, a more specific inventory was made of those who conduct business with Defence and other public security institutions, such as the police. This is also reflected in the response rate, which has doubled in comparison to the previous survey. This extra response mainly comes from companies that have not been approached before. This means that companies that do little business in the defence sector were also approached. Therefore, the average turnover per company is lower than in previous years.
- In addition, the methodology for determining the turnover and size of the total population has been changed. The six largest organisations have been included without weighting. The same applies to knowledge institutes, which results in a more accurate estimate of the number of jobs in the field of research and development (R&D).
- Export is therefore also lower than in the previous study. In particular, the large organisations export more.

	Previous research NLDTIB				Berenschot research		
Key figures NLDTIB	2006	2010	2014	2017	2019	2020	2021
Number of companies	290	451	651	475	932		
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Population and market position in the chain

Percentage of organisations by size class of employees	0-25	25-100	100-250	250-500	500-2500	>2500	total
Sample	40,2%	31,6%	8,6%	8,6%	6,3%	4,6%	100%
Defence and security sector population	43,9%	30,8%	12,9%	5,7%	5,2%	1,6%	100%
% of total Dutch industry	69,6%	21,5%	4,9%	1,5%	2,4%	0,1%	100%

Number of companies by focus area



Companies classified by dominant domain

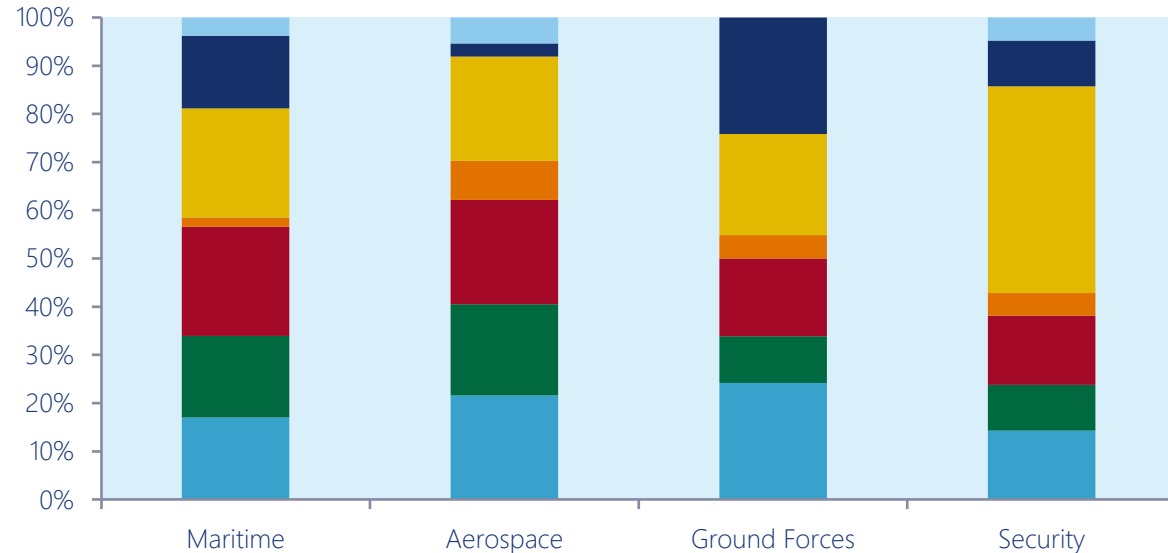
■ Number of companies in the study

■ Total population

- Approximately 80% of the companies in the sample fall into the group under 250 employees (SMEs). The percentage of these companies in the research population is 88%, and the percentage of companies in the entire industry in the Netherlands excluding the self-employed is about 96%. This means that larger companies slightly more participated in the research.
- The companies were classified into the domains of maritime, aerospace, land and public safety based on the domain in which the highest turnover is achieved.
- Based on the completed surveys, an estimate was made of the number of companies per domain in the total population. The domain 'land' is the most dominant in the Dutch industry with 344 companies, one third of the total. The domain 'safety' is least represented with 115 companies.
- Fewer specific safety companies participated in the survey, such as the larger international IT companies. Some companies feel that they are not part of the defence and security sector, and other companies were not willing to provide specific data.

Supply Chain is present, but with a limited number of large integrators

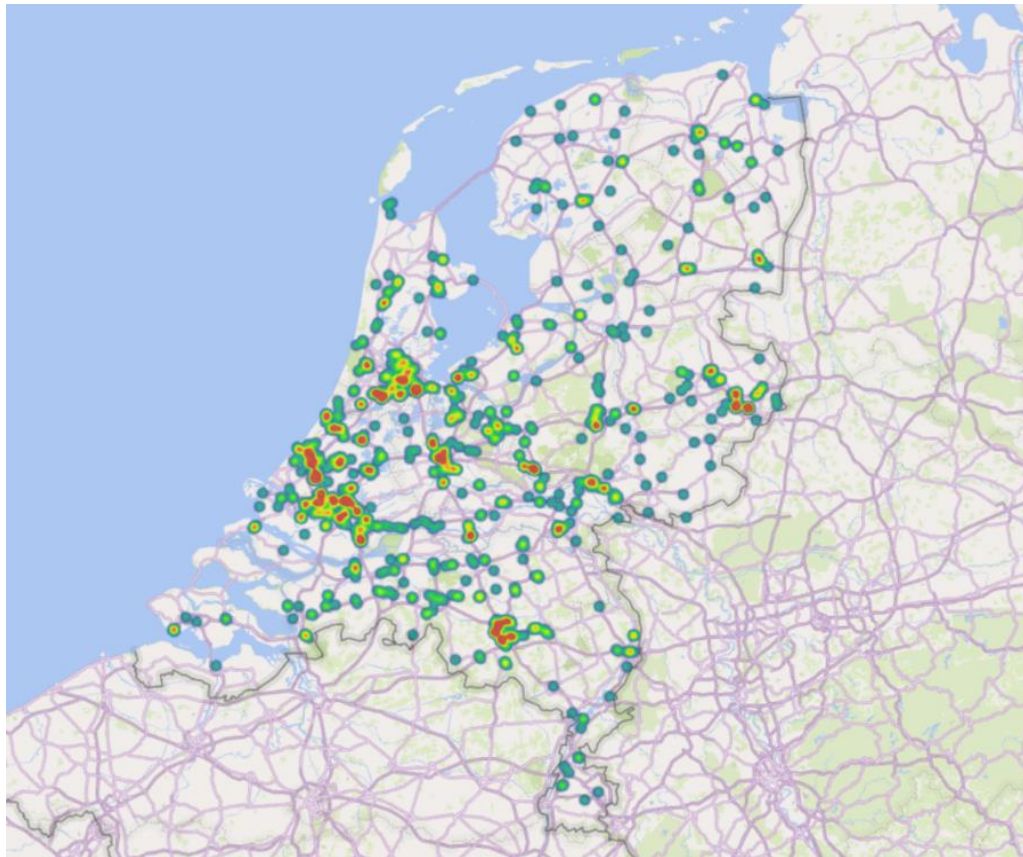
Percentage of the number of companies
by market position in the chain per domain



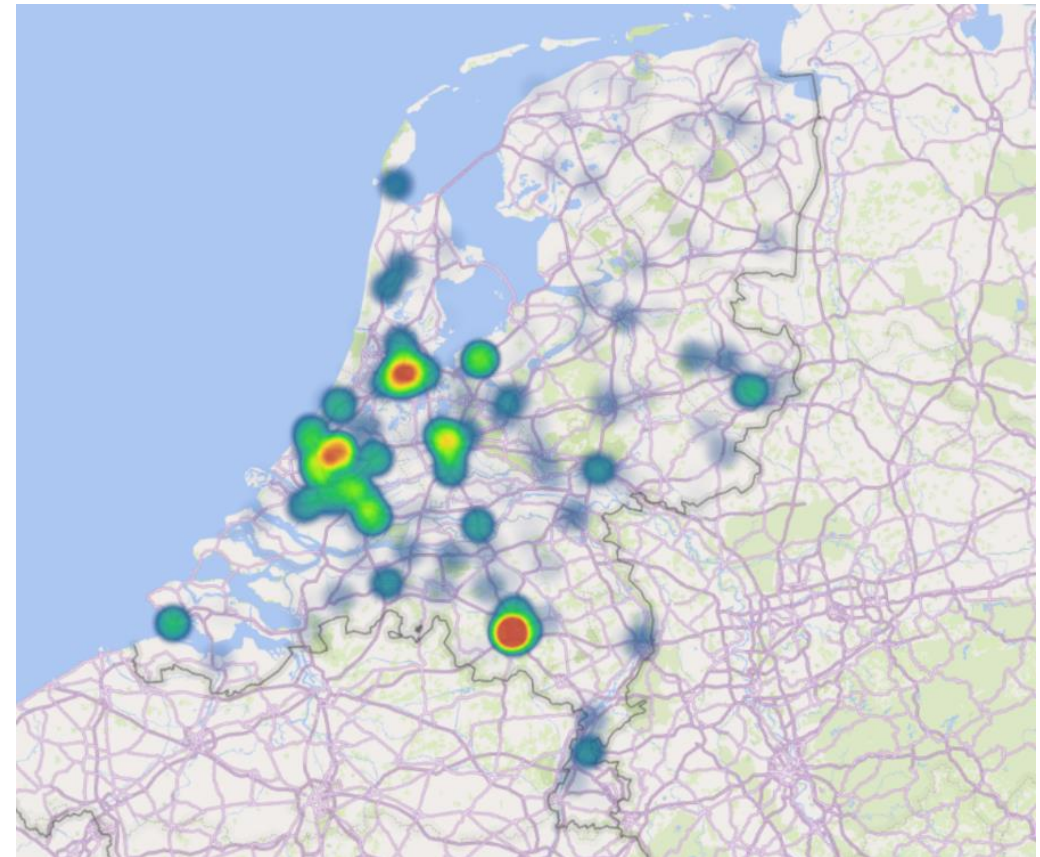
- There are few large self-creating OEMs, which means that the strengthening effect of the OEMs is absent. In the long term, this is a risk for knowledge and technology retention.
- OEMs can play an important role in the chain, both in employment and in the coordinated development of technologies (in a roadmap, for example).
- There are major Dutch tier-1 and tier-2 players in the (international) market.
- Many companies have focused on a niche. As such there is a lot of knowledge and expertise present in a limited area or capacity.
- Many companies that are further down the chain find it more difficult to assess their contribution to the defence and security sector.
- Within the land domain, there are many companies focused on trade and value added logistics.
- Within the security domain, there are relatively many companies that focus on services, including IT.

In the Netherlands, approximately 150,000 FTEs are employed by 1,000 companies that are active in the defence and security sector

The approximately 1,000 companies, active in the defence and security sector, are well distributed throughout the country.

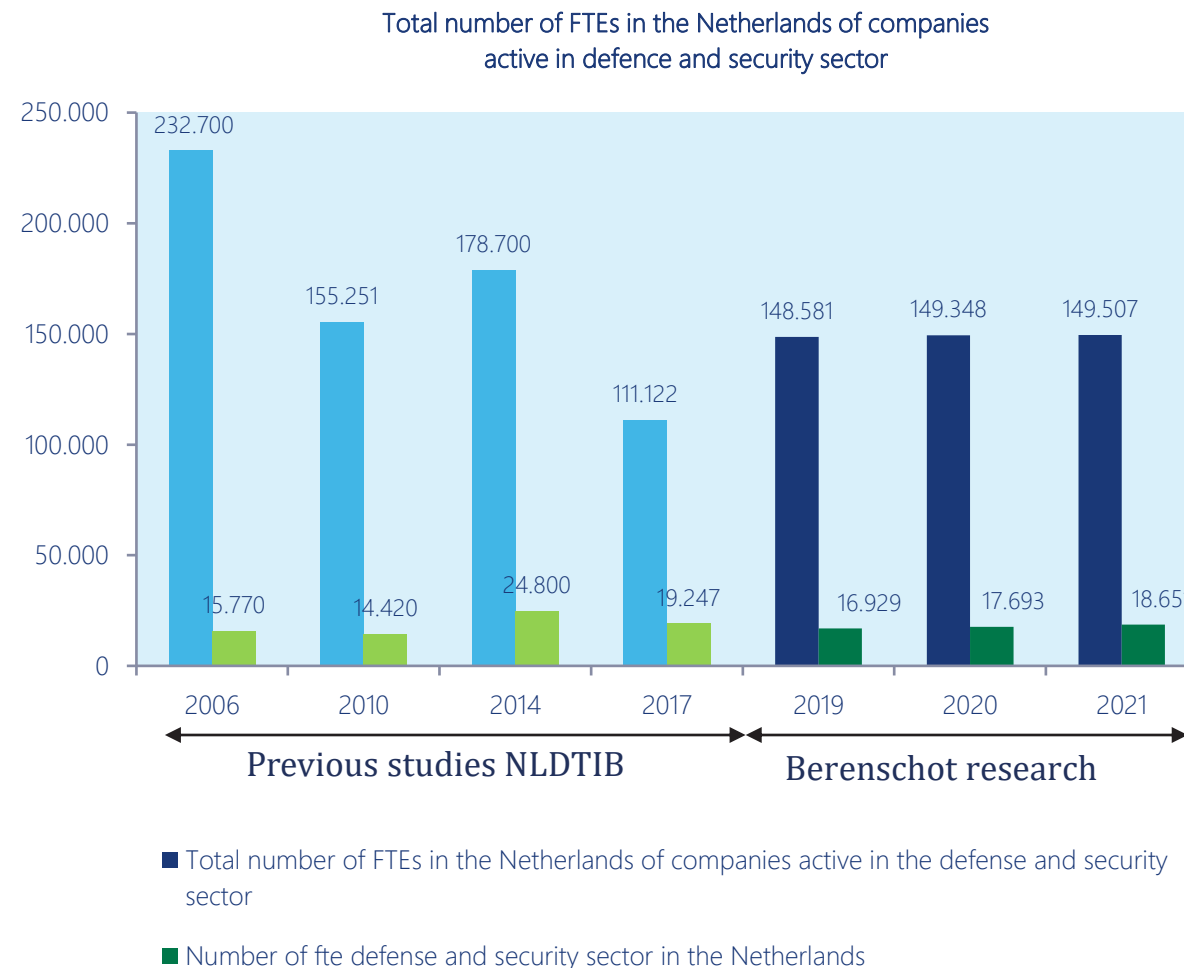


150,000 employees are strongly concentrated in the Randstad (which is the area around the four largest cities in The Netherlands, namely Amsterdam, Rotterdam, The Hague and Utrecht), Brabant and the East of the Netherlands.



The number of jobs in the defence and security sector is approximately 20,000 FTEs and rising.

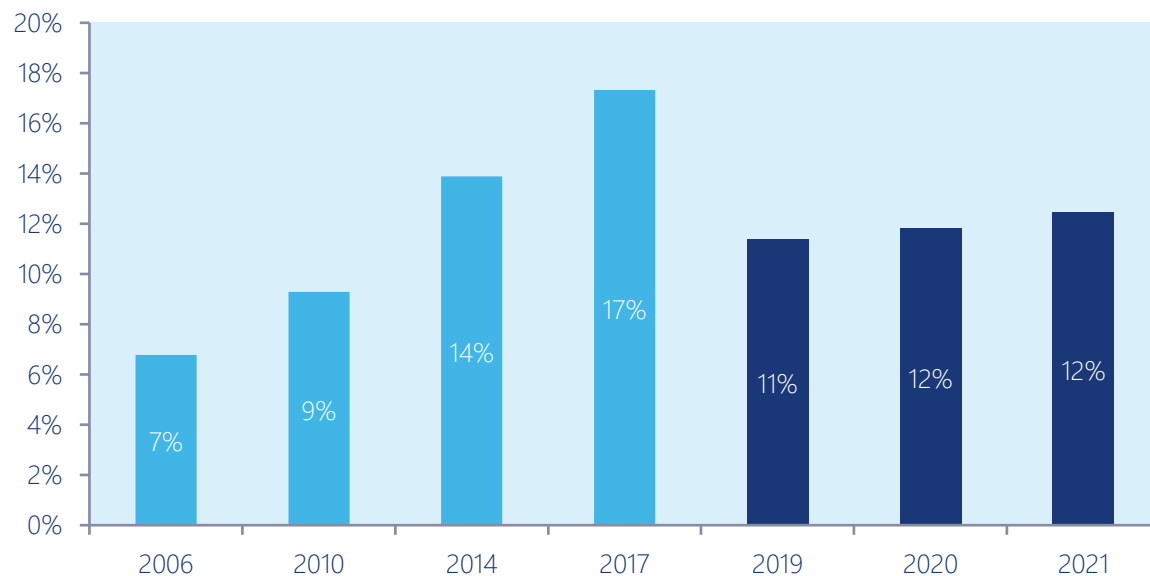
- In total, approximately 150,000 FTEs are employed by companies that provide products and services to the defence and security sector. Of these, almost 20,000 FTEs are actually employed in this industry. Many organisations are therefore not entirely dependent on the defence and security sector and have a mix of civilian and military customers.
- In addition, there are suppliers whose employees are not included in the research. It is common practice to apply a multiplier of 0.5 FTE indirect employment per 1 FTE direct employment within the industry sector. This results in an indirect employment of 9,300 FTEs. It should be noted, however, that a share of the suppliers already fall within the scope of the study in the population of the companies investigated.
- Based on the share of turnover accounted for by Dutch suppliers, the additional indirect employment at suppliers in the Netherlands is approximately 5,000 FTEs.



Employment has particularly increased in the maritime and land domain

The percentage of FTEs working for the defence and security sector is approximately 13% of the total number of FTEs of the studied companies.

fte defense and security sector as % of total FTE in the Netherlands
for companies active in NLDTIB

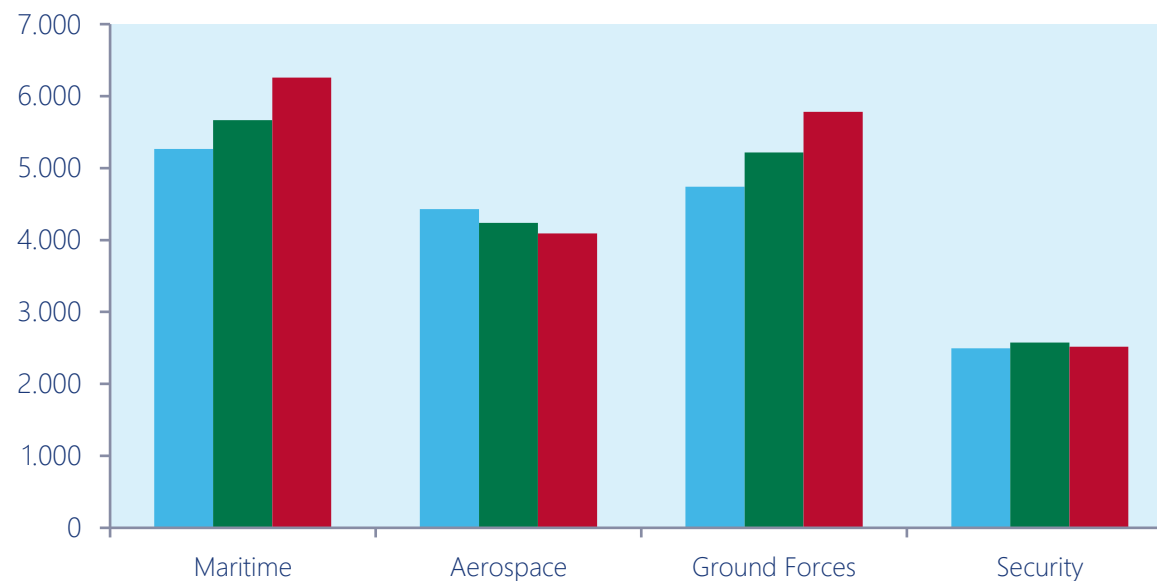


Previous studies NLDTIB

Berenschot research

The number of employees measured in FTEs in the maritime and land domain is growing and is around 6,000 FTEs in 2021.

Number of FTEs in defence and security sector in the Netherlands



Companies classified by dominant domain

2019

2020

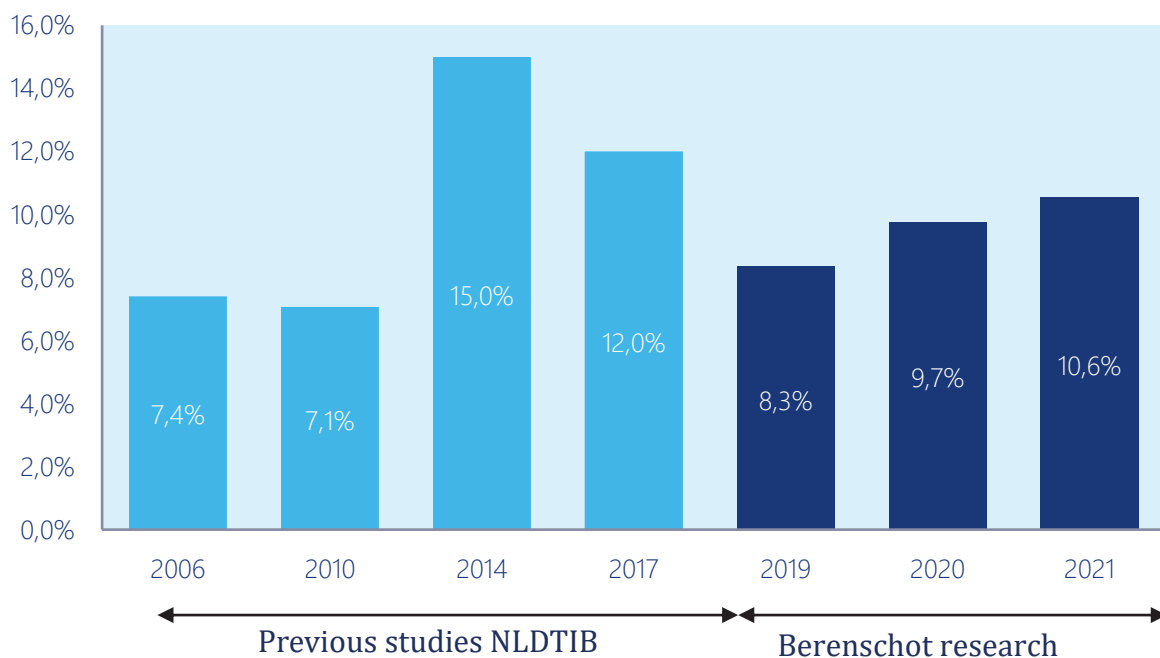
2021

The percentage of turnover in the defence and security sector in Dutch companies is on average 10%

Of the companies that are active in the Dutch defence and security sector, approximately 10% generate turnover from the defence and security sector. The rest of the turnover is generated in other sectors, such as the civil domain.

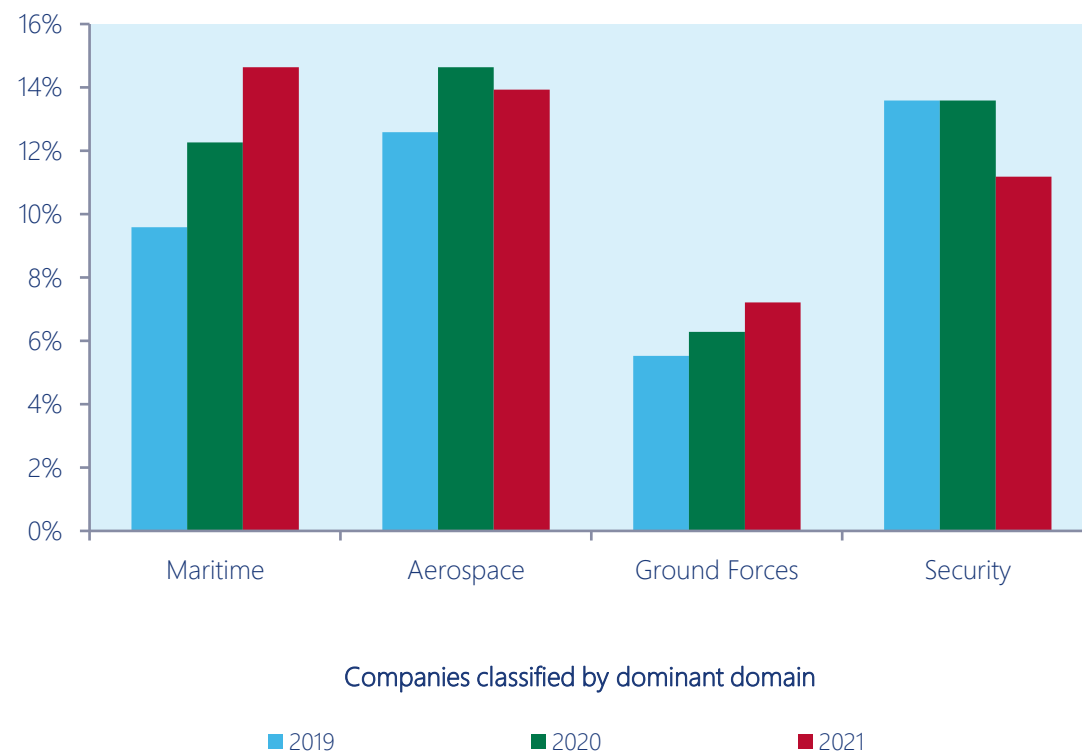
Companies depend only to a limited extent on defence and security turnover. Especially in the land domain the percentage of total turnover is low.

Turnover defence and security sector as % of total Dutch turnover at companies active in NLDTIB



The weighted share of defence and security revenue is shown. Companies with a high revenue are increasingly weighted compared to those with a low revenue.

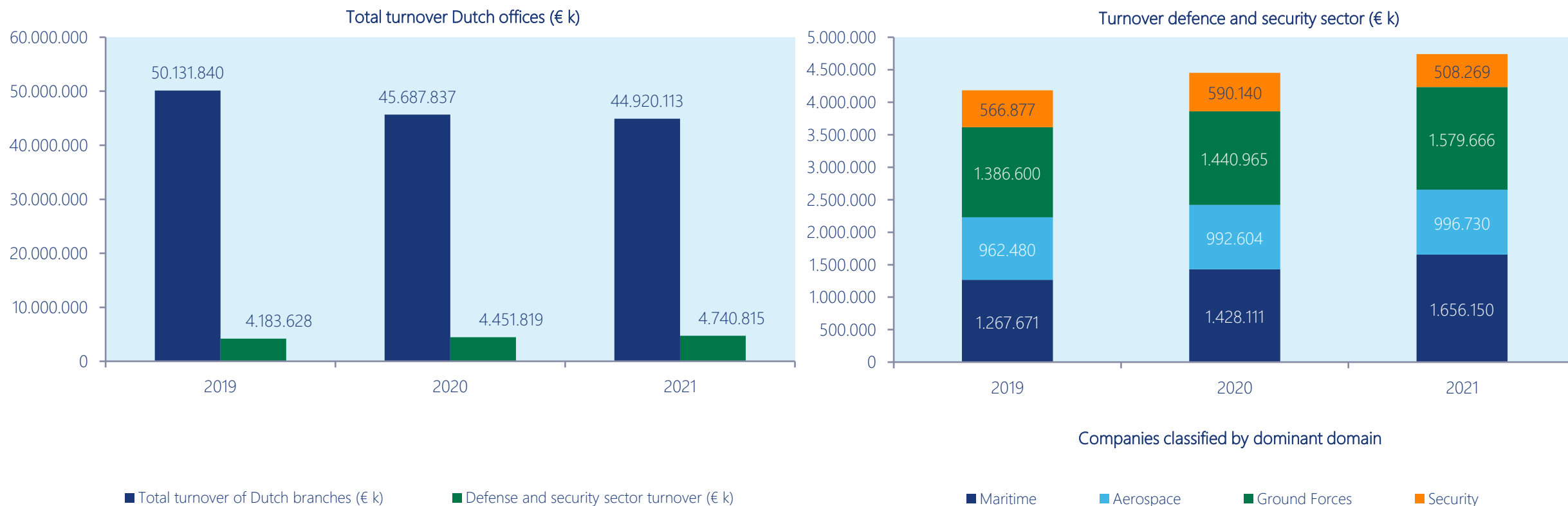
Turnover defence and security sector as % of total Dutch turnover at companies active in NLDTIB



Total turnover is under pressure in 2020, while defence and security sector turnover is stable and increasing

COVID-19 has had a major impact on the overall turnover of companies in the sector. However, turnover from the defence and security sector has increased and thus appears to be countercyclical.

The turnover in 2021 in the defence and security sector is about €5 billion and has increased over the last three years.

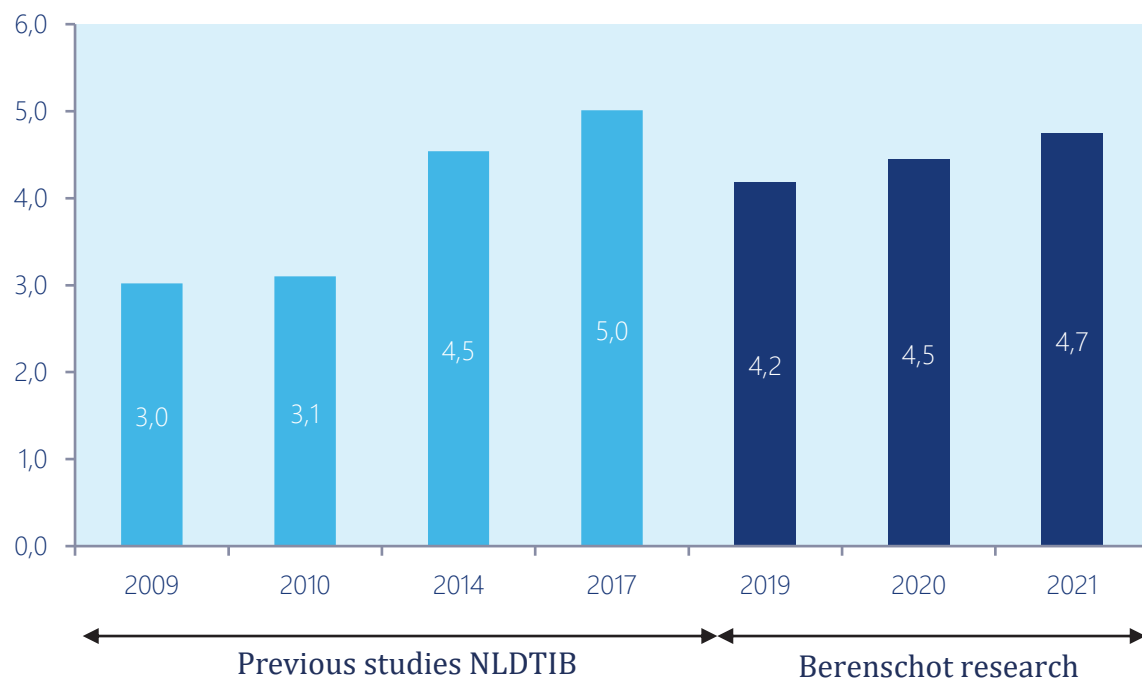


Turnover and added value from the defence and security sector has increased in recent years

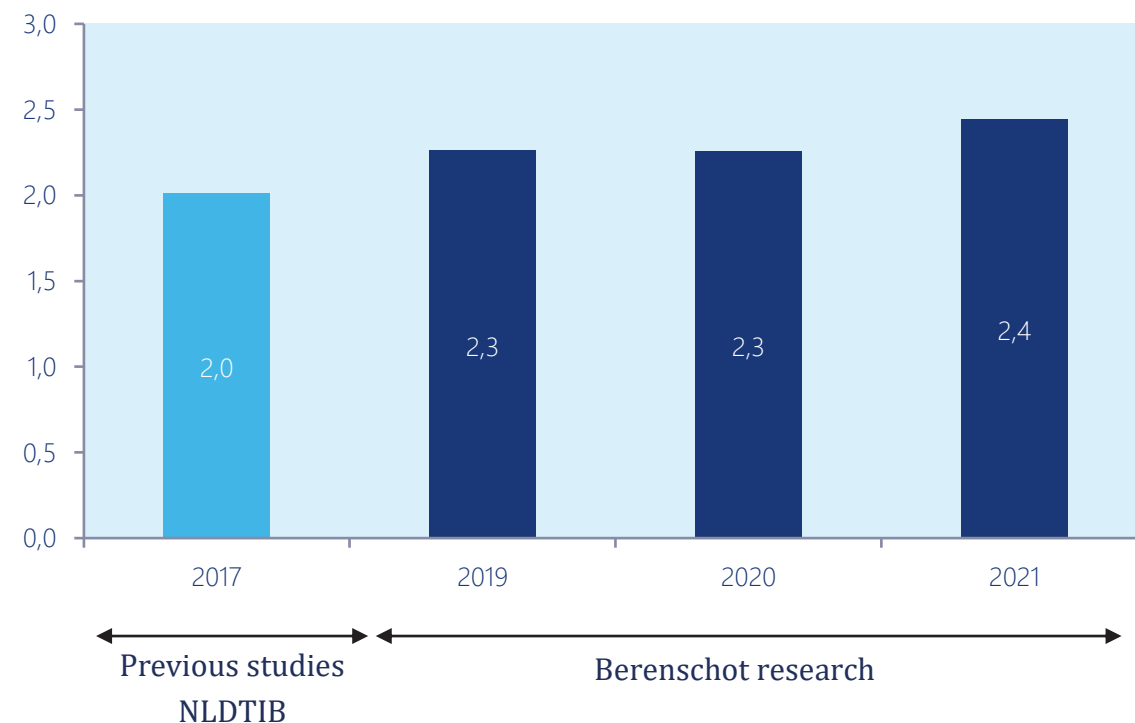
The turnover over the past six years has been stable between €4 and €5 billion. It should be noted that the estimated population varies over the years. The companies also indicate that the distinction between supplying civilian and military products is becoming increasingly blurred. By supplying dual-use products and the IT-cyber domain, it is often not clear whether it is military or not.

Added value is defined as turnover minus work contracted out to third parties, materials and trade products. The added value rose from approximately €2 billion to €2.5 billion. The added value amounts to approximately 50% of the turnover, and the purchase value from Dutch suppliers is approximately €1 billion.

Turnover defence and security sector (€ billion)



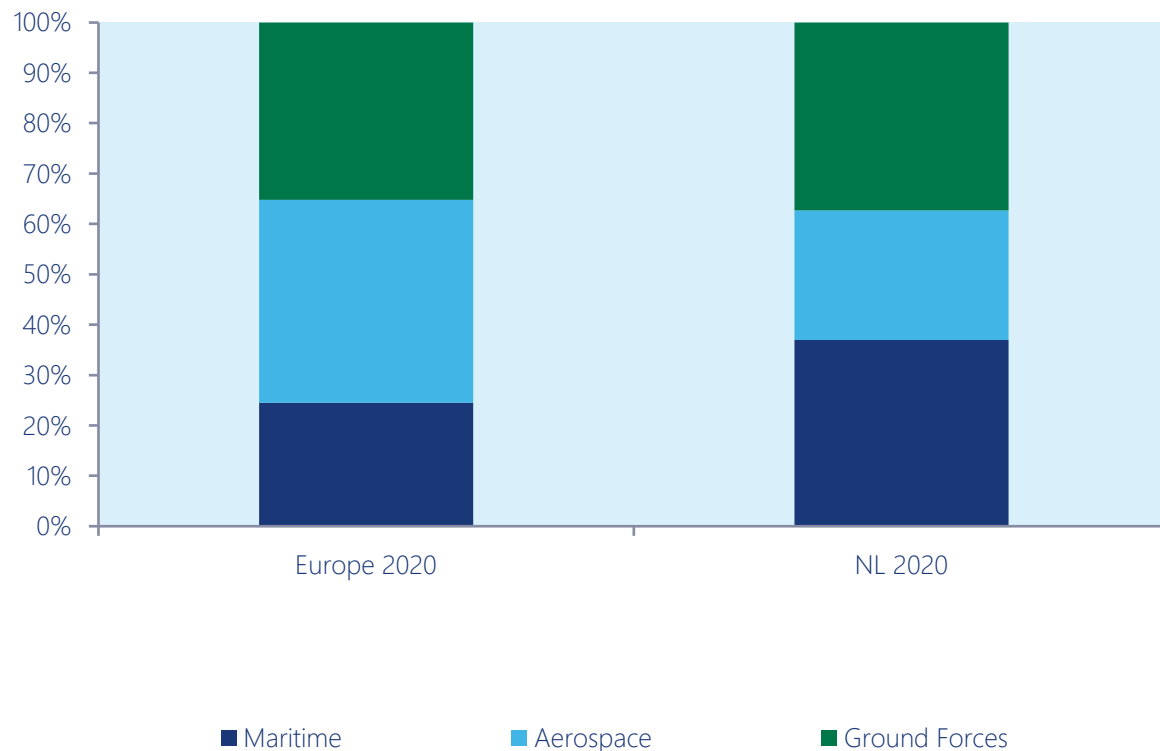
Added value in the Dutch market (€ billion)



The Netherlands' share is about 3% of European turnover

The Netherlands has relatively more turnover in the strong maritime domain and less in the aerospace domain, compared to the European average.

Share of sector Europa compared to the Netherlands



In total Europe spends €119 billion within the defence industry. The export share of the Netherlands in the total European export equals to 4,5% and is higher than the turnover share of 3,2%. The Netherlands exports more (53%) than the European average (38%). The turnover per employee is similar and is 3.3% higher than within Europe.

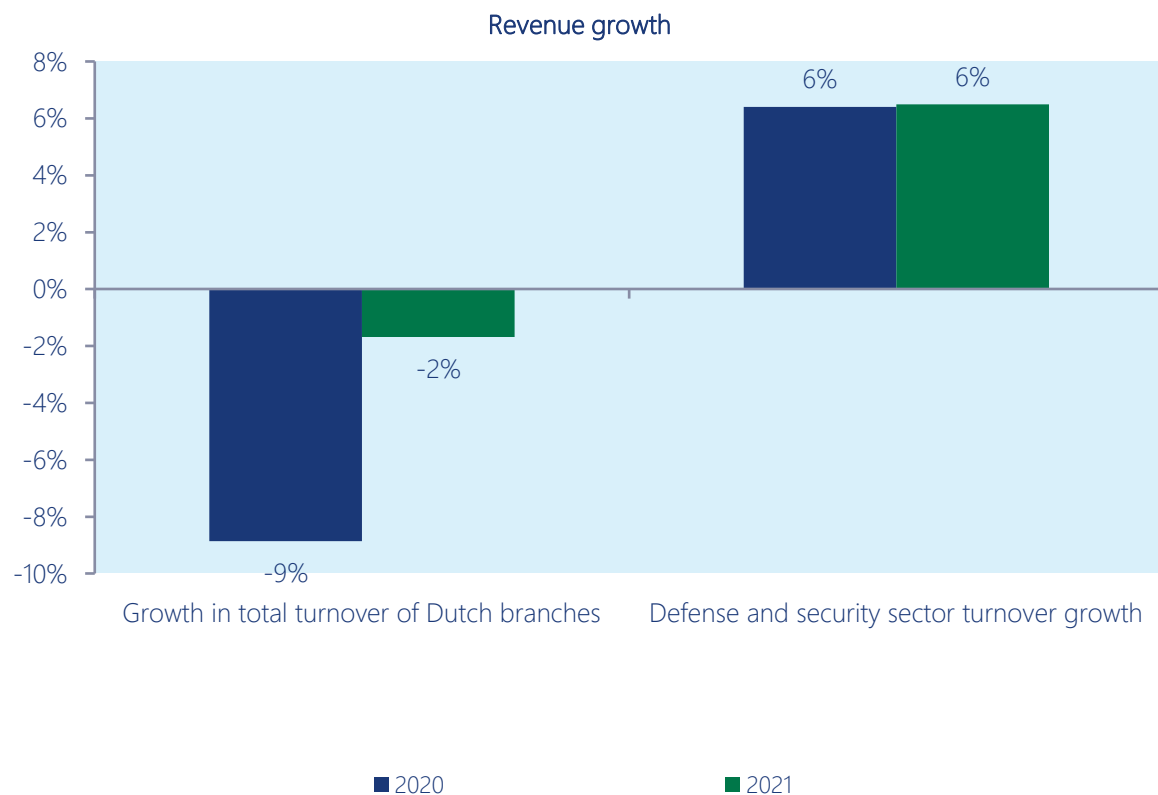
Revenue € k	Europe 2020	Netherlands 2020	NL share of Europe
Maritime	29.200.000	1.428.111	4,9%
Aeronautics and space	47.900.000	992.604	2,1%
Land	41.900.000	1.440.965	3,4%
Total Revenue	119.000.000	3.861.679	3,2%
	Europe 2020	Netherlands 2020	NL share of Europe
Export € k	45.600.000	2.044.591	4,5%
Employment	513.200	16.121	3,1%
	Europe 2020	Netherlands 2020	Difference with Europe
Export share	38%	53%	38,1%
Revenue per fte €k	232	240	3,3%

Source: ASD, Aerospace and Defence industries, facts & figures 2021

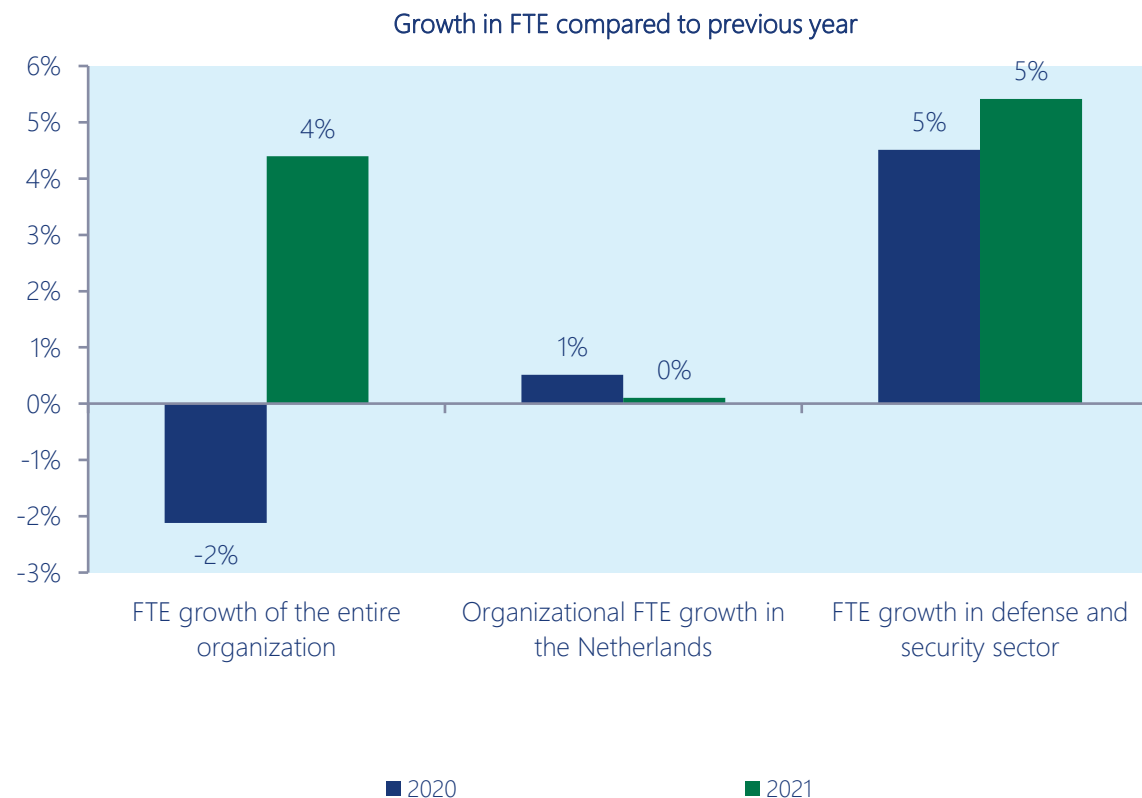
The figures shown exclude turnover from public security, such as police, Europol, AIVD and relevant public investigation and enforcement organisations.

The impact of COVID-19 on the turnover in 2020 is large. The decrease in turnover is compensated by an increase in turnover from NLDTIB

For companies operating in the defence and security sector, we see that the turnover has decreased in 2020 and 2021. However, we do see that turnover from the defence and security sector has increased at these companies.



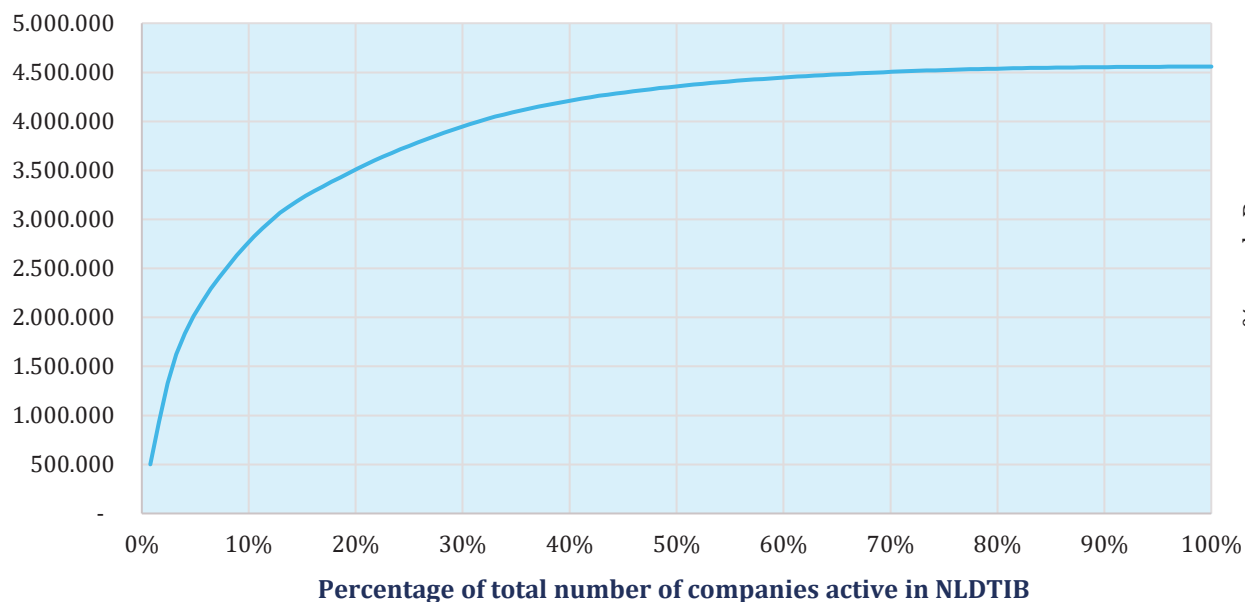
The number of FTEs related to the turnover in the defence and security sector has also increased. There is 5 per cent more staff employed on turnover related to the defence and security sector.



High concentration of turnover in a limited number of large companies

Approximately 20% of the companies have 80% of turnover in the defence and security sector. Thus, the size and scope of the sector is highly dependent on large companies.

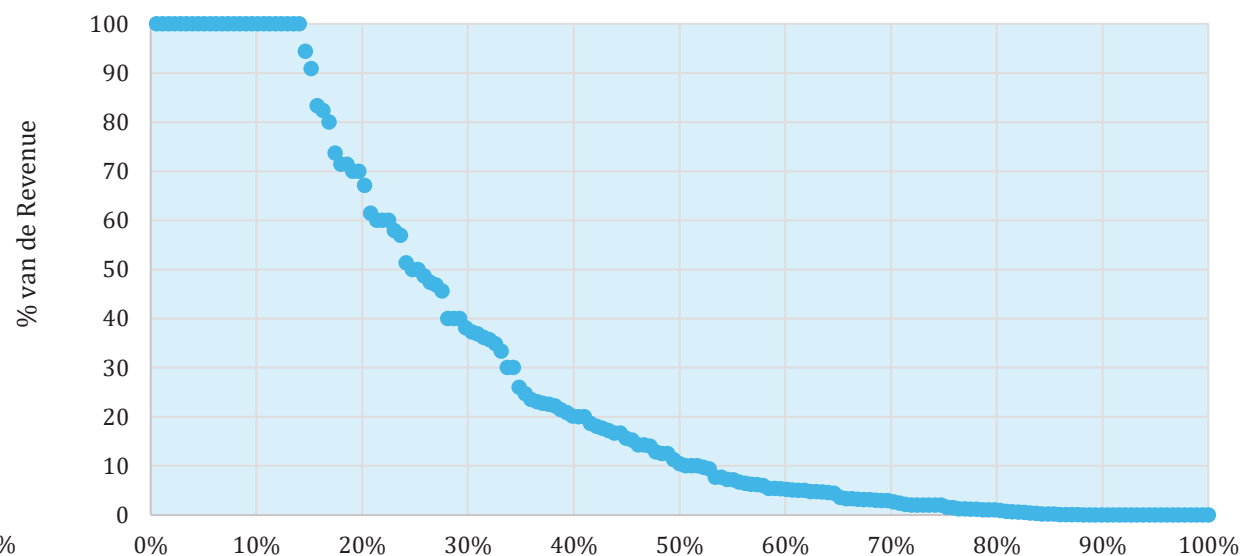
Cumulative turnover from defence and security sector (€ k)



Shown is the weighted share of defense and security turnover. Companies with high turnover count more than companies with low turnover.

Approximately 15% of the companies are fully dependent on the turnover from the defence and security sector. For 20% of the companies, the turnover from the defence and security sector is small. The remaining companies have a mix of turnover from other sectors and the defence and security sector.

Percentage of turnover from defence and security sector of total turnover of surveyed companies in 2021



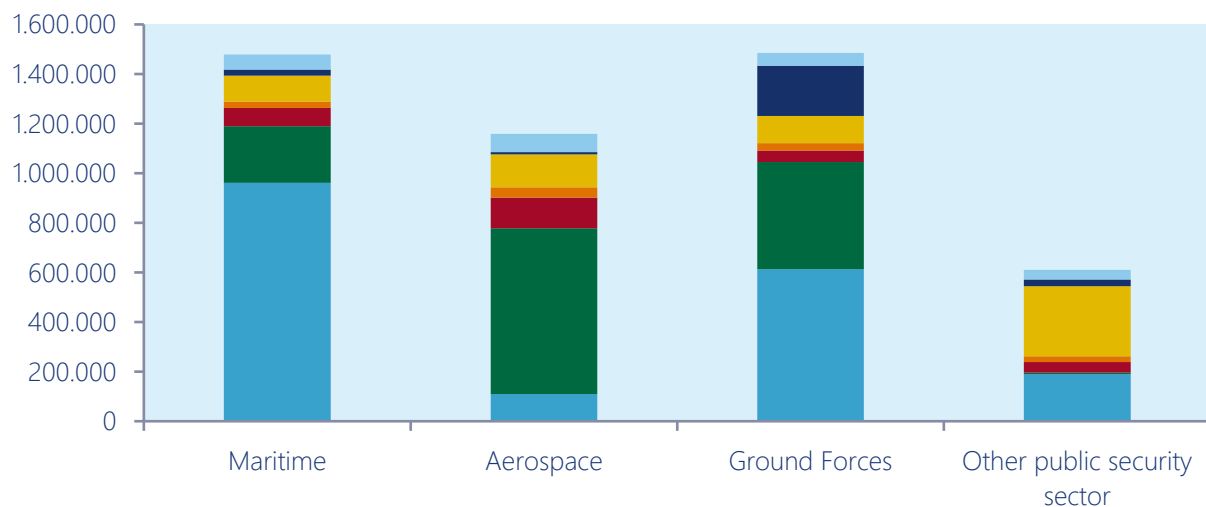
Shown is the unweighted share of turnover.

There is limited cross-fertilisation between domains

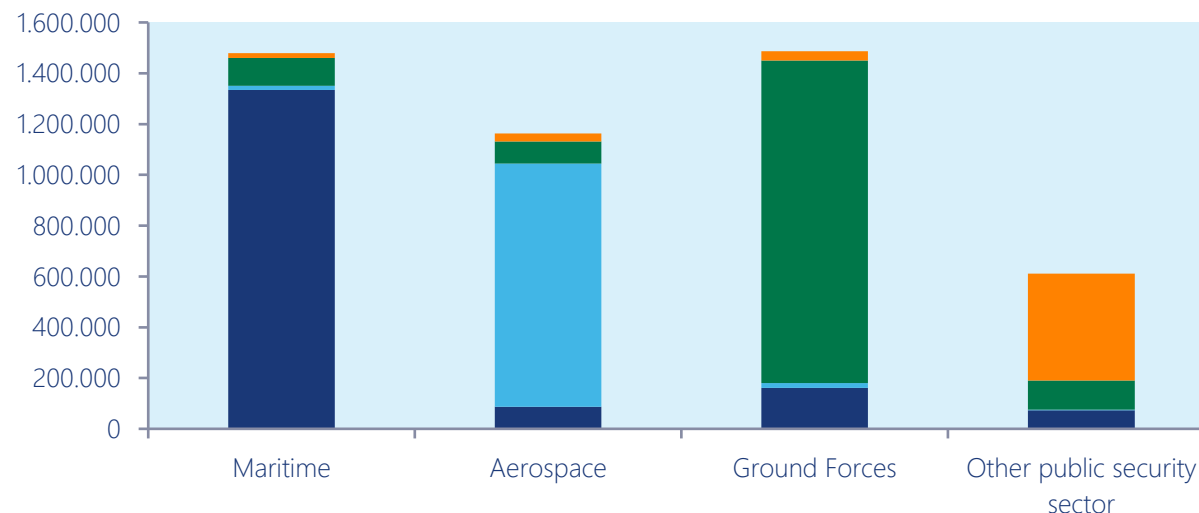
The various domains are equally represented. For land and maritime, a large share of turnover comes from OEMs. Turnover in public safety is lower than in the other domains. Some cyber and IT companies feel that they are not part of the defence and security sector.

Companies only obtain a limited share of their turnover outside their own domain. Activities are therefore specific and focused on one particular domain. Only if the product is generic, we do see that turnover is achieved in more domains.

Total revenue per domain € k



Total revenue per domain €k



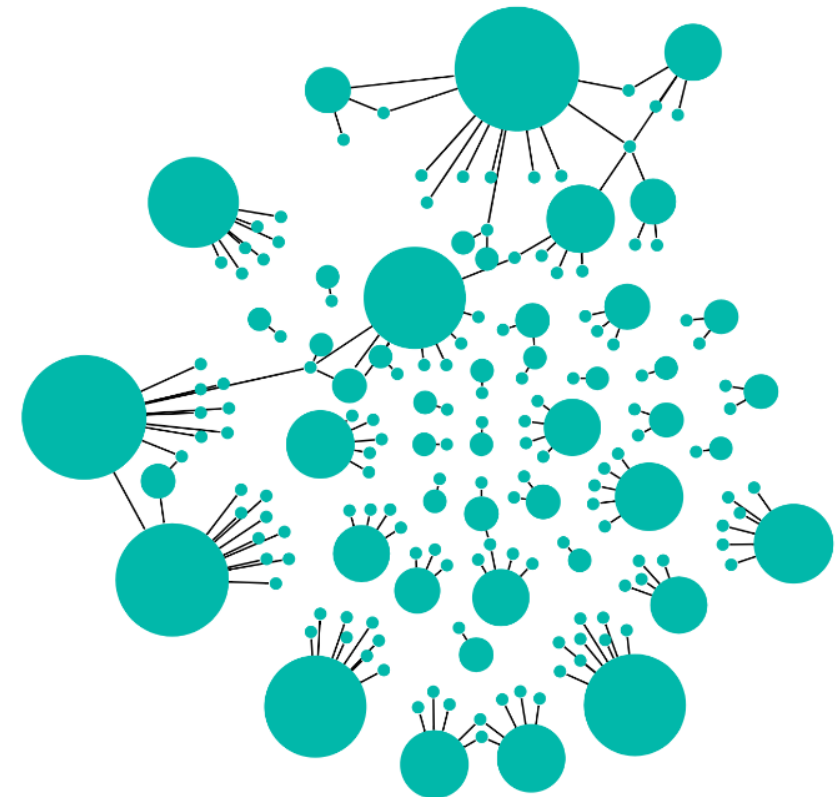
Companies classified by dominant domain

■ OEM ■ Tier 1 ■ Tier 2 ■ Tier 3 ■ Services ■ Value added logistics ■ Research Institute

■ Maritime ■ Aerospace ■ Ground Forces ■ Security

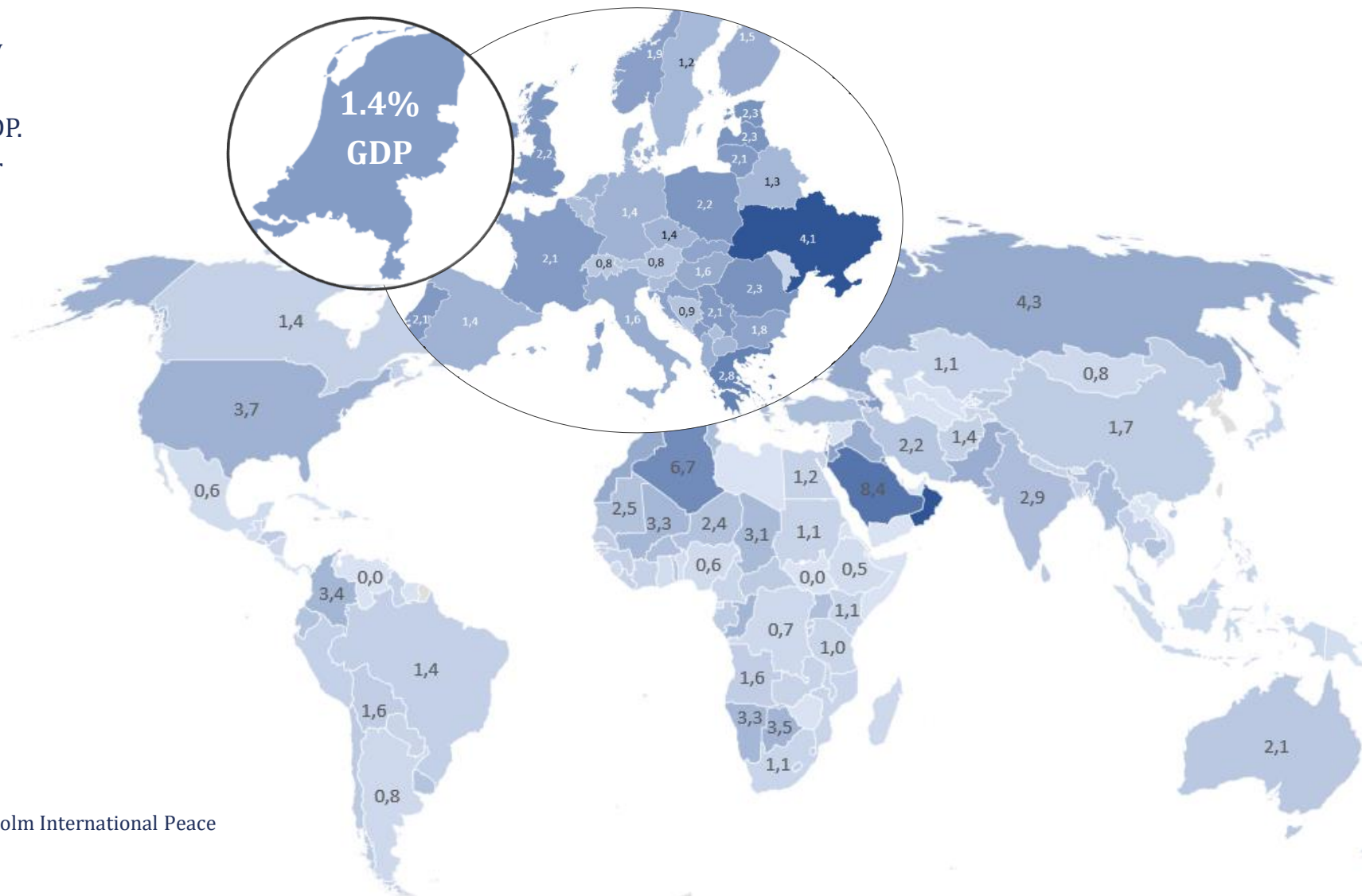
There is limited cross-overs between companies

- We performed a network analysis on the most important suppliers of fifty companies that took part in this survey (see figure on the right). The organisations were asked to indicate their most important suppliers. We found that many organisations have their own chain and that there is little overlap of suppliers.
- Of course, there are examples of successful chains in which dozens of Dutch companies work together, such as in the maritime domain at Damen and in the development, production and maintenance of the F-35. There is a lot of potential in cooperation between domains in ecosystems.
- A possible cause of the limited cross-overs between companies lies in the long lead times of the tendering processes, which makes cooperation more challenging. Some companies want to hedge their currency risk, and therefore buy more from manufacturers that are located in the country where the buyer is based. This leads to less purchasing and cooperation in the Netherlands.
- Defence-related equipment purchases fluctuate greatly from year to year. For small companies, continuity is very important. As a result, there will be less cooperation in the chain.
- The Ministry of Economic Affairs and the Ministry of Defence can stimulate synergy, cluster formation and cooperation in the chain by means of programmes.



Military expenditure as a percentage of GDP by country in 2020

- The Dutch defence expenditure is below the NATO standard of 2%, with a percentage of approximately 1.4% of GDP.
- The percentage in the Netherlands is far below that of the United States and Russia.
- The current geopolitical tensions will lead to increasing pressure when it concerns spending more on defence.



Defence budget will rise sharply in the coming years

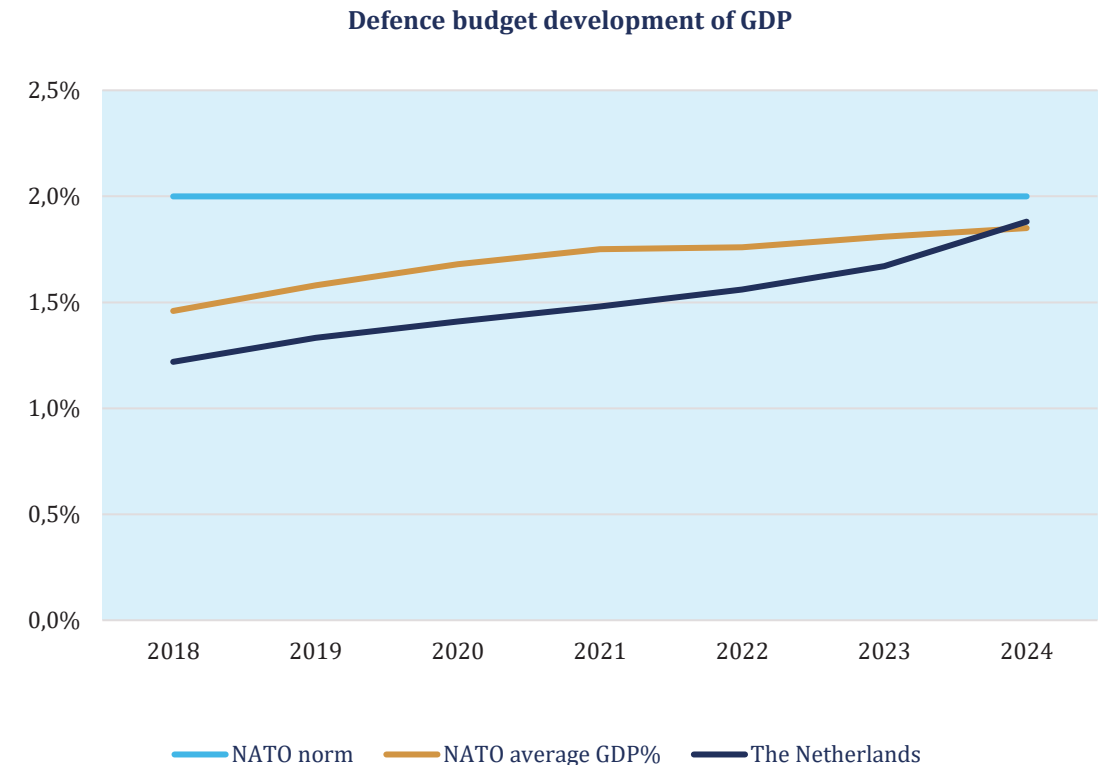
The Ministry of Defence has indicated that it wants to invest strongly. There was insufficient sustainable funding for the maintenance and modernisation of the armed forces. The readiness and deployability of the defence organisation are under pressure, for instance due to shortages in supplies, operational support and shortages in operations.

That is why the emphasis is on:

- increasing readiness and deployability
- increasing maneuverability
- targeted improvement of combat power
- deepening and extending cooperation.

Attention is also paid to the Defence Industrial Strategy. It has been expressed that cooperation with knowledge institutes and the business community will be further deepened and extended by strengthening the (knowledge and innovation of) ecosystems with these parties.

According to current insights, with the increased number of resources the Netherlands will reach the European average of NATO allies of 1.85% GDP in 2024.



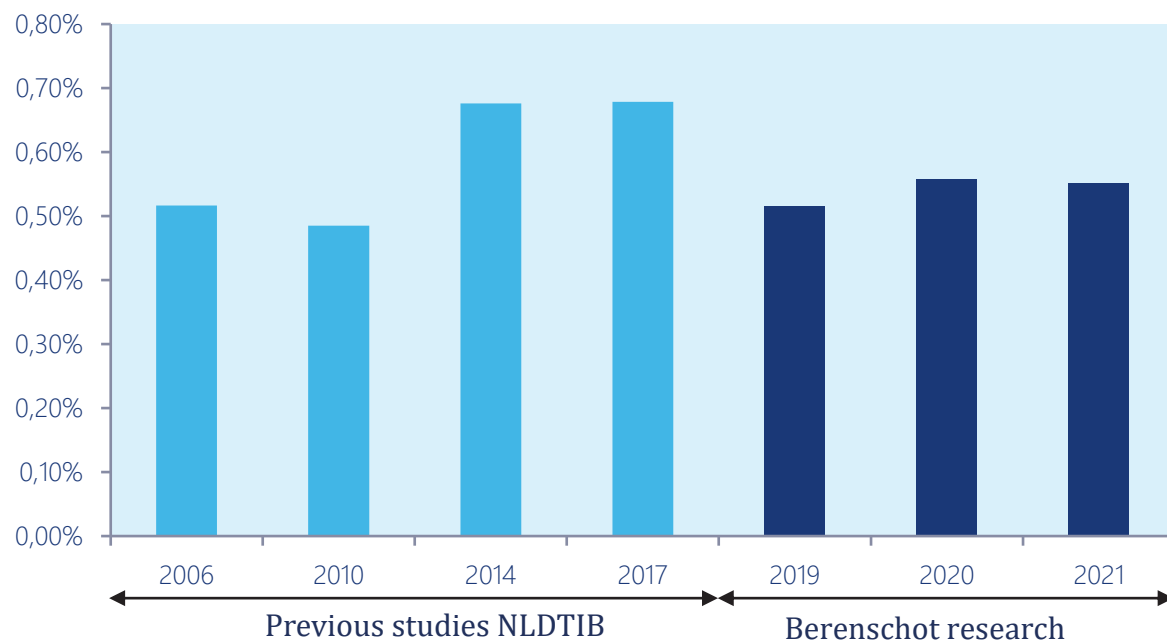
Source: Kamerbrief hoofdlijnen defensiebeleid 11 februari 2022

NLDTIB's turnover as a percentage of GDP, which approximately equals €4.7 billion, is stable; it is also similar to the total expenditure on defence equipment

The total turnover of the defence and security sector in the Netherlands is approximately 0.5% of GDP. The € 4.7 billion turnover is comparable to the share of the Defence Materiel Budget Fund that is allocated to material. The number is balanced over several years.

However, the defence expenditure within the different domains differ from the turnover per domain in the defence and security sector. This is mainly caused by the Ministry of Defence's purchase of the F-35 in the air domain, which the Ministry buys directly from foreign manufacturers.

Turnover of defence and security sector as % of GDP



Defence Materiel Fund budget 2022 per domain € k	B2021	B2022	B2023	B2024	B2025	B2026
Maritime	631.224	576.381	611.850	848.711	905.974	1.178.118
Ground Forces	605.553	666.136	668.438	832.616	827.379	652.482
Aerospace	1.420.232	1.196.398	1.089.750	1.136.912	1.084.409	855.897
Defence broad	669.194	983.034	917.895	847.753	856.704	846.033
Infrastructure	684.927	851.402	826.380	622.464	616.757	564.761
IT	599.169	792.011	757.491	520.428	516.386	499.688
Total	4.610.299	5.065.362	4.871.804	4.808.884	4.807.609	4.596.979

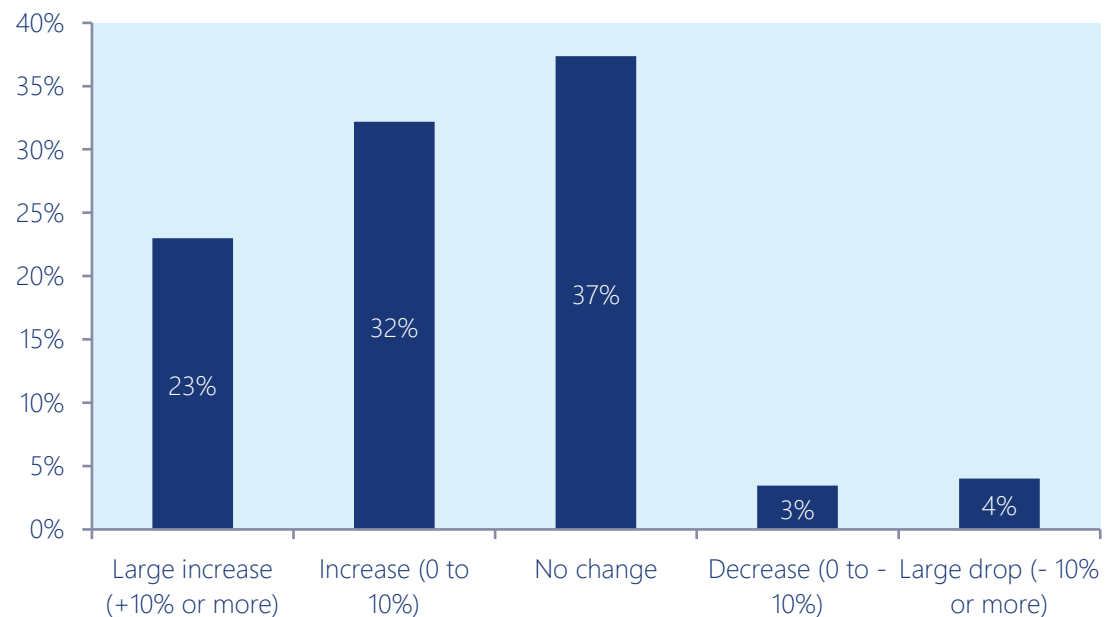
Source: Establishment of the Defence Materiel Budget Fund (K) for the year 2022

High growth expectations regarding turnover and number of employees in the sector

Approximately 55% of the organisations expect growth. Geopolitical tensions will further strengthen growth expectations.

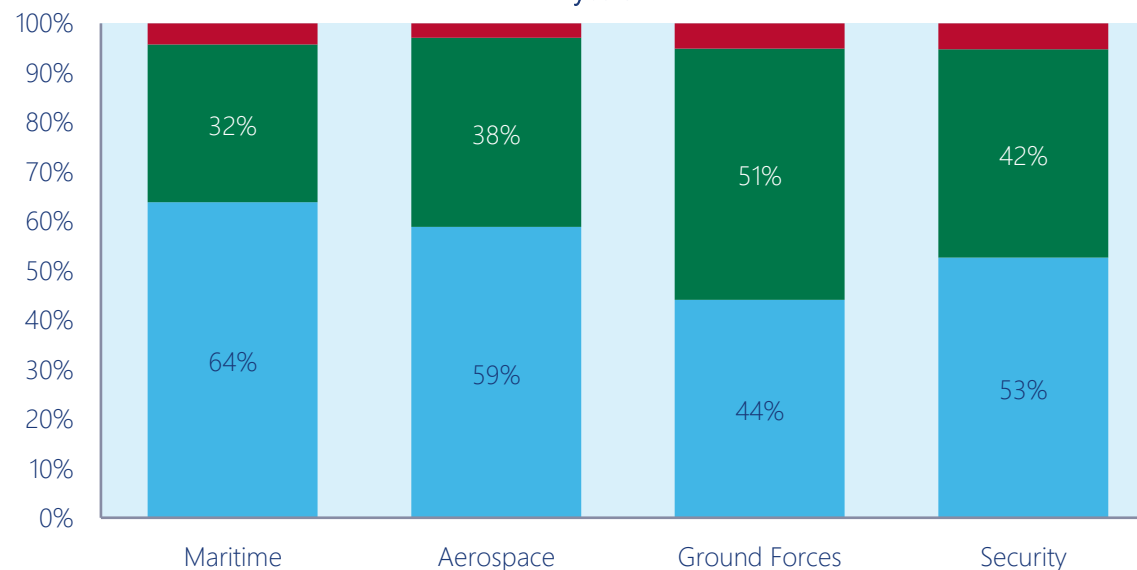
There are high growth expectations, especially in the maritime domain.

Expected changes in turnover
of the defence and security sector in 2022



Percentage of the number of holdings, unweighted average

Forecast of the number of jobs in the defence and security sector in the next two years



Companies classified by dominant domain

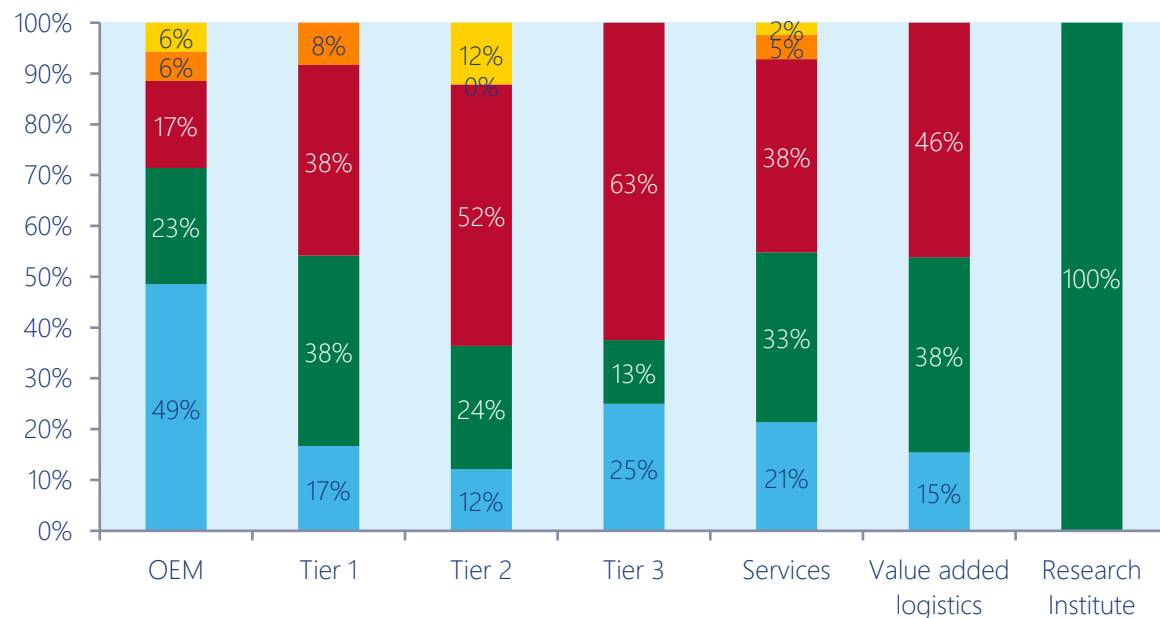
■ Increase ■ Stable ■ Decline

In particular OEMs expect growth in turnover

We see growth particularly among OEMs, but reluctance further down the chain.

Growth is particularly seen in smaller and larger organisations.

Expected turnover in 2022



Large increase (+10% or more) Increase (0 to 10%) No change

Decrease (0 to -10%) Large decrease (-10% or more)

Expected turnover in 2022

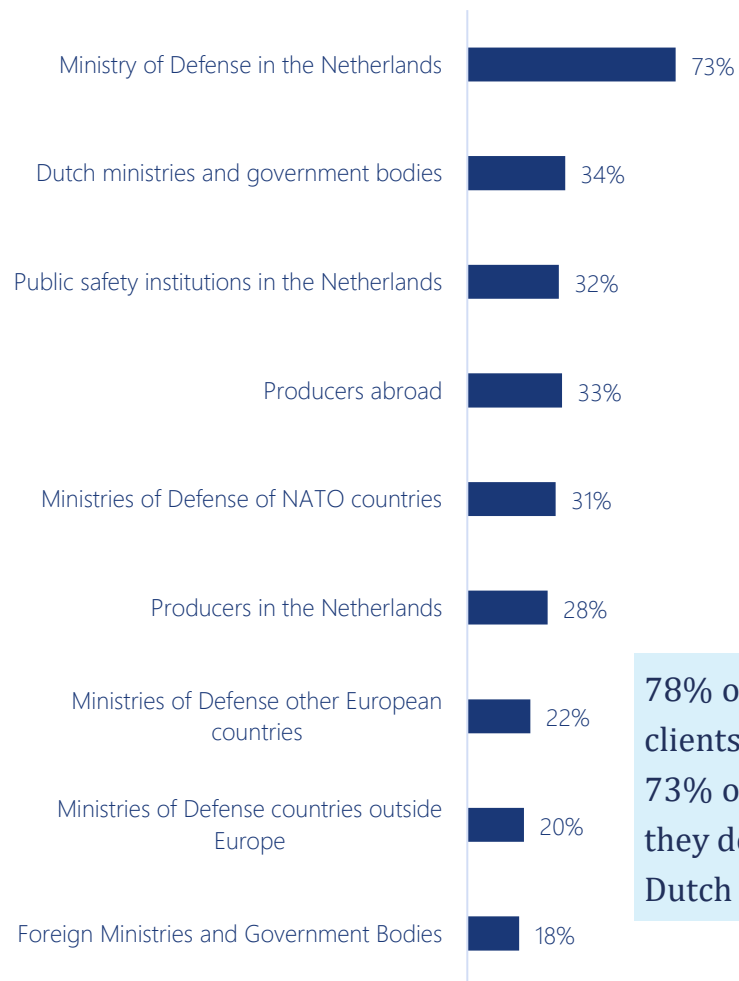


Large increase (+10% or more) Increase (0 to 10%) No change

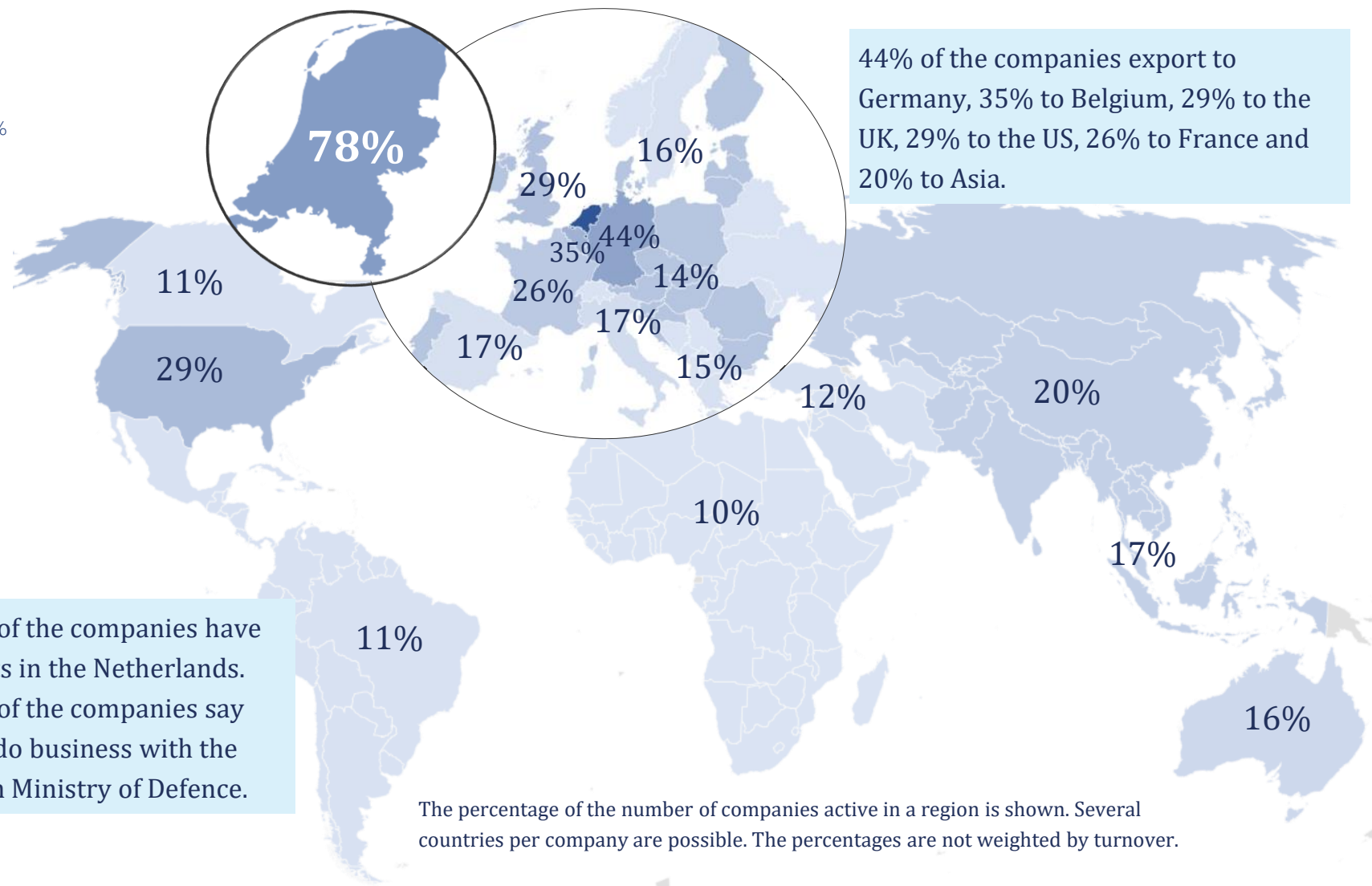
Decrease (0 to -10%) Large decrease (-10% or more)

Major markets: defence and security very international

The most important customers:



78% of the companies have clients in the Netherlands.
73% of the companies say they do business with the Dutch Ministry of Defence.

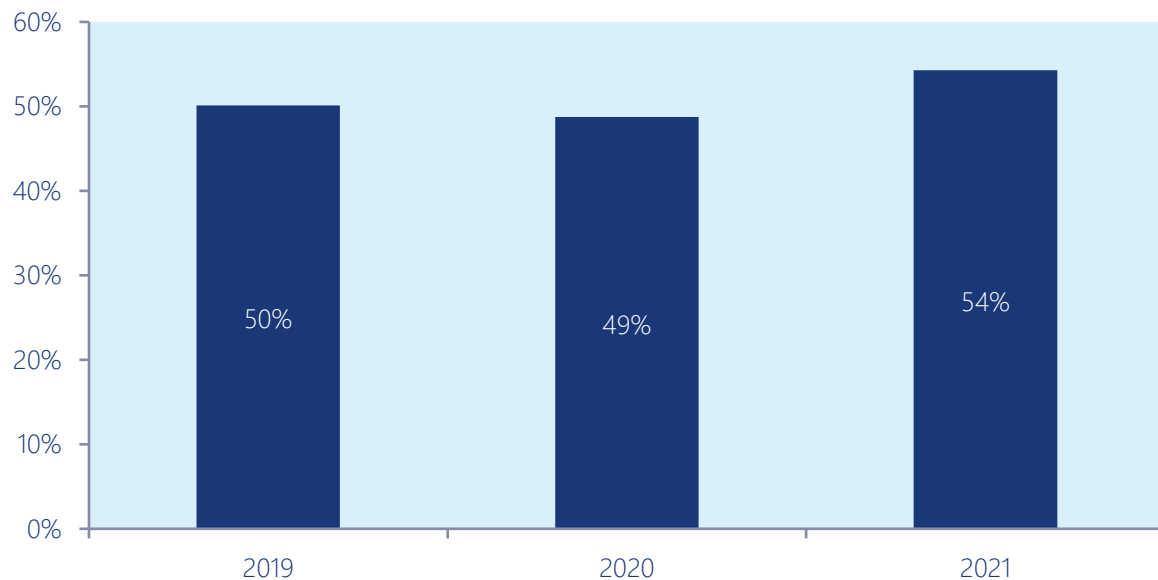


Export share of revenue is high and share is increasing

The defence and security market has a strong international focus. More than half of its turnover is generated by exports.

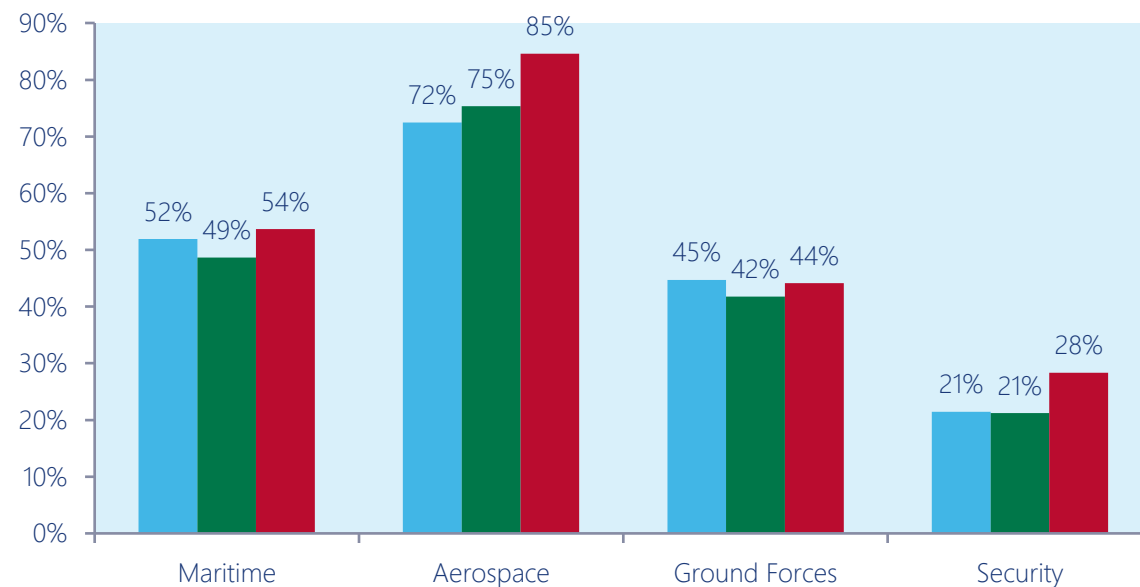
In particular the aerospace industry is more export-oriented, while the public safety industry is to a much smaller extent. The export share increases particularly in the aerospace industry.

Share of exports in turnover of Dutch establishments



€ K Export	2019	2020	2021
Export revenue	2.097.314	2.169.674	2.573.416

Share of exports in turnover of Dutch establishments



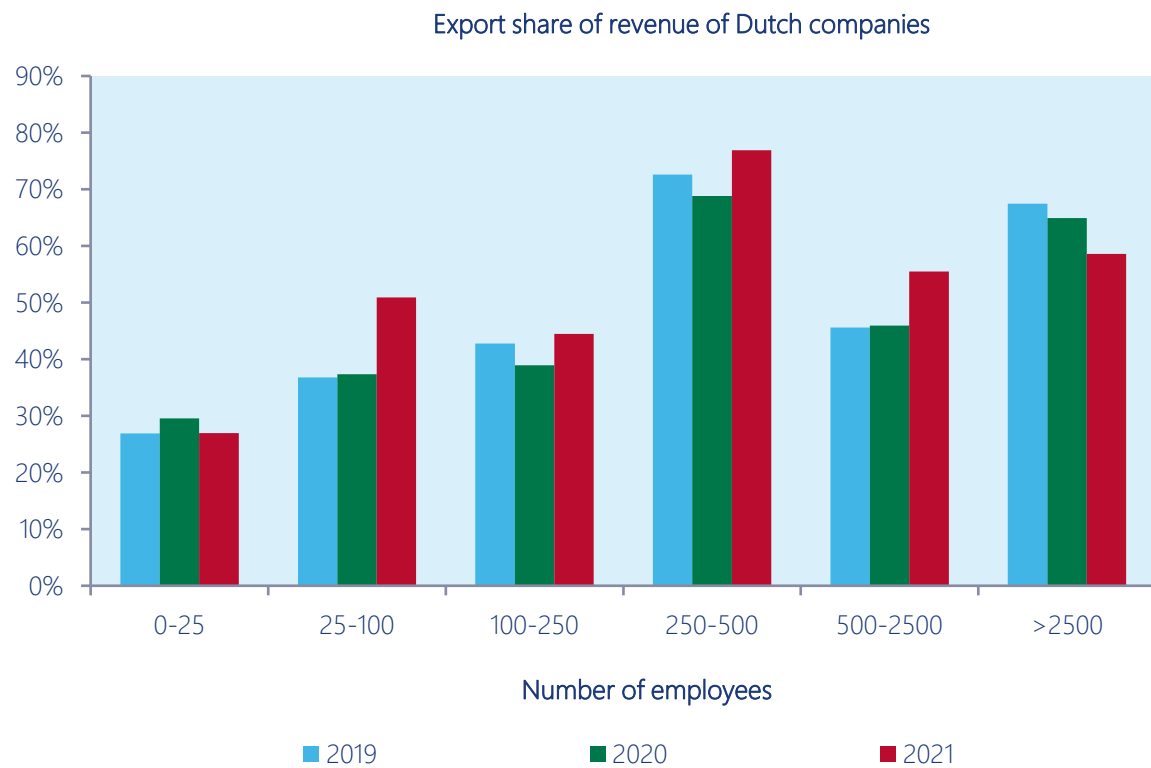
Companies classified by dominant domain

■ 2019 ■ 2020 ■ 2021

Weighted on average by total defence turnover, so large companies weigh more heavily than smaller ones

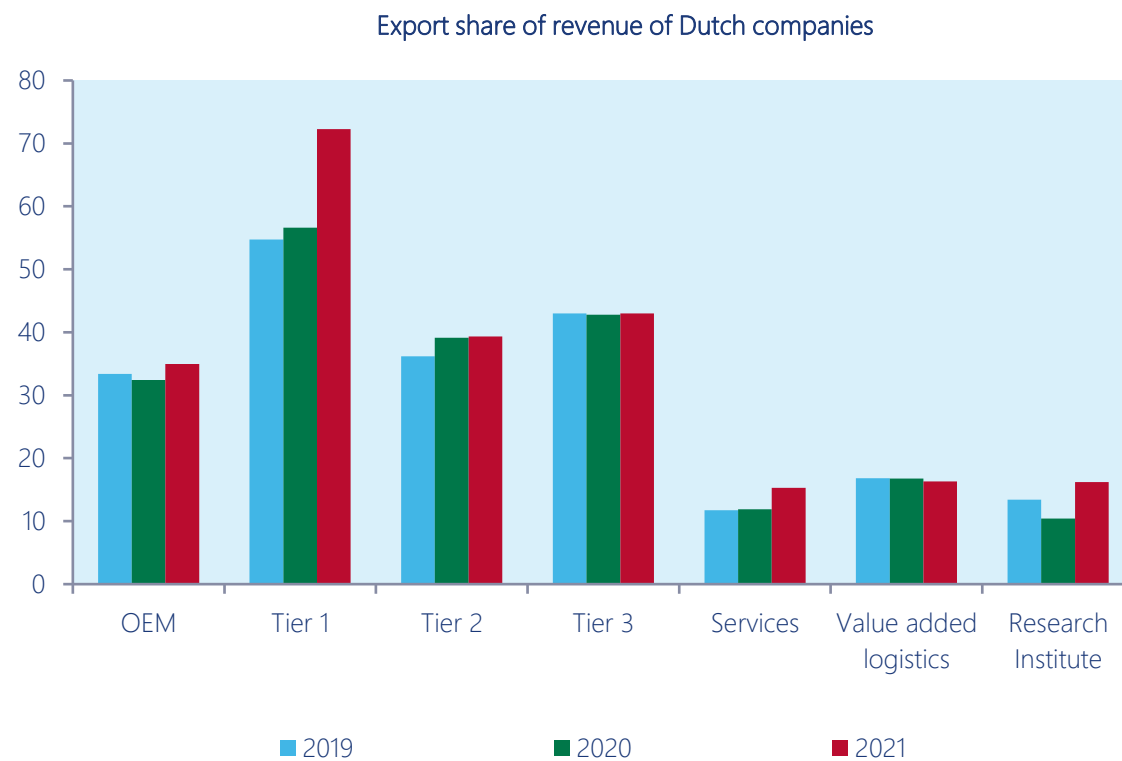
Export share of revenue of Dutch companies

In particular, there is more export at larger organizations. Smaller organizations only export to a limited extent.



Weighted on average with the total defense revenue, so large companies weigh more heavily than smaller companies

Tier 1 suppliers export more. This is due to some large companies that fall within this group. Companies in the services and trade sectors are less active internationally.



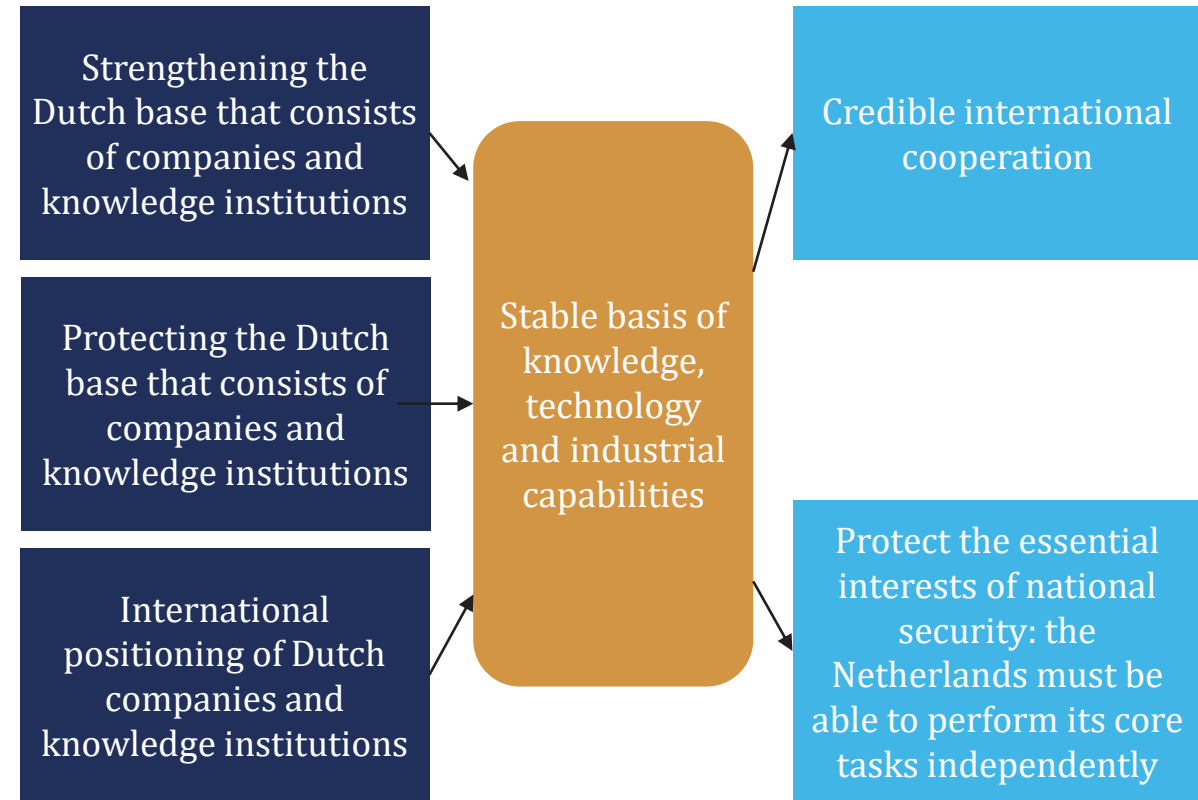
Weighted on average with the total defense revenue, so large companies weigh more heavily than smaller companies

Defence Industry Strategy: where should the Netherlands be relevant in?

- Interviews show that the DIS is appreciated. However, it was indicated that it should be more concrete, and interviewees also find that the DIS (as a strategic document) should be further operationalised in programmes.
- A major issue is maintaining continuity in the activities and innovations at market parties. The fluctuations over the years are experienced as difficult in this respect.
- The DIS is certainly not seen as a roadmap for individual companies or as a guideline for investments in R&D.
- Companies do not see the DIS sufficiently reflected in tenders, joint developments, etc.

"There needs to be an interdepartmental strategy in cooperation with the Ministry of Economic Affairs, otherwise knowledge will drain away and we will lose out to other countries."

"Do what is said in the DIS?"



"The operationalisation of the DIS could be improved: what does it mean for my business?"

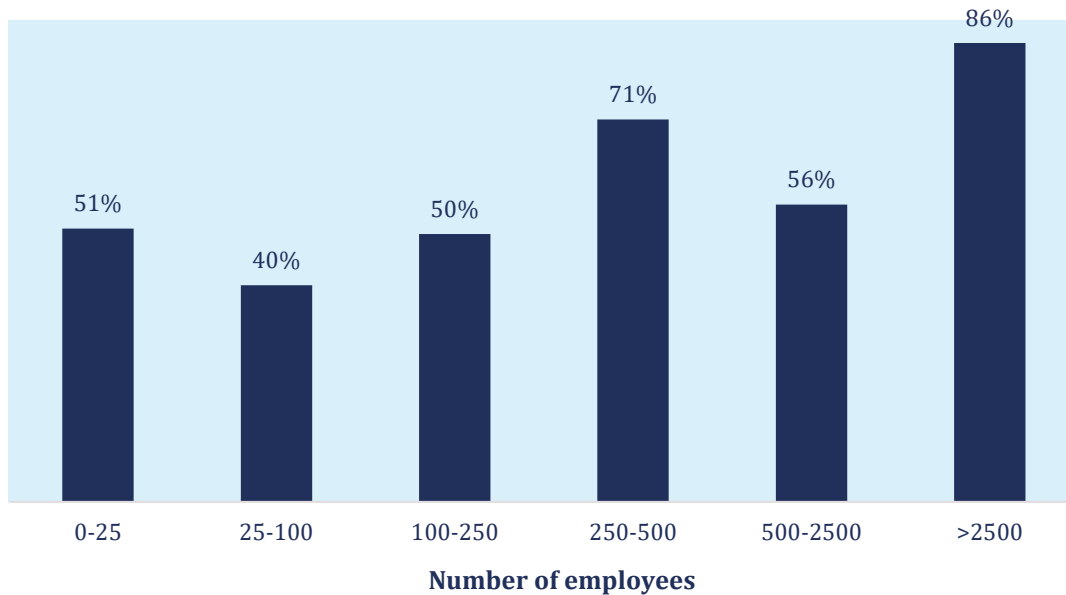
Source: quotes from participating companies

52% of the companies are familiar with the Defence Industry Strategy

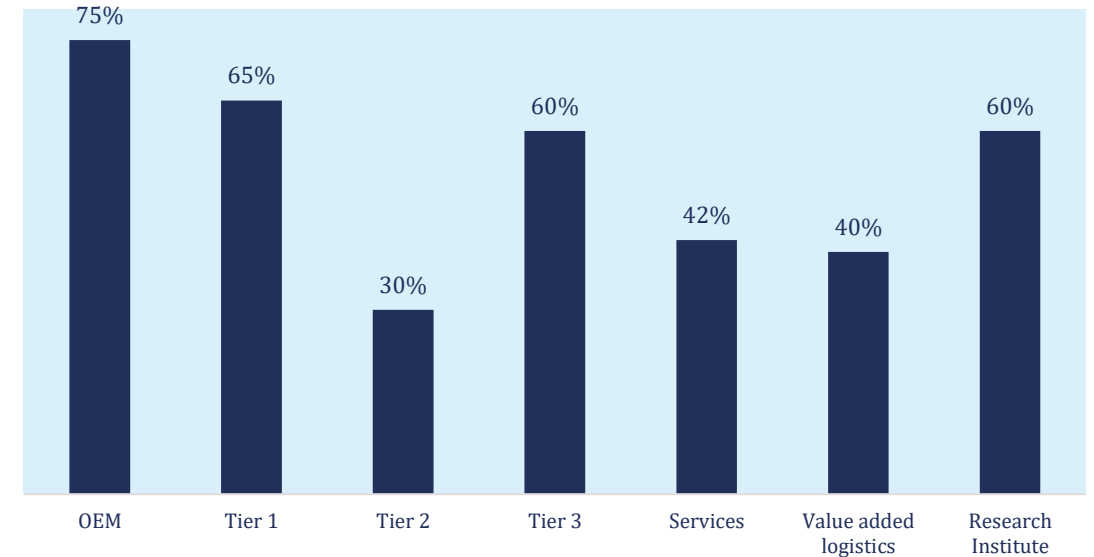
On average, 52% of the companies indicate that they are familiar with the DIS. This means that a large share does not know about the DIS. This is particularly the case with smaller companies. Small companies miss the connection and correct interpretation of the DIS. In particular, recognition and access to orders / procurement trajectories is a major bottleneck. They experience that there is a great focus on the existing large companies.

Large companies are familiar with the DIS, and they are predominantly positive. However, they do not experience sufficient translation into practices in the field, such as with the procurement policy or the defence budget.

Percentage of number of participating companies familiar with the Defense Industry Strategy

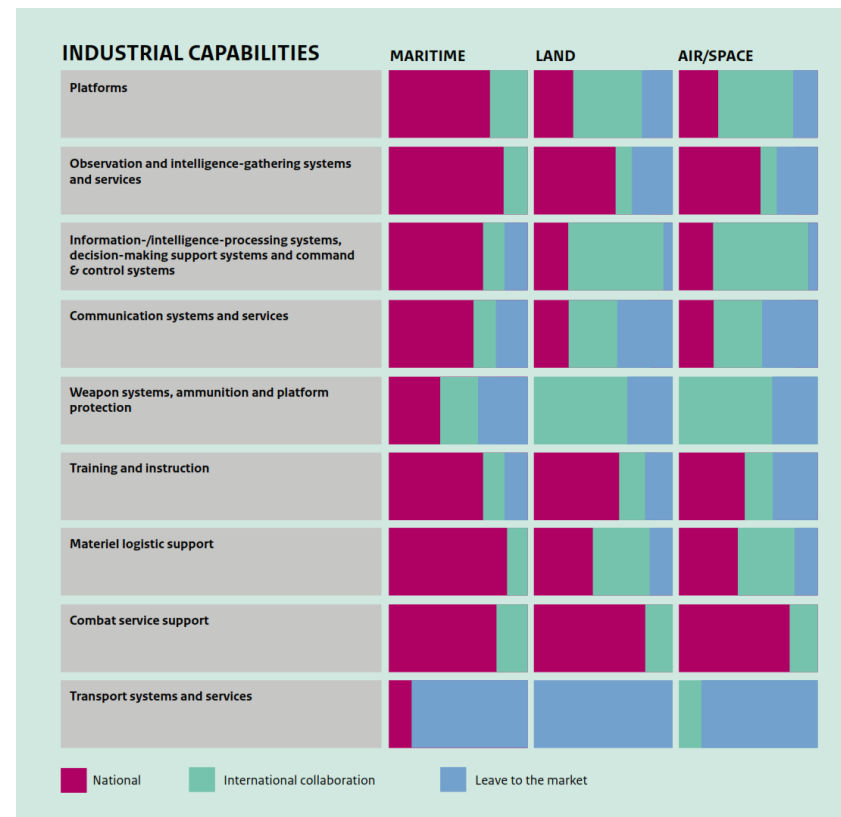
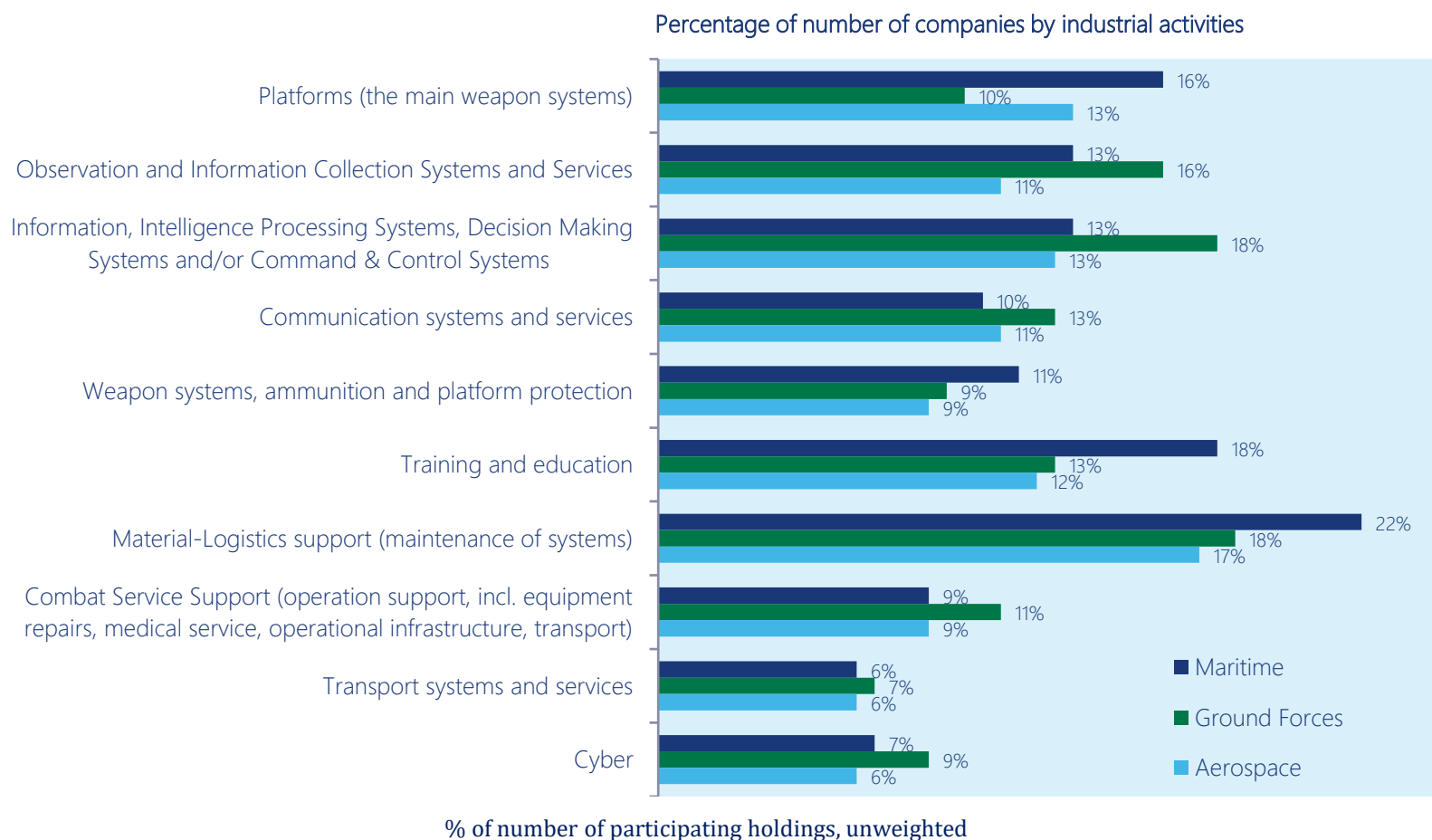


Percentage of number of participating companies familiar with the Defense Industry Strategy



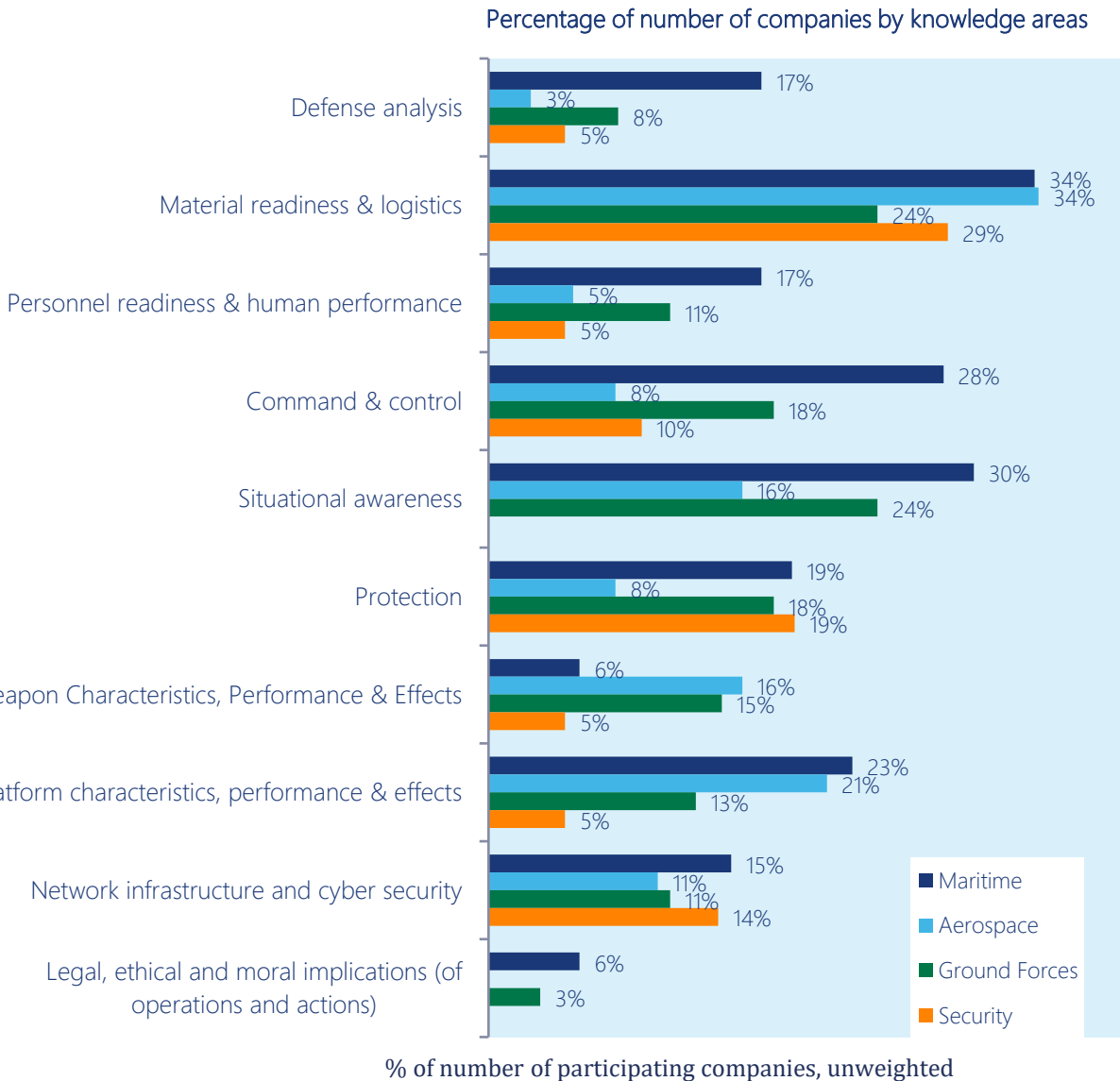
Position in the Defence Industry Strategy

- The DIS expressed the Netherlands' ambition in terms of the industrial capabilities required to protect essential security interests. The participating organisations have indicated where their activities are located.
- All capabilities are mentioned; to compare them with the DIS, more research is needed.



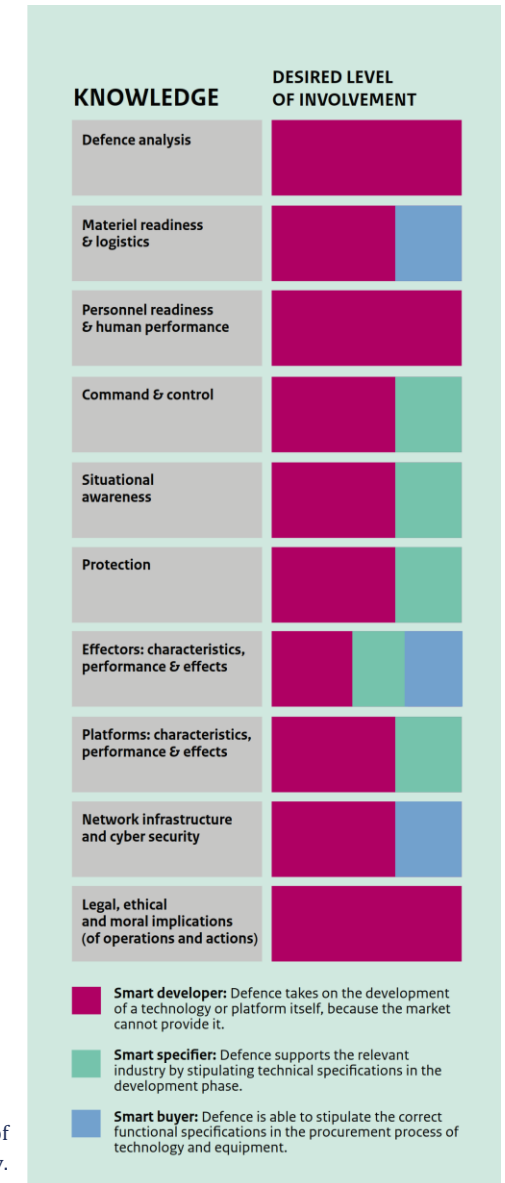
Source: Ministry of Economic Affairs and Climate Change, Ministry of defence (2018), Defence Industry Strategy.

Focus on material readiness & logistics for all domains



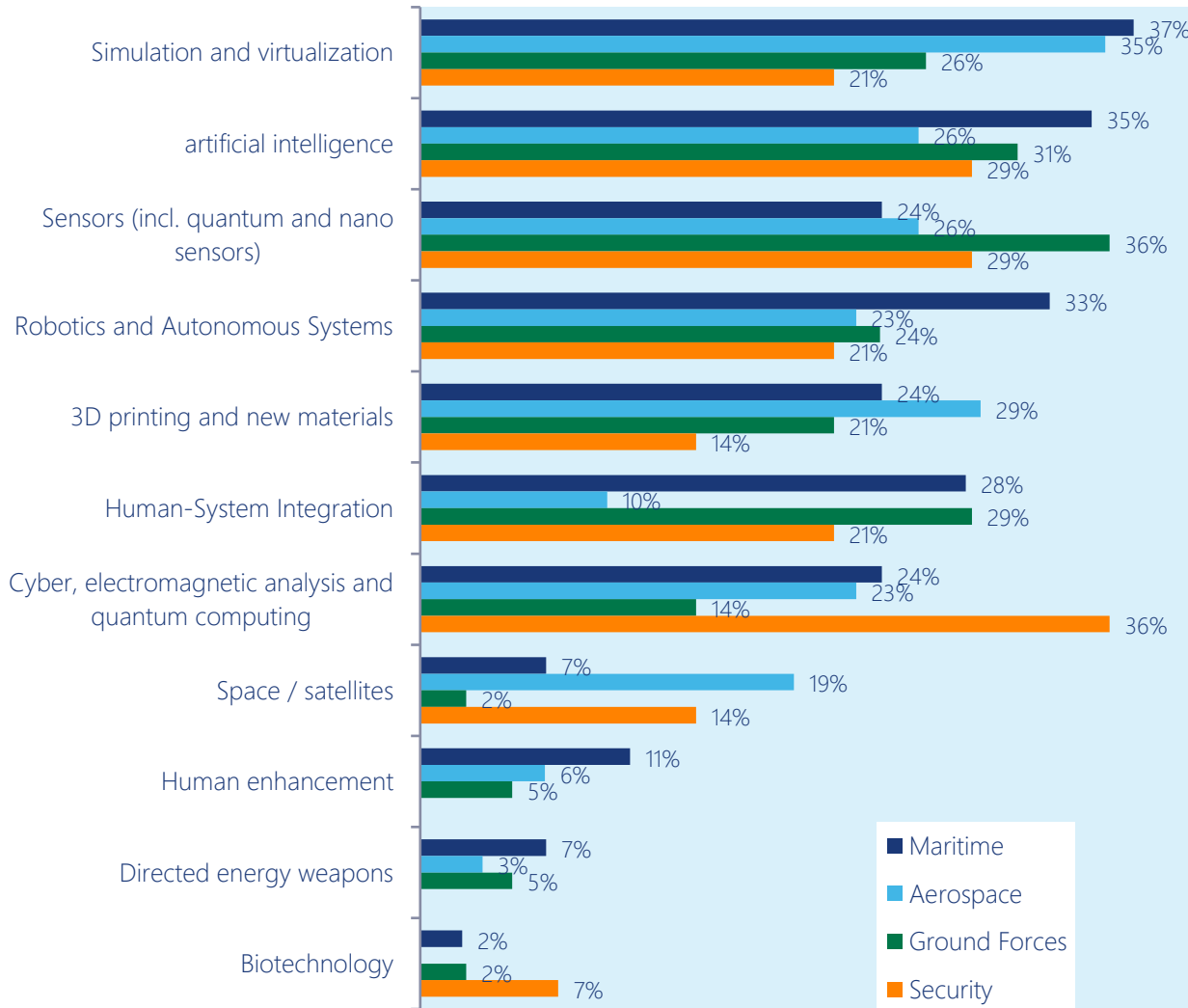
- The DIS shows where the Netherlands wants to continue to engage in military knowledge development.
- Virtually all knowledge areas are represented in all domains (except one), and in all cases by several companies.
- Only the knowledge area 'Legal, ethical, and moral implications' is mentioned to a very limited extent. This is mainly dealt with by the Ministry of Defence itself.
- Materiel readiness & logistics is the field most frequently mentioned by the participating companies as an important knowledge area.

Source: Ministry of Economic Affairs and Climate Change, Ministry of defence (2018), Defence Industry Strategy.



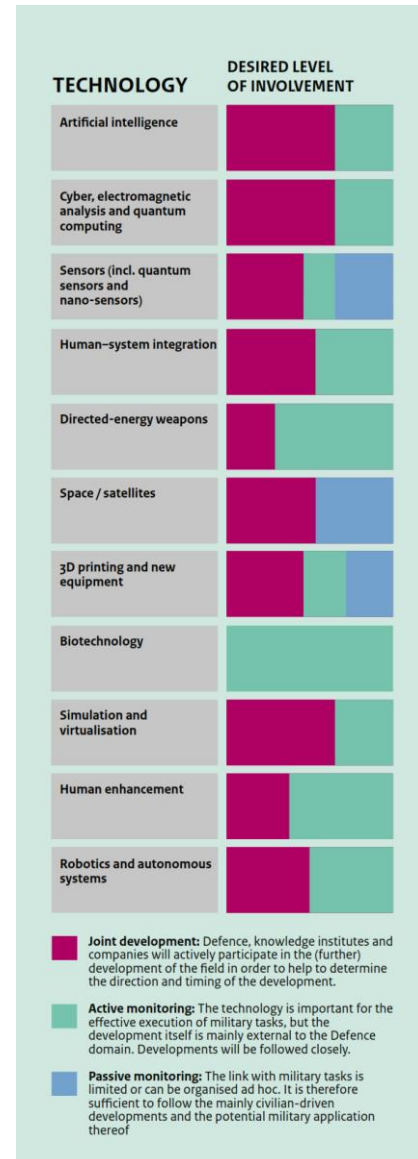
Simulation, AI and Sensing are the main themes

Percentage of companies that will actively invest by 2022



% of number of participating companies, unweighted

- All technology areas are represented in all domains and, except in a few cases, also in a large number of companies.
- In a number of technology areas, the Ministry of Defence wants to actively develop the technology itself because it is important for the performance of military tasks.
- Approximately one third of the companies indicate that they actively invest in technology-related themes. However, there are clear differences in emphasis per domain.
- The land domain is particularly active in sensing, the air domain in simulations and 3D, the maritime domain in simulations, AI and Robotics, and the Security domain in cyber.
- Four areas are mentioned less often: Space, Human enhancement, Directed energy weapons and Biotechnology. These are also areas that often lie outside the defence domain.



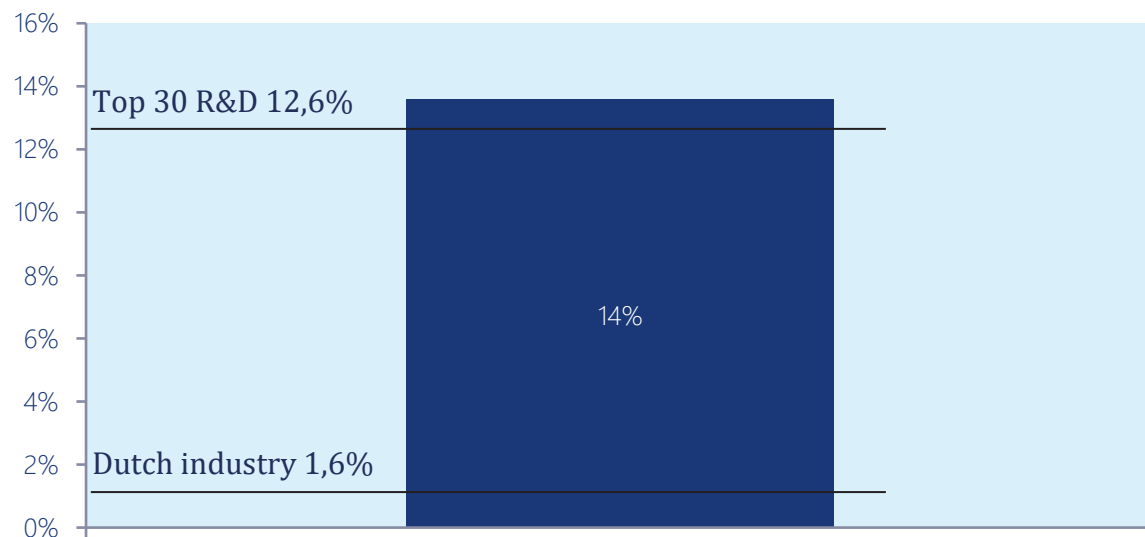
Source: Ministry of Economic Affairs and Climate Change, Ministry of defence (2018), Defence Industry Strategy.

The R&D budget averages 14% of turnover, and is particularly high among OEMs

The percentage of R&D expenditure in relation to turnover is higher at companies in the defence and security sector compared to the percentage at the top 30 R&D companies* in the Netherlands.

OEMs, in particular, invest heavily in R&D.

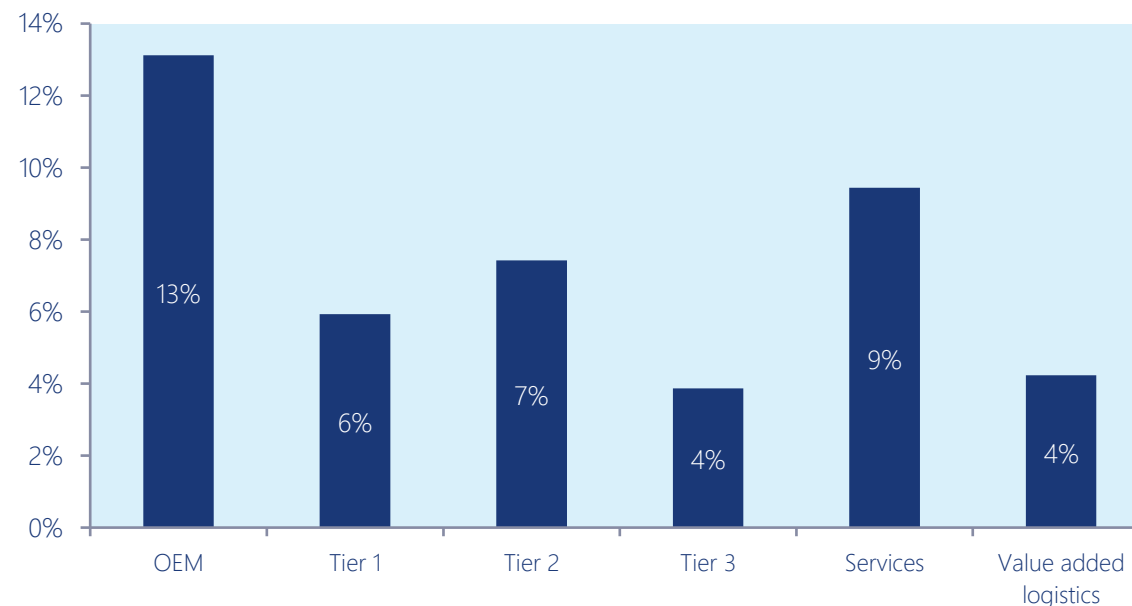
Percentage of turnover invested in R&D and innovation



Displayed is the R&D spending percentage (compared to revenue) of the participating companies, weighted by the defence and security turnover. The total R&D budget includes R&D performed by the knowledge institutes and R&D performed on behalf of customers.

* Source: Technisch Weekblad 2021. CBS

Percentage of turnover invested in R&D and innovation

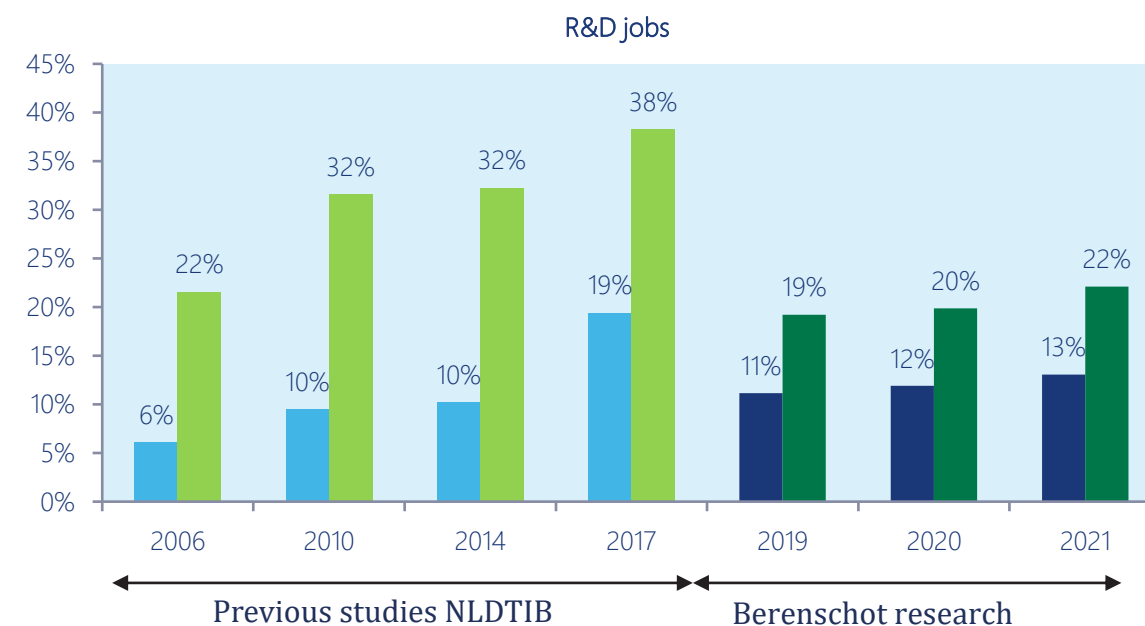
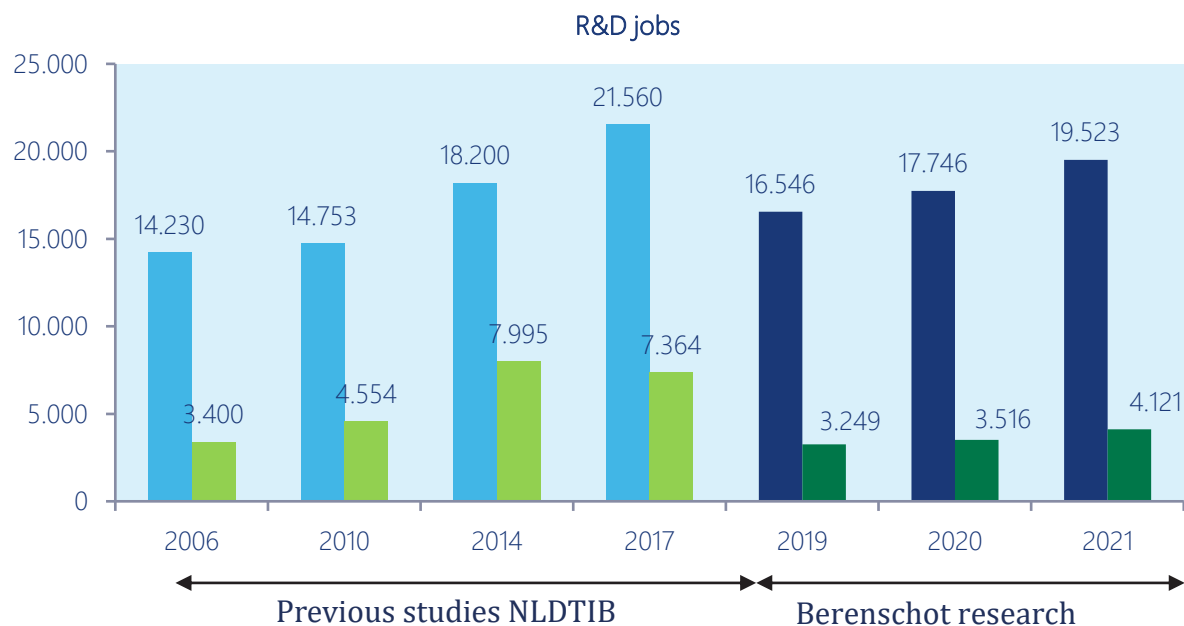


What is shown excludes knowledge institutes, that spend almost their entire budget on R&D.

The defence and security sector is knowledge intensive

Companies operating in the defence and security sector are more R&D intensive than the average company in the Netherlands. The R&D jobs shown include those at knowledge institutes such as TNO, Marin and NLR. The R&D jobs at knowledge institutes have not been extrapolated and only count towards their own figures. As a result, the R&D jobs are lower than in previous years.

Among the companies, the percentage of R&D working in the field of defence and security (22%) is also higher than in the rest of the organisation (13%). However, it should be noted that with regard to dual-use products the distinction between military and non-military can hardly be made within R&D.



■ Total number of FTEs in the Netherlands focused on R&D ■ Number of FTEs R&D defense and security sector

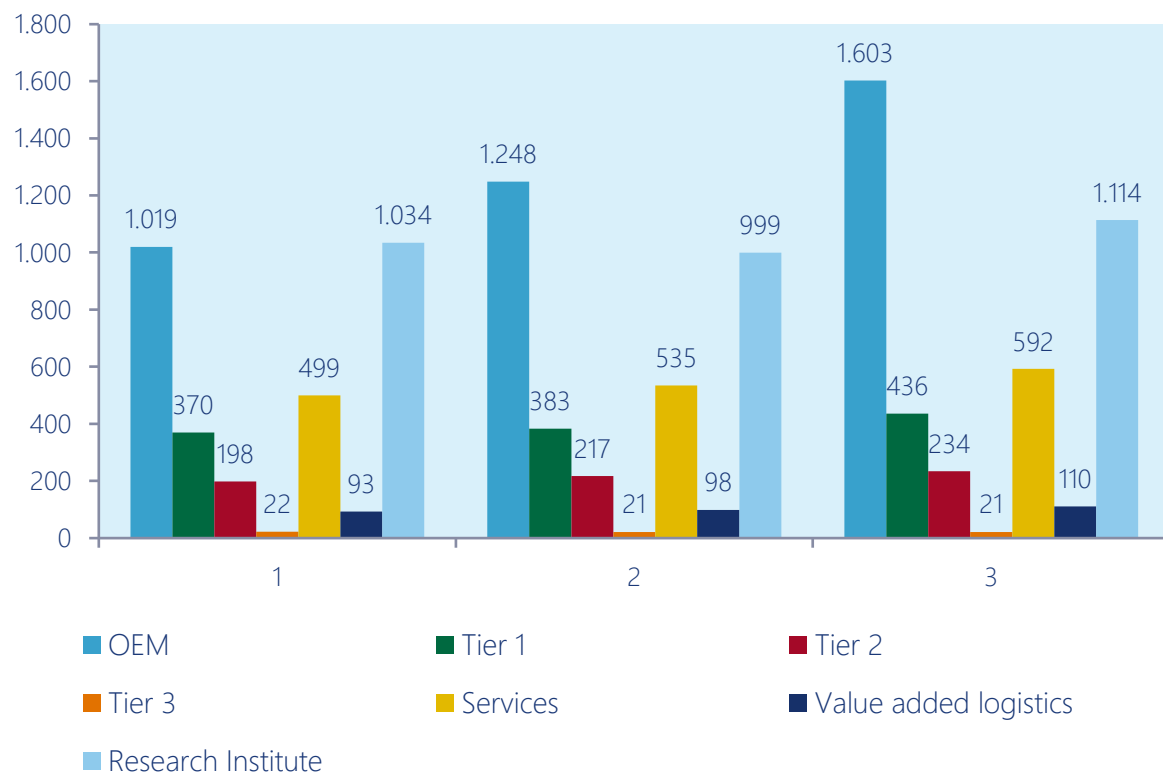
■ % R&D jobs of total organization ■ % R&D of FTE defense and security sector

R&D personnel mainly present in OEMs and knowledge institutes, and less numerous further down the chain

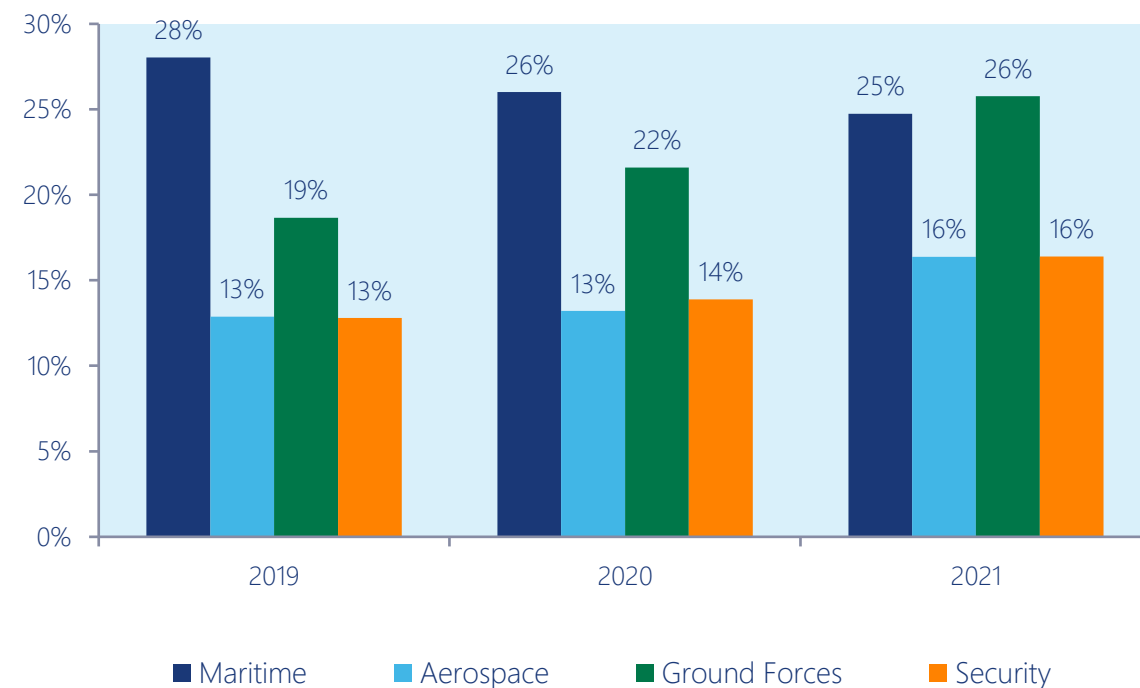
There is a large increase in the number of FTEs working in R&D positions between 2019 and 2021, particularly in OEMs.

The percentage of FTEs working in an R&D function in comparison to the total workforce is particularly high among the companies that are classified into the domains of maritime and land.

The number of R&D jobs employed within the defence and security sector

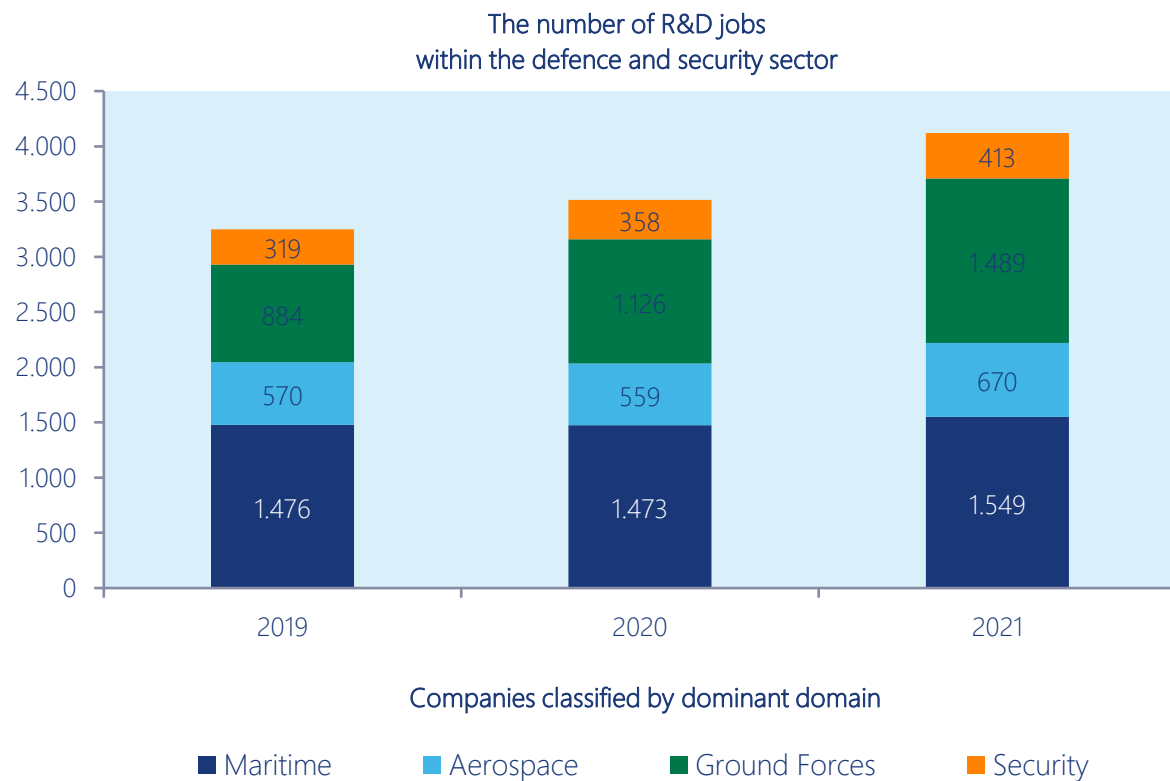


Percentage of R&D jobs in The Netherlands as share of total staff employed in the defence and security sector

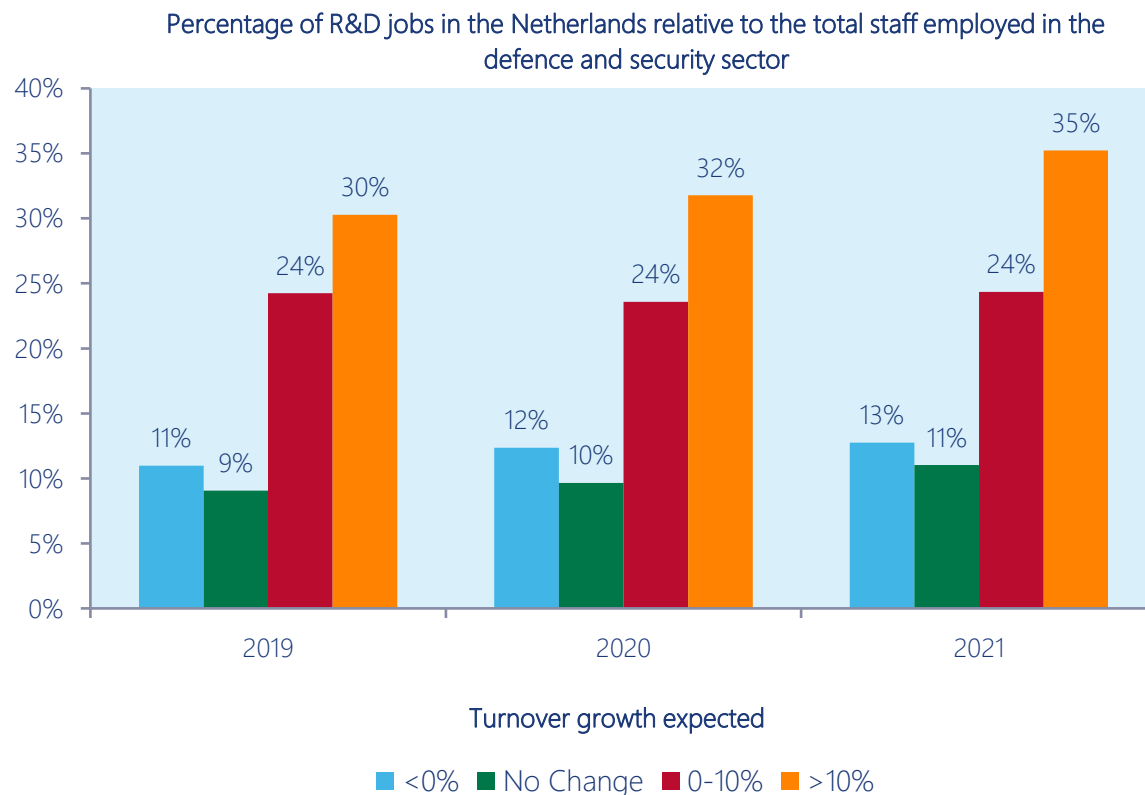


R&D jobs mainly present in land and maritime domain

There is a large growth of FTEs working in an R&D function at companies operating in the land domain. This is mainly caused by organisations that focus strongly on niches, such as the sensor and smart industry.

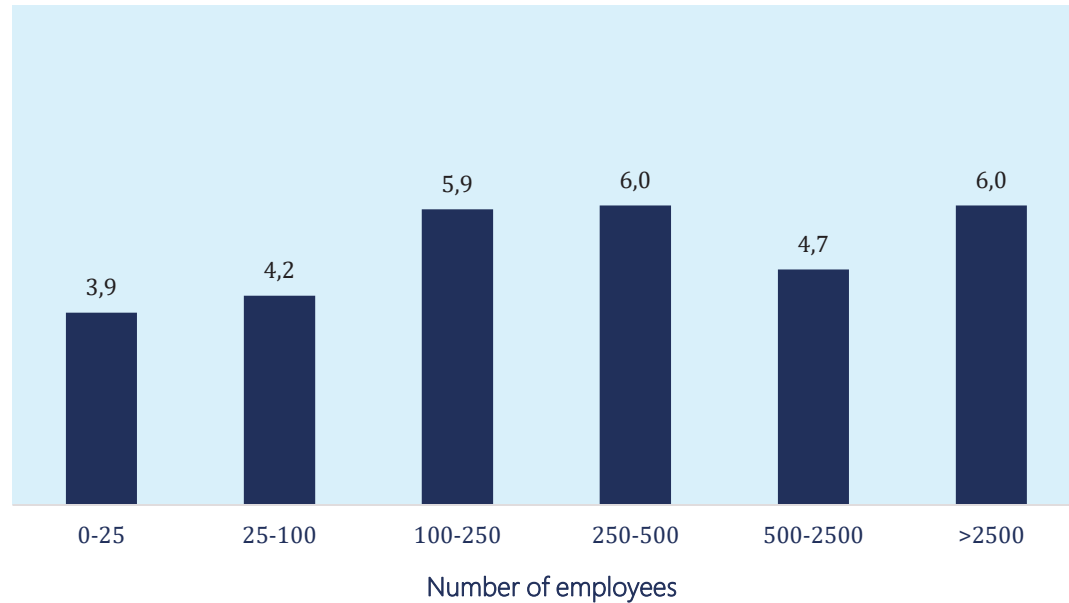


The high numbers for the maritime domain are explained by the fact that TNO is classified in that specific domain. Organisations with a high growth expectation invest more in R&D, and have more people employed in R&D.



The industry, and especially SMEs, are very critical towards the government and access to defence projects

Assessment of government support
to achieve the objectives stated in the DIS



"First, let's recognise what our organisation does."

"Award contracts based on quality, not price as is currently done."

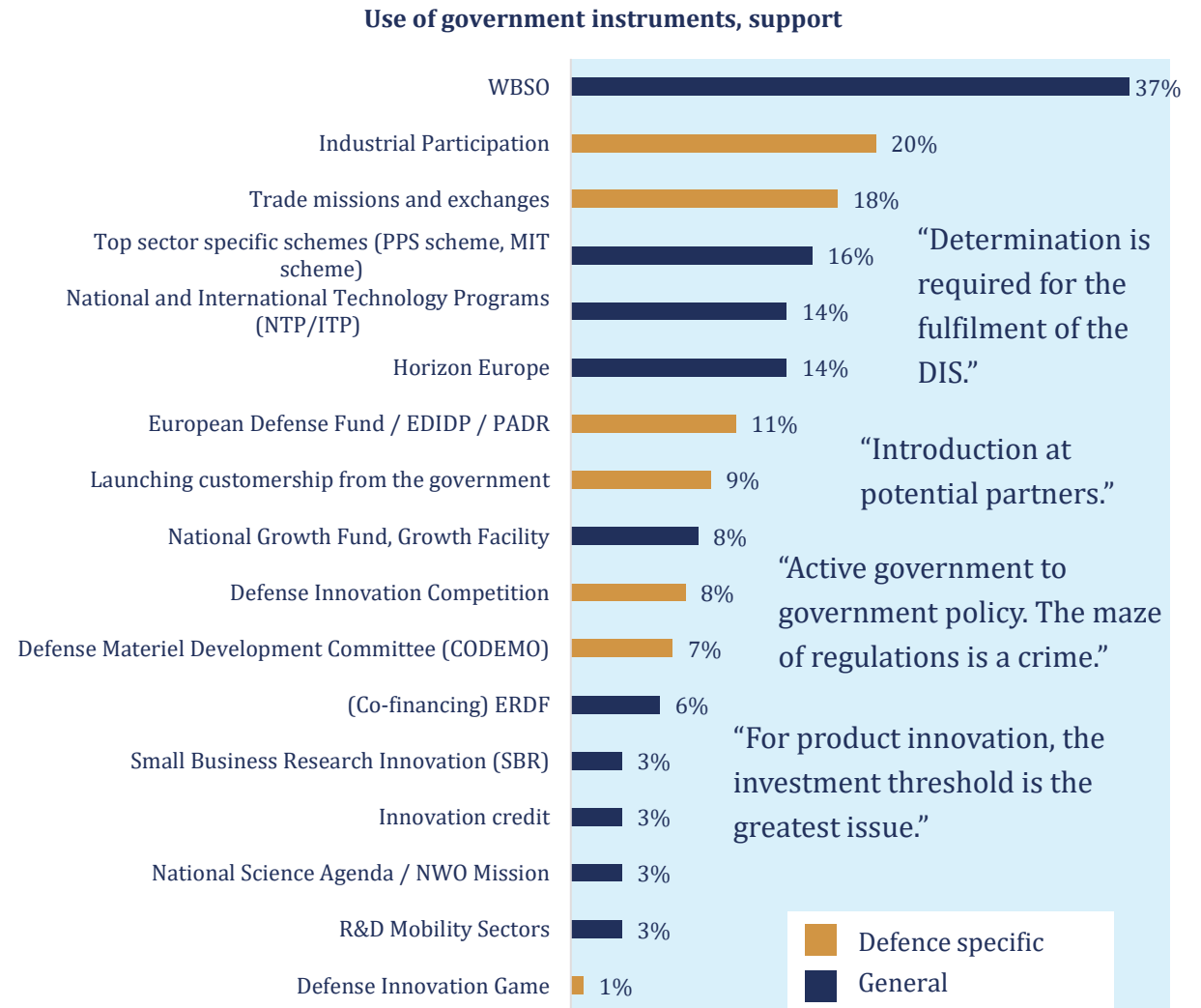
"It is nice when (the Ministry of) defence can act as a reference to other foreign ministries of defence. "

Source: quotes from participating companies

- The average is a 4.6 on a scale of 1 to 10.
- Companies are, among others, very critical on the procurement policy. Trajectories at the Ministry of Defence are lengthy and require large investments. This is particularly difficult for SMEs. The current procurement regulations but also budgets of decision-makers within (the Ministry of) defence do not sufficiently match when innovation is scaled up.
- A lot of paperwork and bureaucracy when using/applying for schemes/arrangements. Smaller companies struggle with the long lead times and the required development capacity. Also, insufficient long-term perspective is offered. Financing is an important issue as well.
- Criticism of knowledge and process at the DMO, and many changes in personnel.
- In tenders, (the Ministry of) defence aspires 'Off The Shelf' products for the lowest price; companies wonder whether this is the best solution in the long run in light of the DIS.
- There is a need for support in financing projects, shorter turnaround times in tenders, and awarding contracts more on the basis of quality instead of price.

Use of government instruments, policies and support

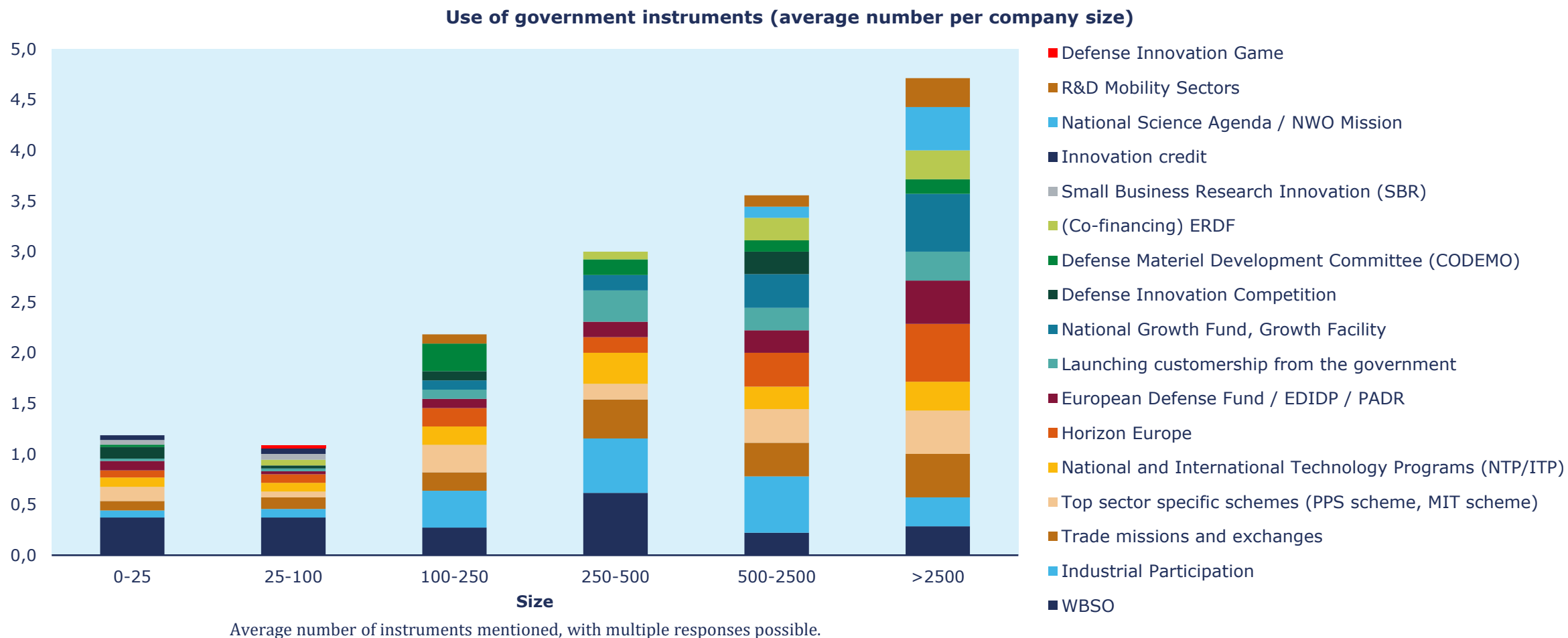
- Companies are using more general instruments opposed to defence specific instruments. The WBSO, Industrial Participation and Launching Customer are found beneficial, as well as the introduction to foreign ministries. Other instruments of the Ministry of Defence are little used. There are too many regulations, and the companies find that the instruments are too fragmented.
- There are mixed experiences in SMEs when it comes to support and growth. The National Growth Fund and EDF are experienced as too complicated, especially by SMEs.
- Companies indicate that the financing of export is well organised. However, with regard to the issuing of licences, they indicate that export is at times not possible or that the issuing of a licence takes (too) long, so that the turnover potential disappears.
- Cooperation with future potential users within the Ministry of Defence is often difficult to accomplish.
- Companies indicate that the DIS has not yet been sufficiently translated into specific policy and implementation with corresponding funding.
- There is a need for production innovation incentives to strengthen the Dutch Defence Industry base.



% of number of participating companies, unweighted

Large organisations use significantly more instruments

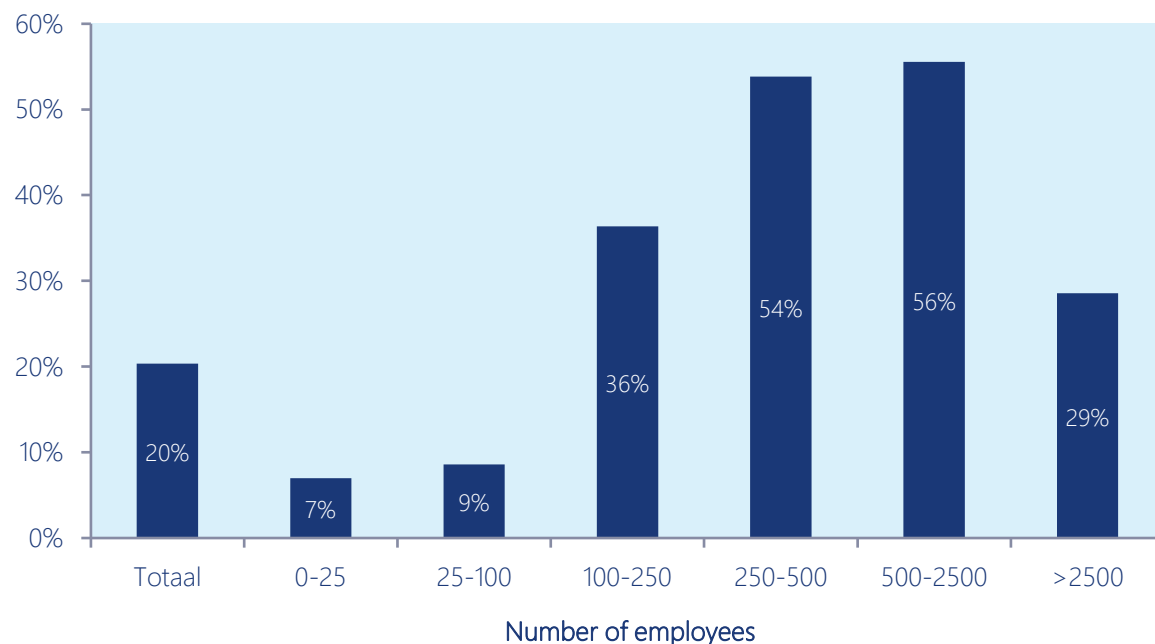
Organisations indicated which instruments are used, where multiple responses were possible. It is evident that larger organisations have better knowledge on how to access the various instruments.



Of the defence specific instruments, industrial participation is most often used

- Larger organisations make more use of Industrial Participation.

Percentage of companies using Industrial Participation by size class



"We, as SMEs, are far too small for industrial participation. Large parties are not open to it".

- Approximately 20% of the participating companies make use of Industrial Participation. We see that this especially applies to larger organisations, such as Tier 1 and knowledge institutes, and that it is more rare for fast-growing organisations.
- Interviews suggest that Industrial Participation is highly appreciated. It is seen as a powerful instrument. International cooperation is also appreciated, where the F-35 is mentioned as an example. It allows a small country to participate after all.
- However, SMEs do not feel involved or do not enjoy success with Industrial Participation. However, annual reports show that a large share of the funding goes to SMEs. The report for 2019-2020 states that by 2020, approximately 61% of funds have ended up in SMEs (<250 employees).
- The Industrial Participation Policy report 2019-2020 shows that between €200 and €300 million is awarded annually for Industrial Participation.

Use Industrial participation	2016	2017	2018	2019	2020
Number of claims	363	285	310	293	283
Approved (mio euro)	€ 200	€ 266	€ 337	€ 322	€ 320
IP per claim (mio euro)	0,55	0,93	1,09	1,10	1,13

Source: Industrial participation policy report 2019-2020



Dutch Defence and Security- related Technological and Industrial Base

Research approach



Research validation

- For the total population, the total number of employees has been identified based on public data and, where possible, financial key figures such as turnover, added value, the percentage of R&D costs of the turnover and percentage of export of the turnover have been studied.
- The research population has changed compared to the last survey. In 2016, 651 companies were surveyed; in 2019, there were 475. In 2022, there will be 932.
- All companies in the population were invited to participate via a survey. The organisations had six weeks to provide the data. In total, 180 companies participated (19% of the population).
- Based on the sample, the data of the participants were weighted on the basis of employee class in order to obtain an estimate of the entire population. This is similar to how the survey was carried out in previous years. However, this time various corrections have been made in order to make a reliable estimate of the total market.
- The figures were checked against other public sources and also compared with previous years. Overall, the group of participants gives a representative picture of the population.

Corrections performed

- The data supplied were checked against public data.
- Missing data were estimated on the basis of previous years and other sources, such as annual accounts.
- The non-response has been analysed. Most organisations that do more business with the Ministry of Defence responded more often. Hence, a correction has been made to the extrapolation of the sample.
- Companies that turn out not to work in the defence and security sector after all were removed from the sample and from the population.
- The nine largest organisations and knowledge institutes are unweighted. These organisations therefore only count for their own figures and have not been multiplied by a re-weighting factor.

Size range	Response
0-25	17%
25-100	19%
100-250	13%
250-500	28%
500-2500	23%
>2500	53%
Total	19%

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